



SPECIFICATIONS

PERFORMANCE

Maximum Horsepower	64HP @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	850 mm (33.5 in)
Overall Height	1,145 mm (45.1 in)
Wheelbase	1,420 mm (55.9 in)
Ground 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	Non-leaded gasoline
Starting	Electric starter and kick
Carburetors	MIKUNI VM24SS

Ignition System	Battery and coil
Ignition Timing	BTDC 10° @1,600~35° @3,200 rpm
Spark Plugs	NGK B8ES or DENSO W24ES
Lubrication	Forced lubrication (wet sump)
Engine Oil	SE class SAE 10W40, 10W50, 20W40, or 20W50
Engine Oil Capacity	3.5 ℓ (3.7 US qt)

TRANSMISSION

Type	5-speed, constant mesh, return shift
Clutch	Wet, multi disc
Primary Reduction Ratio	2.55 (27/23 x 63/29)
Final Reduction Ratio	2.63 (42/16)
Overall Drive Ratio	5.95 (Top Gear)
Gear Ratio: 1st	2.33 (35/15)
2nd	1.63 (31/19)
3rd	1.27 (28/22)
4th	1.04 (26/25)
5th	0.89 (24/27)

FRAME

Castor	63°
Trail	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		16.8 ℓ (4.4 US gal)

ELECTRICAL EQUIPMENT

Battery	12V 10AH
Headlight	12V 50/35W
Tail/Brake Light	12V 8/27W (3/32 CP)
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)

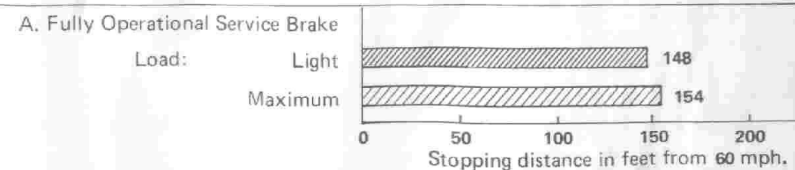
Specifications subject to change without notice.

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-B1



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 diagrammed 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.

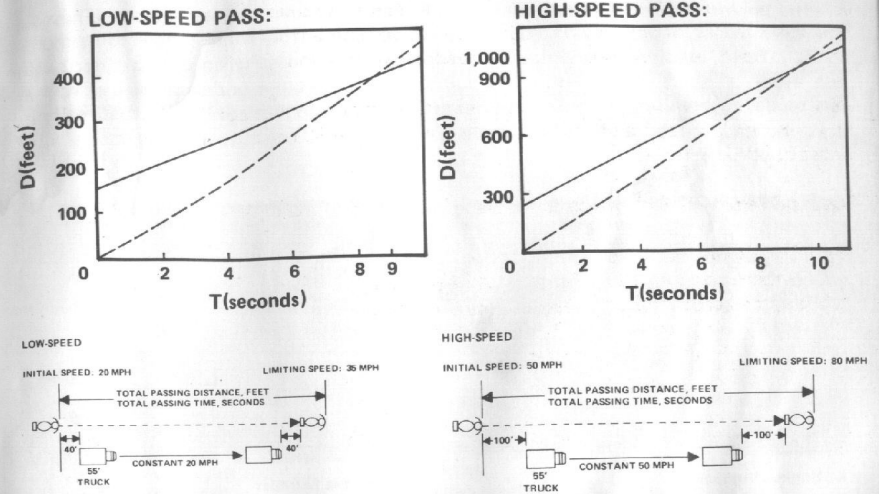
Note: The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.

Description of vehicle to which this table applies. Model KZ650-B1

Summary Table:

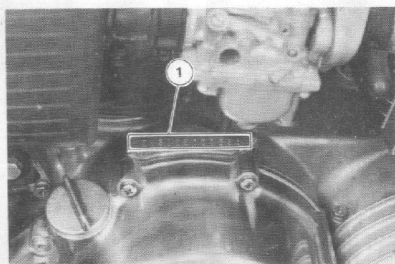
Low-speed pass	395	feet;	8.62	seconds
High speed pass	953.8	feet;	9.43	seconds

Graphic Determination of Passing Time and Distance

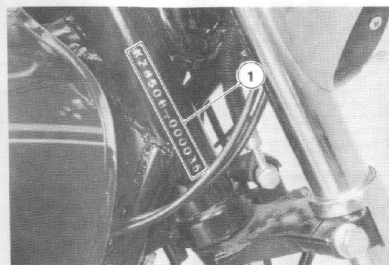


SERIAL NUMBER LOCATIONS

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.



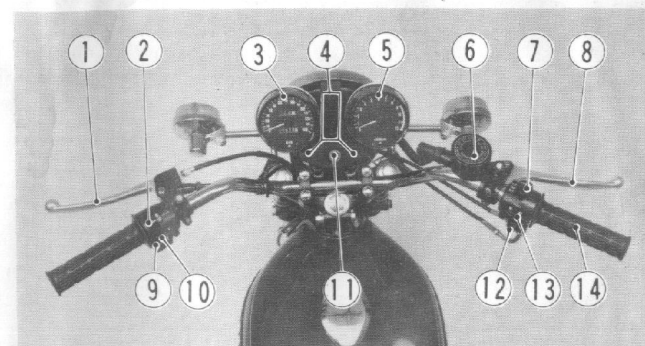
1. Engine Number



1. Frame Number

10 SERIAL NUMBER LOCATIONS

LOCATION OF PARTS



- | | | |
|---------------------|--------------------------|----------------------|
| 1. Clutch Lever | 6. Brake Fluid Reservoir | 11. Ignition Switch |
| 2. Dimmer Switch | 7. Engine Stop Switch | 12. Starter Button |
| 3. Speedometer | 8. Front Brake Lever | 13. Headlight Switch |
| 4. Indicator Lights | 9. Horn Button | 14. Throttle Grip |
| 5. Tachometer | 10. Turn Signal Switch | |

LOCATION OF PARTS 11

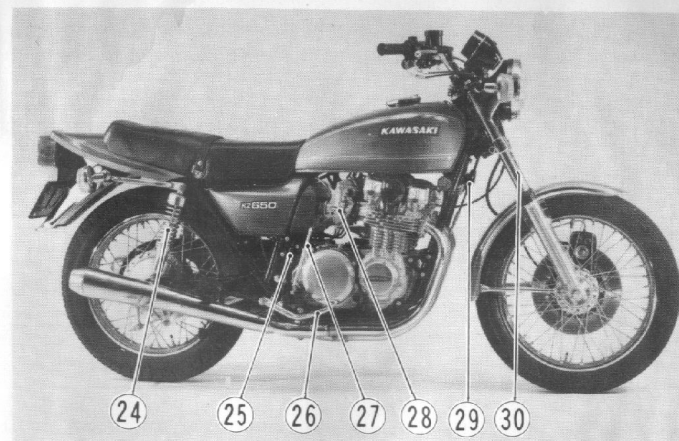


- 15. Disc
- 16. Caliper
- 17. Steering Lock

- 18. Choke Lever
- 19. Shift Pedal
- 20. Fuel Tap

- 21. Side Stand
- 22. Center Stand
- 23. Seat Lock

12 LOCATION OF PARTS



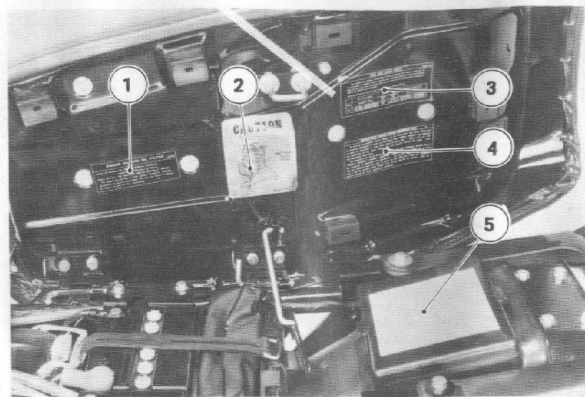
- 24. Rear Shock Absorber
- 25. Rear Brake Light Switch

- 26. Rear Brake Pedal
- 27. Kick Pedal
- 28. Carburetor

- 29. Horn
- 30. Front Fork

LOCATION OF PARTS 13

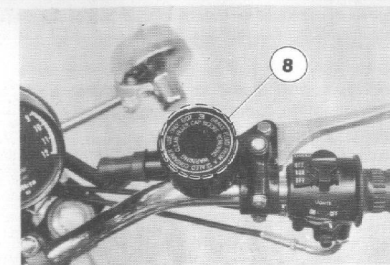
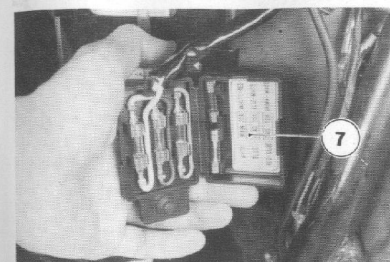
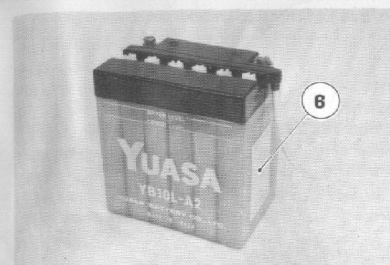
LOCATION OF CAUTION LABELS



- 1. Engine Oil and Oil Filter
- 2. Battery Vent Hose Routing
- 3. Tire and Load Data

- 4. Important Drive Chain Information
- 5. Daily Safety Checks

14 LOCATION OF CAUTION LABELS



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

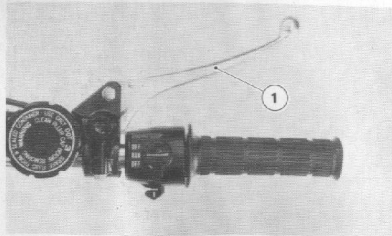
LOCATION OF CAUTION LABELS 15

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.

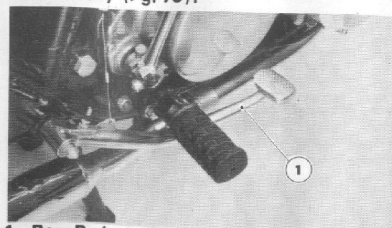


1. Front Brake Lever

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

See Pg. 72 for a list of recommended brake fluids and for other important brake information.

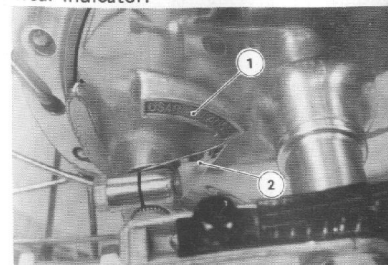
When either the front or rear brake is applied, the brake light goes on. The front brake employs a pressure switch which requires no adjustment, but the rear brake light switch should be adjusted if necessary (Pg. 75).



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.

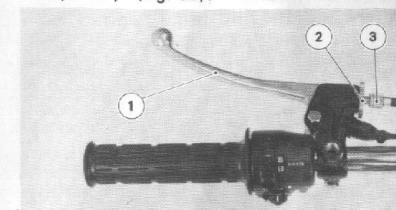


1. USABLE RANGE
2. Brake Lining Wear Indicator

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 re-tightening the knurled locknut. When this adjustment will no longer take up lever play, readjust the clutch completely (Pg. 63).



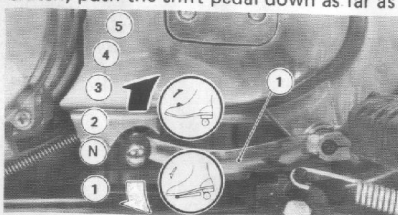
1. Clutch Lever
2. Knurled Locknut
3. Adjuster

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

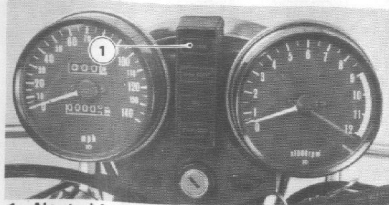


1. Shift Pedal

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 over-rev damage to the engine.

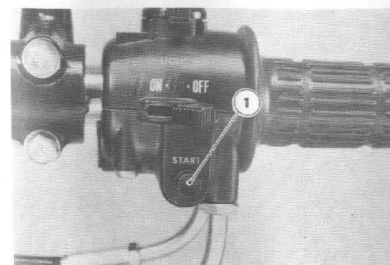


1. Neutral Indicator Light

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

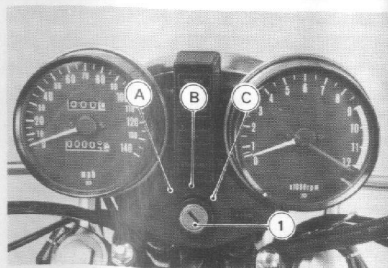
This motorcycle has a combination key, which is used for the ignition switch, steering lock, seat lock, and fuel tank cap.

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.

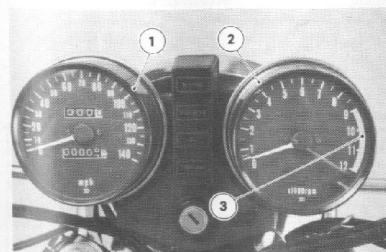
OFF	Engine off. All electrical circuits off.
ON	Engine on. All electrical equipment can be used.
PARK	Engine off. Tail light on. All other electrical circuits cut off.



1. Ignition Switch
A. OFF Position B. ON Position
C. PARK Position

Speedometer and Tachometer

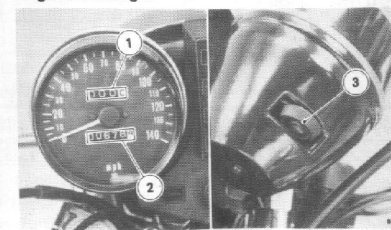
The speedometer shows the speed of the vehicle. In the upper part of the speedometer face is the trip meter, which shows the distance traveled since it was last reset to zero. The trip meter can be reset to zero by turning the reset wheel clockwise. In the lower part of the speedometer face is the odometer.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



1. Speedometer 3. Red Zone
2. Tachometer

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.

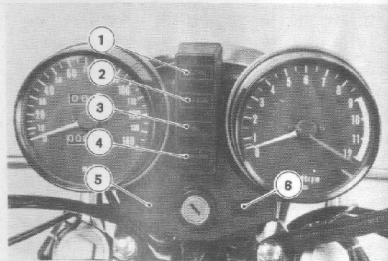


1. Trip Meter 3. Reset Wheel
2. Odometer

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.)

STOP LAMP

The indicator light labeled "STOP LAMP", located on the switch panel, is used to detect brake light failure.

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.

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.

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.

L-TURN

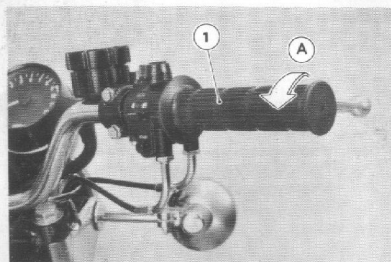
When the turn signal switch is turned on left, the orange left turn signal indicator light flashes on and off.

R-TURN

When the turn signal switch is turned on right, the orange right turn signal indicator light flashes on and off.

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. 59).



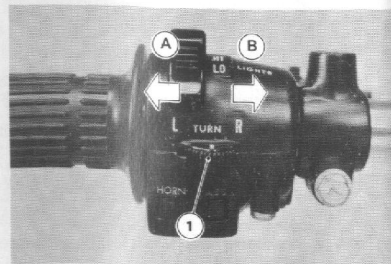
1. Throttle Grip A. Increase speed

Turn Signal Switch

The turn signals are operated by 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

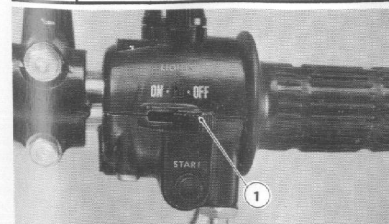


1. Turn Signal Switch
A. Left B. Right

Headlight Switch (not on Canada 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, and meter lights come on if the switch is pushed forward to the ON position with the ignition switch in the ON position.

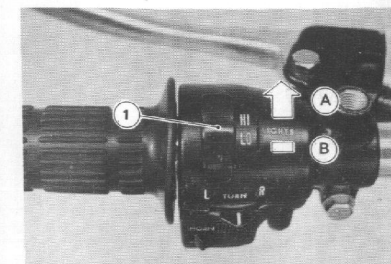


1. Headlight Switch

Dimmer Switch

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

HI.....High Beam
LO.....Low Beam

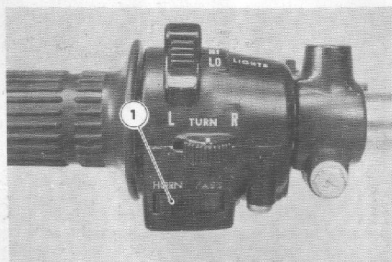


1. Dimmer Switch
A. High Beam B. Low Beam

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.



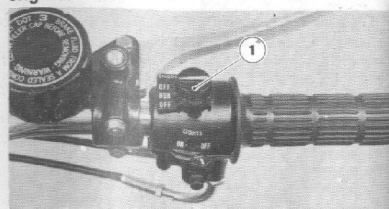
1. Horn Button

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

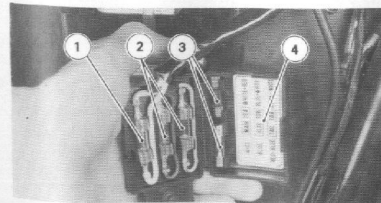
Fuse Box

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
4. Fuse Box Label

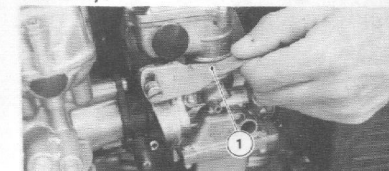
Choke Lever

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

Pull it all the way up and leave it up until the engine is warm. As the engine becomes warm and engine rpm increases, push down the choke lever gradually so that engine speed stays below 2,000 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

Non-leaded 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.

WARNING •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 Tank Cap

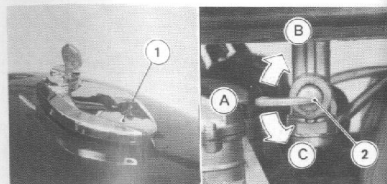
To open the fuel tank cap: insert the ignition switch key into the cap, turn the key to the right, and open the cap. The fuel tank cap is locked when pushed back into place.

Fuel Tap

The fuel tap has three positions: **OFF**, **ON**, and **RES** (reserve). If the fuel runs out with the tap in the **ON** position, the last 2.4 liters (0.63 US gal) of fuel can be used by turning the tap to **RES**.

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.



1. Fuel Tank Cap
2. Fuel Tap
A. OFF position
B. RES position
C. ON position

Stands

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

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.

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. Don't pull up on the seat to lift it as this will only damage the seat.



A. Lift here

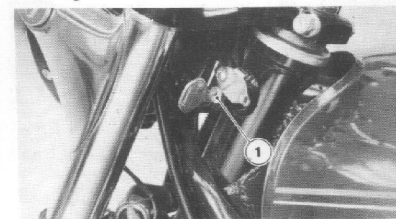
Steering Lock

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.

Note: Unlock the steering before starting the engine.



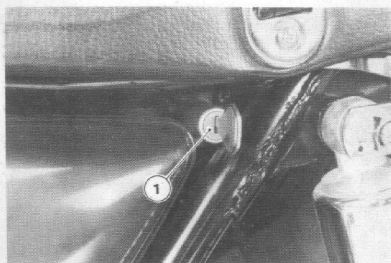
1. Steering Lock

Seat Lock

The hinged seat can be swung open for checking the battery or wiring, or gaining access to the tools.

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

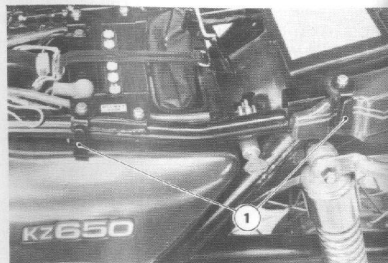
The seat is locked when pushed back into place.



1. Seat Lock

Helmet Hooks

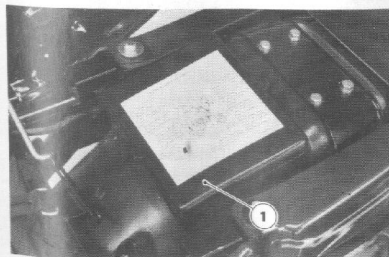
The rider's helmet can be secured to the motorcycle using the helmet hooks located under the seat.



1. Helmet Hooks

Document Container

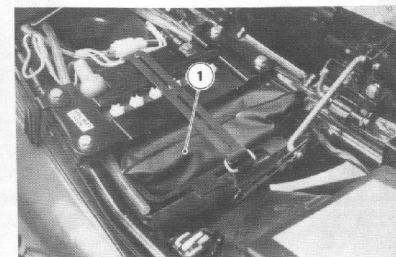
A receptacle for the owner's manual and any papers or documents that should be kept with the motorcycle is located under the seat.



1. Document Container

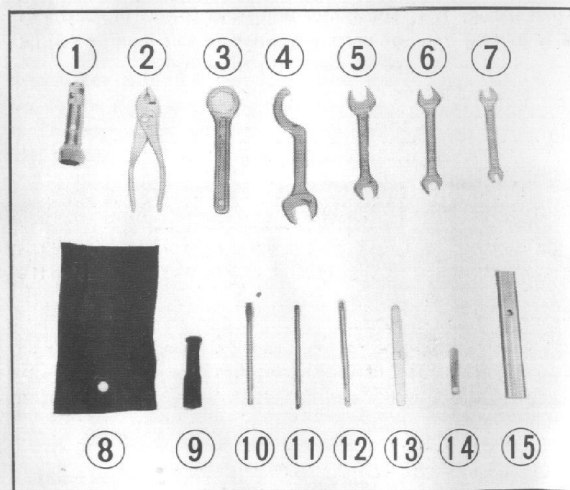
Tool Kit

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



1. Tool Kit

Tools



1. Spark Plug Wrench
2. Pliers
3. 27 mm Axle Wrench
4. Hook Wrench and 22 mm Open End Wrench
5. Open End Wrench 14 x 17 mm
6. Open End Wrench 12 x 13 mm
7. Open End Wrench 8 x 10 mm
8. Tool Case
9. Screwdriver Grip
10. Slot Bit
11. Phillips Bit #2
12. Phillips Bit #3
13. Screwdriver T-handle
14. Thickness Gauge 0.35 mm
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.
- The slow riding necessary during the break-in period may cause carbon to build up on the spark plugs and foul them. If inspection of the spark plugs shows this to be the case, replace the standard DENSO W24ES or NGK B8ES with NGK B7ES for the duration of the break-in period.

In addition to the above, the owner should take the motorcycle to an authorized Kawasaki Dealer for initial maintenance service at 800~1,600 km (500~1,000 mi).

HOW TO RIDE THE MOTORCYCLE

Starting the Engine

- Check that the steering is unlocked.
- Turn the fuel tap on.
- Turn the engine stop switch to **RUN**.
- Turn the ignition switch on.
- Make certain the gears are in neutral.

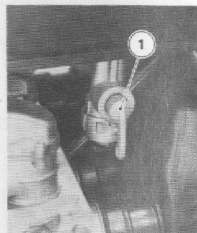
The green neutral indicator light should be lit.

- If the engine is cold, pull up the choke lever, leaving the throttle completely closed.

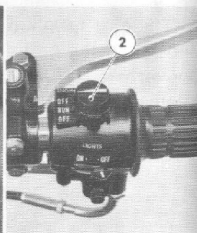
- Kick the engine over, or push the starter button with the clutch lever pulled in until the engine starts. Warm it up at less than 2,000 rpm.

- When the engine is warm enough to idle without use of the choke lever, push down the choke lever.

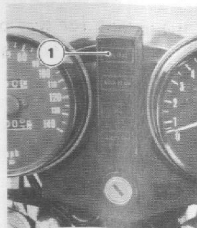
Note: When the engine is already warm or on hot days, open the throttle part way instead of using the choke lever, and



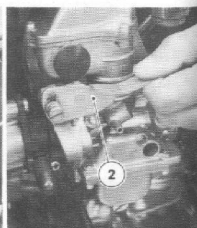
1. Fuel Tap



2. Engine Stop Switch



1. Neutral Indicator Light



2. Choke Lever

then kick over the engine or push the starter button with the clutch lever pulled in until the engine starts.

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.

Note: If the engine is stopped with the transmission in gear, the engine may be started by pulling in the clutch lever and pushing the starter button. Do not use the kick starter in this case.

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**.
- Close the fuel tap.
- 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 a 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 OPERATION

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 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.

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

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.

Daily Safety Checks

In order to ride more enjoyably and more safely, the daily safety checks should never be neglected. Since engine trouble or a severe accident may be prevented through carrying out these simple checks and correcting any trouble, make it a habit each day before riding to check the following:

Gasoline	Gasoline in tank
Engine oil	Oil level correct (Pg. 46)
Tires	Check for wear, cracks, and other damage (Pg. 80)
	Air pressure: front 2.00 kg/cm ² (28 psi)
	rear 2.25 kg/cm ² (32 psi)
Spokes and rim	Tighten any loose spokes (Pg. 79)
Drive chain	Check overall condition; chain slack 20 ~ 30 mm (0.8 ~ 1.2 in); oil as necessary (Pg. 67)
Battery	Electrolyte level correct (Pg. 87)
Nuts and bolts	Tighten any loose nuts and bolts (Pg. 96)
Front brake	Brake lever play is 3 ~ 5 mm (0.12 ~ 0.20 in); fluid up to level line; no damage to brake line or fittings (Pg. 70)

Clutch	Clutch lever play about 2 ~ 3 mm (0.08 ~ 0.12 in); releases properly, no slippage (Pg. 63)
Rear brake	Brake pedal travel 20 ~ 30 mm (0.8 ~ 1.2 in); with pedal fully applied, indicator position within the "USABLE RANGE" (Pg. 73)
Throttle grip	Throttle grip play correct (Pg. 59)
Steering	Check that the steering turns freely but has no play (Pg. 76)
Front fork	When pushing down on the handlebar with the front brake fully applied, the front fork functions properly; no oil leakage (Pg. 76)
Rear shock absorbers	Function properly, no oil leakage (Pg. 78)
Engine	No abnormal engine noise

If any irregularities are found during the above checks, refer to the Maintenance and Adjustment Section to make the corrections necessary for safe operation.

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 DENSO W24ES or NGK B8ES, but for prolonged high speed operation, use the next colder heat range spark plug NGK B9ES.
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. Some of these are so important that you should make a habit of checking them frequently or daily as in the case of the daily safety checks.

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	After initial 800 km (500 mi)	After initial 5,000 km (3,000 mi)	Every subsequent 5,000 km (3,000 mi)	Every subsequent 10,000 km (6,000 mi)	Page Reference
Check, adjust brakes		●	●	●		70
Check brake fluid level		●	●	●		71
Check, adjust clutch		●	●	●		63
Check adjust carburetors		●	●	●		62
Check spoke tightness and rim runout		●	●	●		79
Clean fuel system		●	●	●		92
Clean, set spark plug gaps		●	●	●		48
Check tire pressure and tread wear		●	●	●		80
Adjust camshaft chain		●		●		54
Check, adjust points, timing		●		●		49
Check valve clearance		●		●		55
*Check steering play		●			●	76
Tighten bolts and nuts		●			●	96
Check drive chain wear			●	●		67

Operation	Frequency	After initial 800 km (500 mi)	After initial 5,000 km (3,000 mi)	Every subsequent 5,000 km (3,000 mi)	Every subsequent 10,000 km (6,000 mi)	Page Reference
Clean air cleaner element			●	●		57
Perform general lubrication			●	●		94
Change engine oil		●	Every subsequent 3,000 km (2,000 mi)			47
Change oil filter element		●	Every subsequent 6,000 km (4,000 mi)			47
Lubricate drive chain		Every 300 km (200 mi)				69
Check, adjust drive chain		Every 800 km (500 mi)				67
Change air cleaner element		** Every 10,000 km (6,000 mi) or after cleaning 5 times				58
Check brake wear		Every 10,000 km (6,000 mi)				72,74
*Change front fork oil		Every 10,000 km (6,000 mi)				77
Lubricate timing advancer		Every 10,000 km (6,000 mi)				—
Change brake fluid		** Every year or 10,000 km (6,000 mi)				71
*Regrease wheel bearings		** Every 2 years or 20,000 km (12,000 mi)				—
*Regrease speedometer gear box		** Every 2 years or 20,000 km (12,000 mi)				—
*Regrease brake camshaft		** Every 2 years or 20,000 km (12,000 mi)				—
*Lubricate steering stem bearings		** Every 2 years or 20,000 km (12,000 mi)				—

*Should be serviced by an authorized Kawasaki Dealer.

**Whichever occurs first.

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.

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

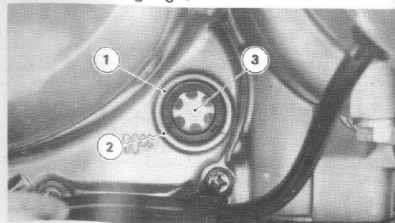
Oil Level

- 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 idling speed. This fills the oil filter with oil. Then wait several minutes until the oil settles.

CAUTION Run the engine at idling speed at least until the oil

pressure light turns off. Racing the engine before the oil reaches every part can cause the engine seizure.

- 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 Lever
2. Lower Level
3. Oil Level Gauge

- 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.

Engine Oil and Oil Filter Change

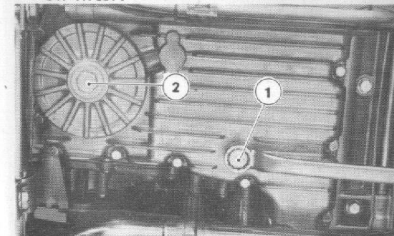
The engine oil should be changed periodically to ensure long engine life. Not only do dirt and metal filings collect in the oil, but the oil itself loses its lubricative quality if used too long.

The oil and oil filter must be changed periodically (Pg. 45).

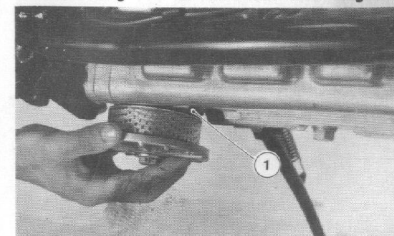
To change the oil and filter

1. Warm the engine up thoroughly.
2. Position the vehicle off its side stand so that it is fully perpendicular to the ground.
3. 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. Drain Plug 2. Oil Filter Mounting Bolt

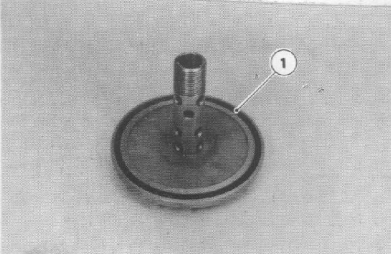


1. Oil Filter

4. 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.

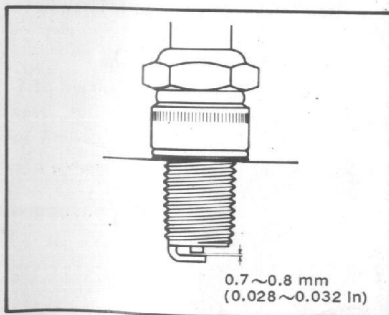
●When installing the oil filter, make sure the O ring is in place.



1. O ring

Spark Plug Maintenance

The standard spark plug is a DENSO W24ES or NGK B8ES. It should have a 0.7 ~ 0.8 mm (0.028 ~ 0.032 in) gap, and be tightened with 2.5 ~ 3.0 kg-m (18.5 ~ 21.5 ft-lbs) of torque.



Maintenance

The spark plugs should be taken out periodically for cleaning and to reset the gaps (Pg. 44). 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 solvent and a wire brush or other suitable tool. Measure the gap with a thickness gauge, and adjust the gap if incorrect by bending the outer electrode.

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 B9ES. If the ceramic is black, the plugs should be replaced with the next hotter type, NGK B7ES.

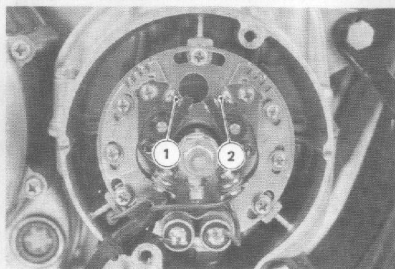
Ignition Timing Adjustment

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

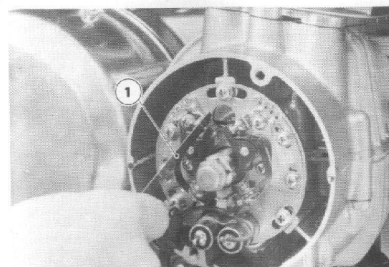
crankshaft. One is marked "1 4" and the other one is marked "2 3". After the gap is adjusted for both sets of points, timing must be adjusted twice using each F mark.

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 over lubricate. Replace the oil felt if it is worn.

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

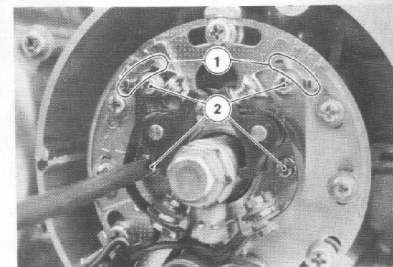
● Measure the size of the point gap with a thickness gauge. The proper gap is 0.3 ~ 0.4 mm (0.012 ~ 0.016 in).



1. Thickness Gauge

● If the gap is incorrect, loosen the contact breaker base screws (2) 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 (2), and remove the thickness gauge. Again turn the crankshaft, and recheck the point gap.

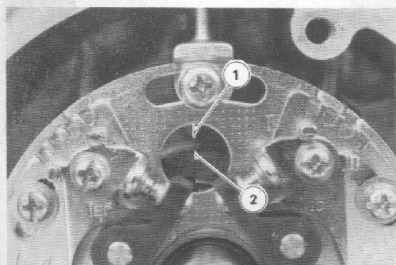


1. Pry Point
2. Contact Breaker Base Screws

- Repeat the steps above for the other set of points.
- Perform the timing test.

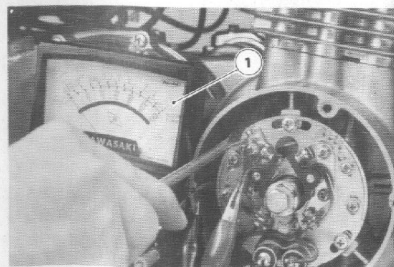
Timing Adjustment

- Turn the ignition switch off.
- Turn the engine stop switch off.
- Turn the crankshaft so the "F" mark on the timing advancer is aligned with the timing mark.



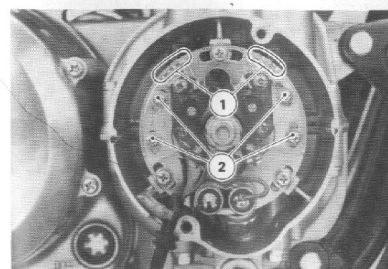
1. Timing Mark 2. F Mark

- Set an ohmmeter to the R x 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

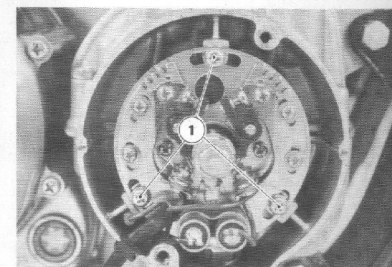
- Loosen the mounting screws (2), and turn the adjusting plate using a screwdriver in the pry points so that the contacts are just opening. The ohmmeter needle will flicker just when the points begin to open or close.



1. Pry Point 2. Mounting Screws

- If the adjusting plate will not travel far

enough to allow correct timing adjustment, loosen the stator plate screws (3) and turn the plate to provide more room for adjustment.



1. Stator 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.
- Install the contact breaker cover.

Camshaft Chain Adjustment

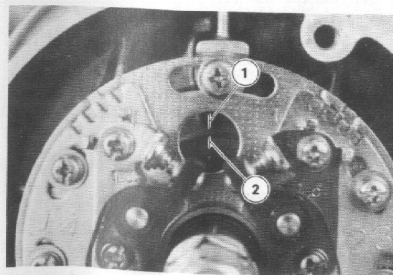
To keep the chain from making noise, periodic adjustment is necessary in accordance with the Periodic Maintenance Chart (Pg. 44).

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.

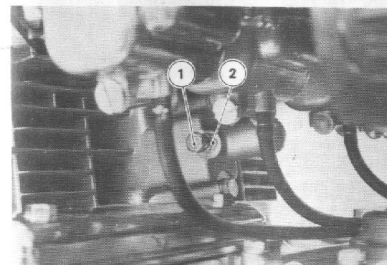
- Remove the contact breaker cover.
- Using a 17 mm wrench, turn the crankshaft clockwise about two turns, and set the #1 and #4 or the #2 and #3 T mark on the timing advancer so that it aligns with the mark on the right engine cover.



1. Timing Mark

2. T Mark

- 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 and then its locknut.

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.

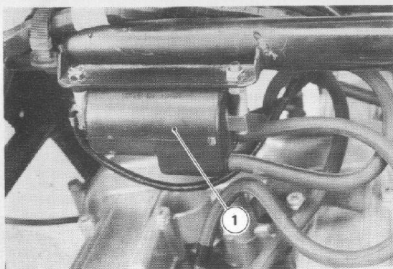
Valve clearance for each valve should be checked and, if incorrect, adjusted periodically (Pg. 44) and any time that clearance may have been affected by disassembly.

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.

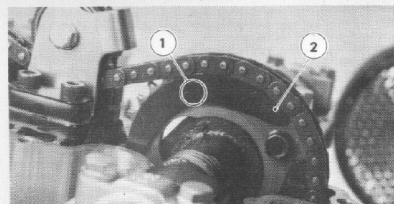
To check the valve clearance

- Remove the fuel tank.
- Remove the ignition coils.



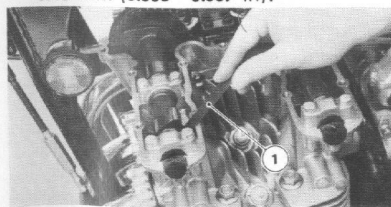
1. Ignition Coil

- Remove the bolts, and remove the cylinder head cover.
- 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

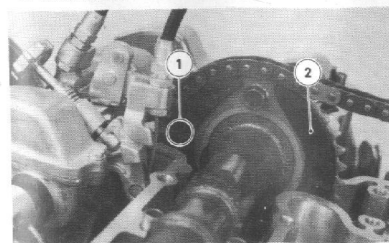
- Insert a thickness gauge between the cam and the valve lifter, and measure the two valves (#1 and #3) for which there is clearance. The correct clearance is 0.08 ~ 0.18 mm (0.003 ~ 0.007 in).



1. Thickness Gauge

- Turn the crankshaft until the "Ex" marked line is pointing to the rear aligned with the cylinder head surface (½ 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 front aligned with the cylinder head surface, and measure the two valves (#5 and #7) for which there is clearance.



1. Arrow 2. Inlet Camshaft Sprocket

- Turn the crankshaft until the inlet camshaft sprocket arrow is pointing to the rear aligned with the cylinder head surface (½ rotation), and measure the other two valves (#6 and #8).

Air Cleaner Maintenance

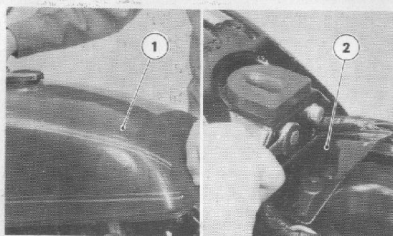
A clogged air cleaner restricts the engine's air intake, increasing gas consumption, reducing engine power, and causing spark plug fouling.

Air Cleaner Element Cleaning

The air cleaner element must be cleaned periodically (Pg. 45). In dusty areas, the element should be cleaned sooner than each recommended distance. After riding through rain or on muddy roads, the element should be cleaned immediately.

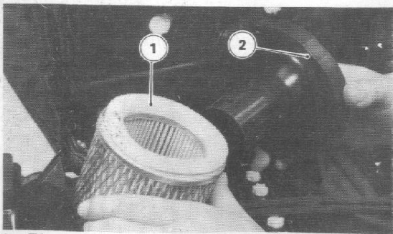
ELEMENT REMOVAL

- Unlock and lift up the seat.
- Remove the fuel tank and baffle plate.



1. Fuel Tank 2. Baffle Plate

- 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 carburetors and eventually damage the engine. If any part of the element is damaged, the element must be replaced.

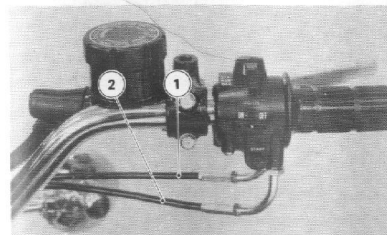
- Don't oil the element or carburetion will be upset.

Element Replacement

Replace the element after 10,000 km (6,000 mi), after cleaning it 5 times, or if it is damaged.

Throttle Grip 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



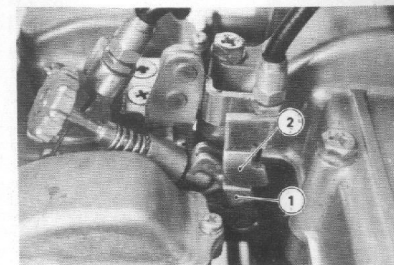
1. Accelerator Cable 2. Decelerator Cable

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.

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

To check the throttle cable adjustment

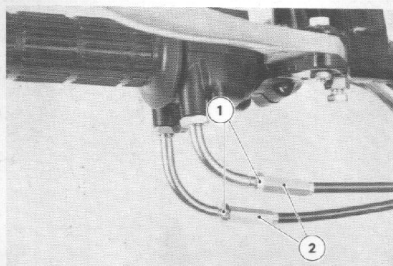
- Check that there is 2 ~ 3 mm throttle grip play.
- Push the throttle grip completely closed. At this time there should be no clearance between the cable bracket and the stopper.



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. Locknuts 2. Adjusting Nuts

- 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.

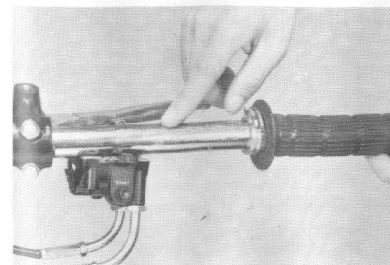
- Turn the ACCELERATOR cable adjusting nut until 2 ~ 3 mm of throttle grip play is obtained. Tighten the locknut.
- Note:** If the throttle cables can not be adjusted by using the cable adjusting nuts at the upper end of the throttle cables, use the cable adjuster at the lower end of the throttle cables. Do not forget to securely tighten the adjuster mounting nuts.

Lubrication

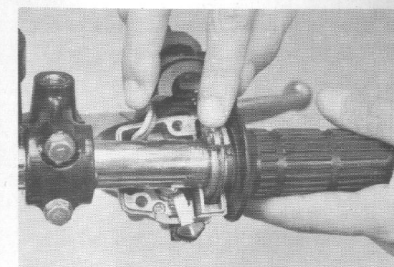
In order to keep the throttle grip turning properly and throttle cables sliding

smoothly, they should be lubricated periodically in the following manner.

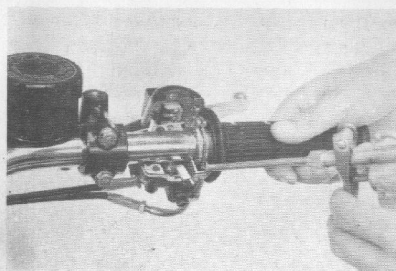
- Remove the engine stop switch housing screws.
- Turn the handlebar to the right, and slide the throttle grip slightly out of place.
- Wipe the old grease from the grip position on the handlebar, and apply a light coat of grease in its place.



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



- Turn the handlebar to the left.
- 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.

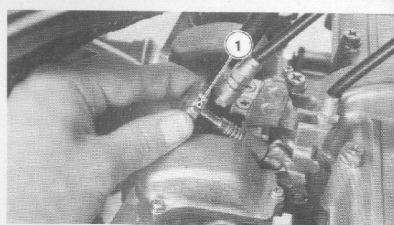


- Install the engine stop switch housing. Tighten the screws securely.

Note: After throttle grip reassembly, 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 idling speed to 950 ~ 1,050 rpm by turning the idling screw.



1. Idling Screw

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

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

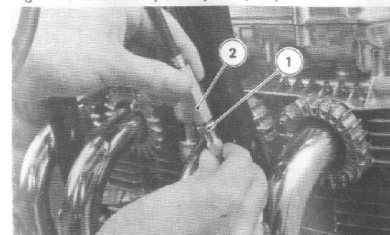
WARNING Operation with improperly adjusted, incorrectly routed, or damaged cables could result in an unsafe riding condition.

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. 44).

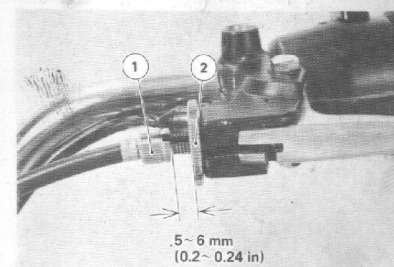
WARNING To avoid a serious burn, never touch a hot engine or exhaust pipe during clutch adjustment. To adjust the clutch

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



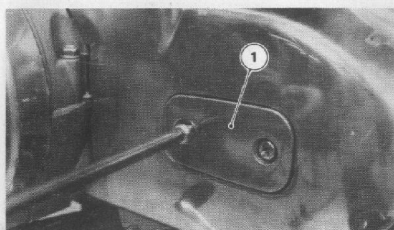
1. Locknut 2. Adjusting Nut

- 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.



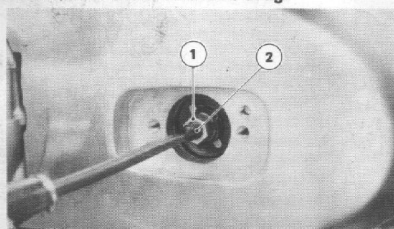
1. Knurled Locknut 2. Adjuster

- Remove the clutch adjusting cover and gasket.



1. Clutch Adjusting Cover

- Loosen the locknut, and back out the clutch adjusting screw 3 or 4 turns until the screw turns without drag.



1. Locknut 2. 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.

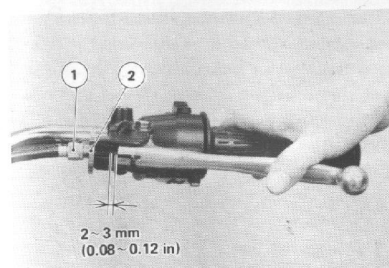
- Back out the adjusting screw ½ turn from that point, and tighten the locknut without changing the adjusting screw position.

- Take up all the cable play with the adjusting nut at the center of the cable, and then tighten the locknut.

- 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.

- 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

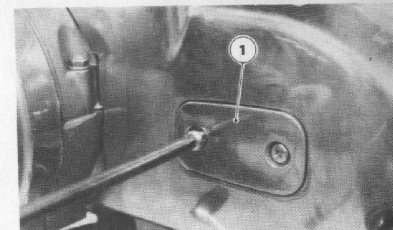
- Install the clutch adjusting cover and gasket.

Clutch Cable Lubrication

The exposed portions of the inner cable should be lubricated periodically.

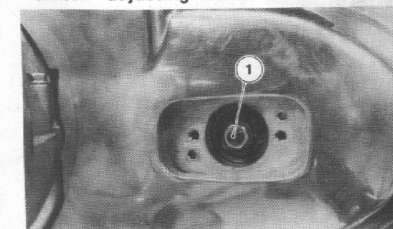
CABLE UPPER END REMOVAL

- Remove the clutch adjusting cover.



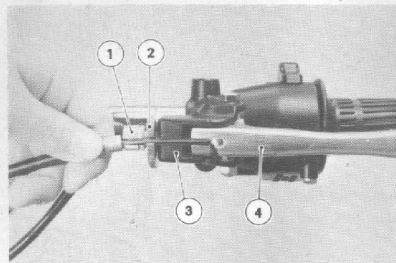
1. Clutch Adjusting Cover

- Loosen the locknut, and back out the clutch adjusting screw 3 or 4 turns.



1. Adjusting Screw

- 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.



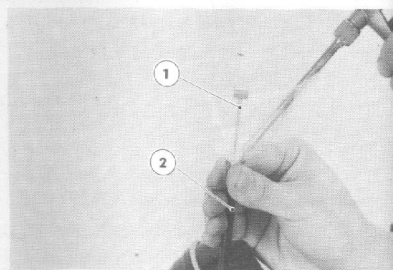
1. Adjuster
2. Knurled Locknut
3. Lever Holder
4. Clutch Lever

- 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. 63).

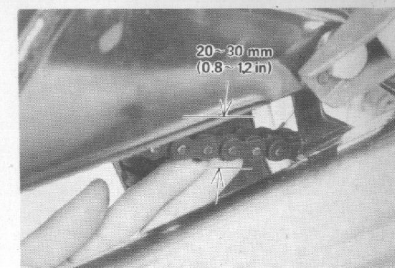
Drive Chain Maintenance

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.

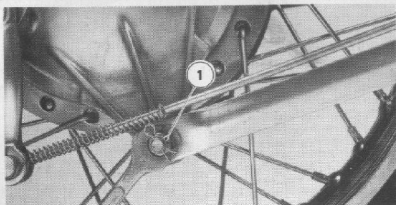


In addition to checking the slack, rotate the rear wheel to inspect the drive chain and sprockets for **damaged rollers, loose pins and links, unevenly or excessively worn teeth, and damaged teeth.**

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

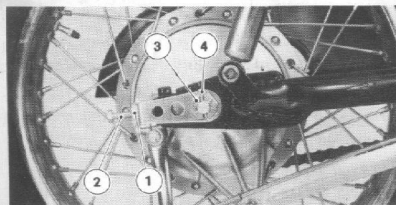
Adjustment

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



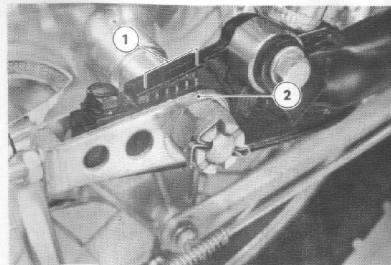
1. Torque Link Nut

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



- | | |
|---------------------------|---------------|
| 1. Chain Adjuster Locknut | 3. Axle Nut |
| 2. Adjusting Bolt | 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. Mark | 2. Notch |
|---------|----------|

WARNING Misalignment of the wheel will result in abnormal wear and may result in an unsafe riding condition.

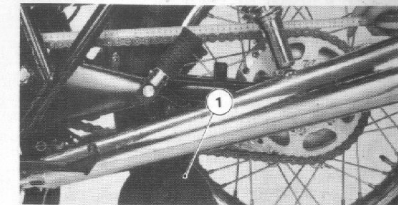
- Tighten the axle nut with 10 ~ 14 kg-m (72 ~ 101 ft-lbs) of torque.
- Rotate the wheel, measure the vertical movement again at the tightest position, and readjust if necessary.
- Insert a new cotter pin through the axle nut and axle, and spread its ends.
- Tighten the torque link rear nut, and insert a safety clip.

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

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-T₂O, 102 links. This is an endless type and should not be cut for installation; have it installed by a Kawasaki Dealer.

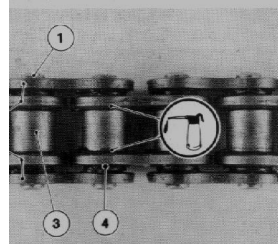
Chain Lubrication

To minimize chain wear, the drive chain should be lubricated periodically (Pg. 45). It should also be oiled after

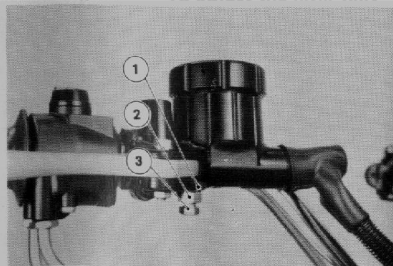
riding through rain or on wet roads, after washing the motorcycle, or any other time the chain appears dry.

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

s oil.



3. Roller
4. O ring



1. Washer
2. Locknut
3. Adjusting Bolt

Brake Adjustment

Front Brake Adjustment

The disc brake used on the front wheel is self adjusting except for hand lever play, which does not affect brake operation.

To adjust the lever play

- Loosen the locknut, turn the adjusting bolt a fraction of a turn so that the lever has 3 ~ 5 mm (0.12 ~ 0.20 in) play, and tighten the locknut.

3 ~ 5 mm
(0.12 ~ 0.20 in)



- Bend back part of the washer over the side of the locknut.

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



1. Level Line

The fluid should be completely changed after one year or 10,000 km (6,000 mi), whichever comes first. It should also be changed if it becomes contaminated with dirt or water.

reservoir up to the line inside (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**.

off any exces



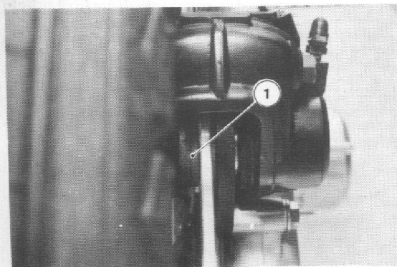
1. Pin
2. Links

Recommended Disc Brake Fluid

Atlas Extra Heavy Duty
Shell Super Heavy Duty
Texaco Super Heavy Duty
Wagner Lockhead Heavy Duty
Castrol Girling-Green
Castrol GT (LMA)

Brake Pad Replacement

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



1. Red Line

Note: •Except for adding fluid and adjusting hand lever play, disc brake maintenance 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.

CAUTION

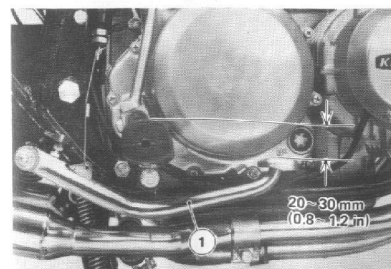
- Do not spill brake fluid onto any painted surface.
- Do not mix two brands of fluid.
- Do not use fluid from a container that has been left open or that has been unsealed for a long time.
- Check for fluid leakage around the fittings.
- Check for brake hose and brake pipe damage.

Rear Brake Adjustment

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

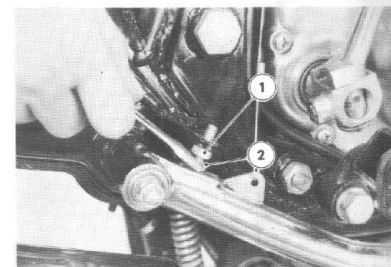
BRAKE PEDAL POSITION

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 po-



1. Rear Brake Pedal

sition, loosen the locknut, turn the adjusting bolt, and then tighten the locknut.

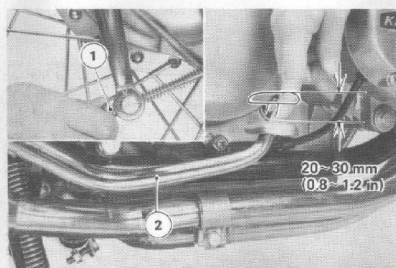


1. Locknut 2. Adjusting Bolt

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.

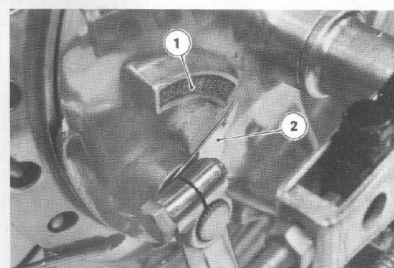


1. Adjusting Nut 2. Rear Brake Pedal

- 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,

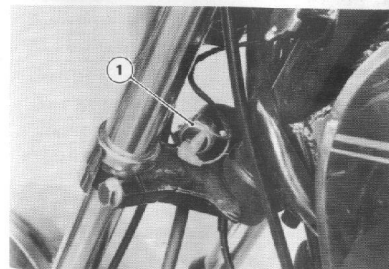


1. **USABLE RANGE**
2. Brake Lining Wear Indicator

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

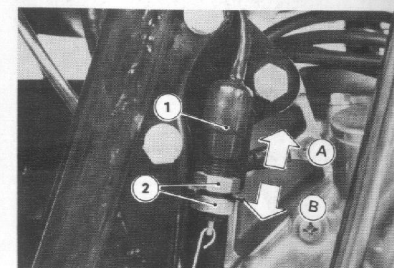
The front brake light switch is a pressure switch and is not adjustable. If it does not turn on the brake light with light pressure on the brake lever, the switch must be replaced and the brake lines bled afterward.



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 re-tightening the mounting nuts when the switch is properly positioned.



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

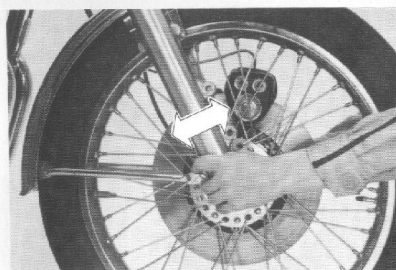
CAUTION To avoid damaging the electrical connections inside the switch, be sure that the switch body does not turn during adjustment.

Steering Inspection

For safety, the steering should always be kept adjusted so that the handlebar will turn freely but have no play.

If the steering is too tight, it will be difficult to turn the handlebar quickly, the motorcycle may pull to one side, and the steering stem bearings may become damaged. If the steering is too loose, the handlebar will vibrate and the motorcycle will be unstable and difficult to steer in a straight line.

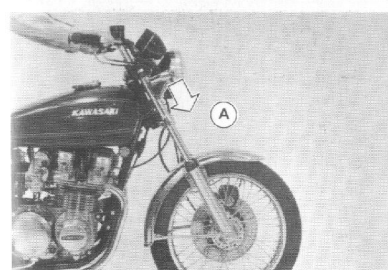
To check the steering adjustment, first place a stand or block under the engine so that the front wheel is raised off the ground. Push the handlebar lightly to either side; if it continues moving under its own momentum, the steering is not too tight. Squatting in front of the motorcycle, grasp the lower ends of the front fork at the axle, and push and pull the 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 seal for damage, and look for any signs of oil leakage.



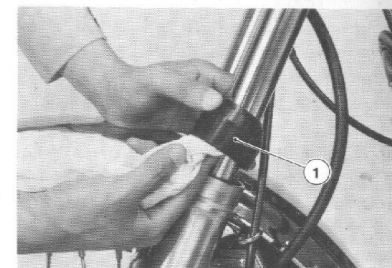
A. Push Down

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.



1. Dust Seal

Since the front fork oil deteriorates with use, have the oil in both tubes changed periodically by your authorized Kawasaki Dealer (Pg. 45).

Rear Shock Absorber Inspection and Adjustment

Inspection

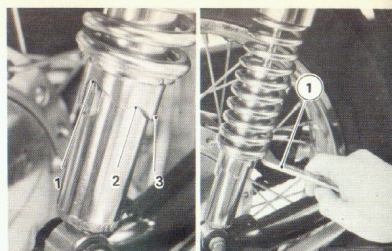
Since the rear shock absorbers are sealed units and can not be disassembled, only external checks of operation are necessary.

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 3 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	Spring Action	Conditions
1	Standard	Single rider
2	Slightly hard	Heavy rider, luggage strapped on
3	Hard	Rider and passenger

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

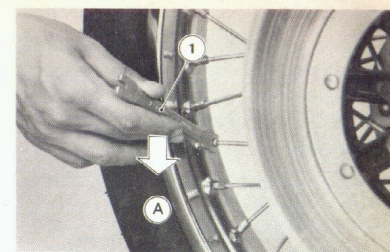
Wheel Inspection

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. 44).

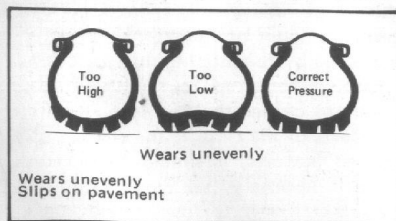


1. Spoke Wrench A. Tighten

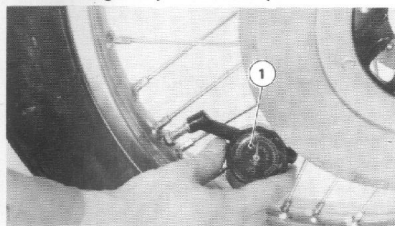
The rim axial runout should be under 3 mm (0.12 in), and the rim radial runout should be under 2 mm (0.08 in). A certain amount of runout (warp) can be corrected by re-centering the rim, i.e., by loosening some spokes and tightening others to change the positions of different parts of the rim. If the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

Tires and Tubes

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 under-inflated, and along the center



of the tread when the tire is over-inflated. 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

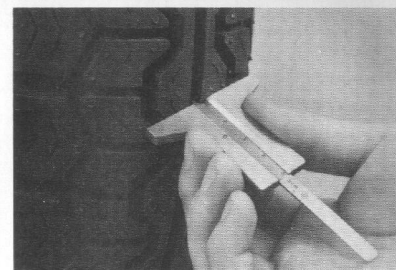
Increase tire pressure as shown on the chart when carrying a passenger.

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,



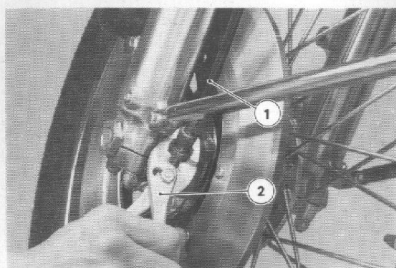
but if undertaken, it must be done with extreme care to prevent a subsequent flat tire, and possible loss of control.

	Air Pressure (Cold)		Size	Make Type	Minimum Tread Depth	
Front	2.00 kg/cm ² (28 psi)		3.25H-19 4PR	DUNLOP F6B	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 K87MARK IIIM	Normal Speed	2 mm (0.08 in)
	Over 97.5 kg (215 lbs) load	2.50 kg/cm ² (36 psi)			Over 80 MPH	3 mm (0.12 in)

Wheel Removal

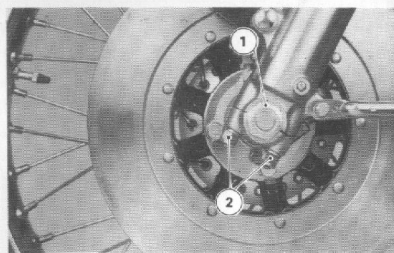
Front Wheel Removal

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



1. Speedometer Cable 2. Pliers

- Loosen the front axle clamp nuts (4) but do not remove them. Then loosen the front axle nuts (2).



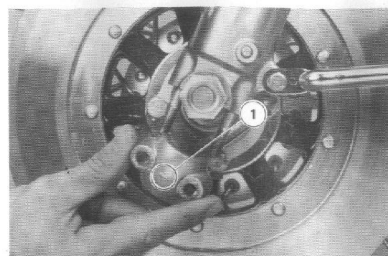
1. Axle Nut

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 thick) between the disc brake pads. This prevents them from being moved out of their proper position, should the brake lever be squeezed accidentally.

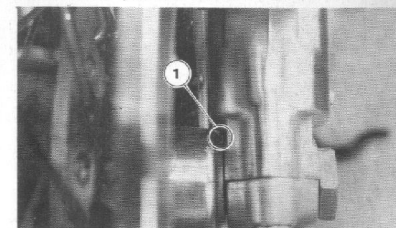
Installation

- 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

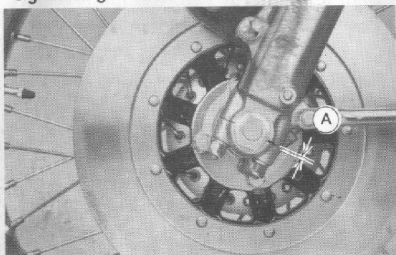
- Turn the speedometer gear housing so that it points to the two o'clock position. Be sure that the small projection on the gear housing does not catch on the lower part of the left tube.



1. Projection

- Tighten the axle nuts with 7 ~ 9 kg-m (51 ~ 65 ft-lbs) of torque, and position the speedometer housing by turning it counterclockwise until it stops.
- Tighten first the front axle clamp nut and then the rear nut with 1.6 ~ 2.2 kg-m (11.5 ~ 16 ft-lbs) of torque. There will

be a gap at the rear of the clamp after tightening.



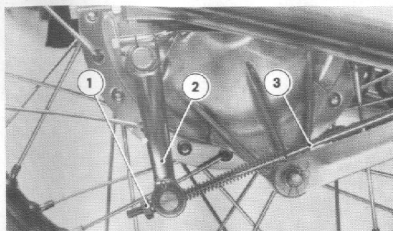
A. Gap

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 inner cable into the housing while turning the wheel so that the slot in the end of the cable will seat in the tongue of the speedometer pinion. Tighten the cable nut with pliers.

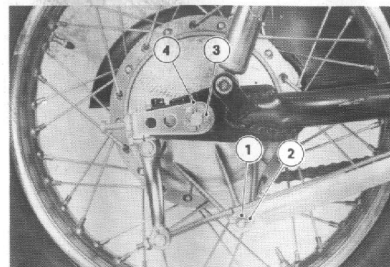
Rear Wheel Removal

- 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 chain cover.
- 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.



1. Adjusting Nut
2. Cam Lever
3. Brake Rod

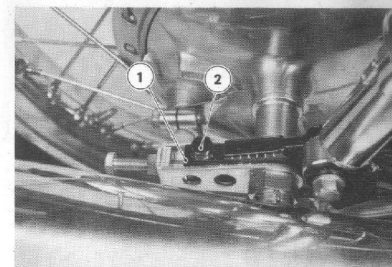
- Take out the clip from the rear torque link bolt, remove the nut, lockwasher, and bolt.
- Take out the cotter pin, and loosen the axle nut.



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

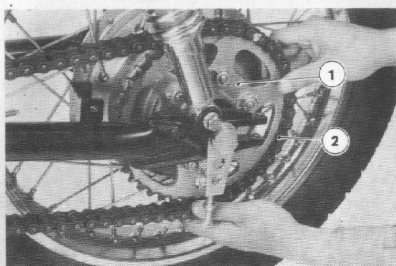
- Remove the chain adjuster stopper bolts,

and take out the chain adjuster stoppers.



1. Chain Adjuster Stopper
2. Stopper Bolt

- Loosen the left and right chain adjuster locknuts, back out the chain adjusting bolts, and kick the wheel forward until the chain is too loose.
- Slip the chain off the sprocket, and then pull out the wheel.



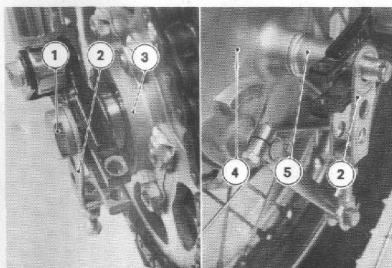
1. Rear Sprocket 2. Drive Chain

- Remove the axle nut, and pull off the axle.

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, spacer, 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 2. Chain Adjusters
3. Coupling 4. Brake Panel 5. Spacer

- Install the chain adjuster stoppers, and tighten the stopper bolts.
- Fit the drive chain onto the rear sprocket.
- Insert the axle nut, and tighten the nut loosely.

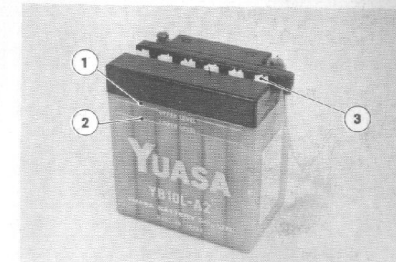
- Insert the torque link bolt into the brake panel, and install the torque link, lockwasher, and nut. Tighten the nut loosely.
- Adjust the drive chain (Pg. 67).
- Install the spring on the end of the brake rod, fit the rod through the link pin, and screw on the adjusting nut.
- Install the chain cover.
- Carefully fit the rear brake light switch spring back into the tab on the brake pedal.
- Adjust the rear brake (Pg. 73), and check the rear brake light switch adjustment (Pg. 75).

Battery Maintenance

Battery Electrolyte Level Inspection

Keep the electrolyte level between the lower and upper 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.



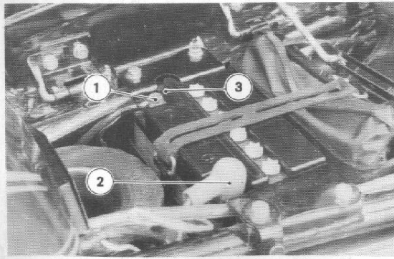
1. Upper Level 2. Lower Level 3. Filler Cap

CAUTION 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 1.200, 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. Battery Vent Hose
2. + Terminal

- 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.

●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.

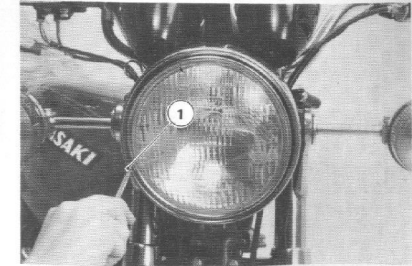
●Keep the battery terminals clean, and put a light coat of grease on them to prevent corrosion.

Headlight Beam Adjustment

The headlight beam is adjustable both horizontally and vertically. 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

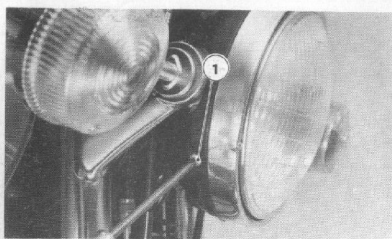
●Turn the small screw on the headlight rim in or out until the beam points straight ahead. Turning the adjusting screw clockwise makes the headlight beam point to the left.



1. Adjusting Screw

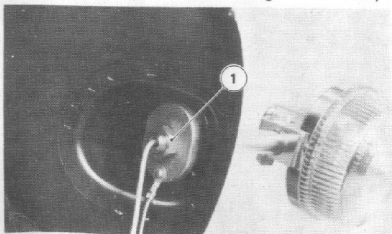
Vertical Adjustment

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



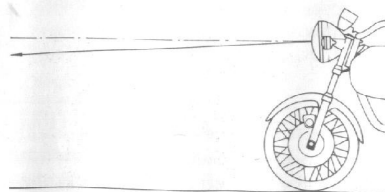
1. Mounting Screw

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



1. Mounting Nut

Note: On high beam, the brightest point should be slightly below horizontal. Adjust the headlight to the proper angle according to the regulation that applies to its operation.



- 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.

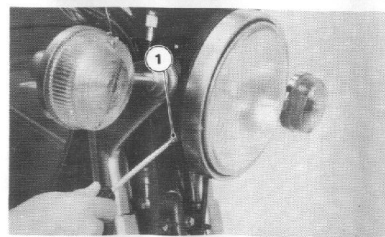
H.L. Sealed Beam Unit : 12V 50/35W

Turn Signal Light Bulb : 12V 23W

Tail/Brake Light Bulb : 12V 8/27W

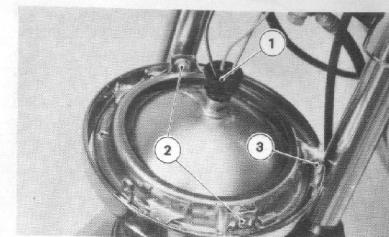
Headlight Sealed Beam Unit Replacement

- Remove the two mounting screws and drop out the headlight unit.



1. Mounting Screw

- 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

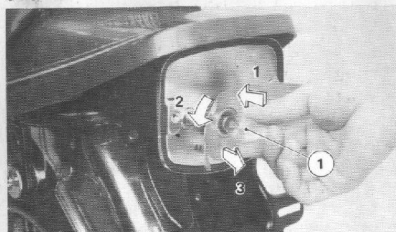
- Pull the sealed beam unit from the rim.
- Note:** ○When installing the new sealed beam unit, be sure that the TOP mark is facing up.

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

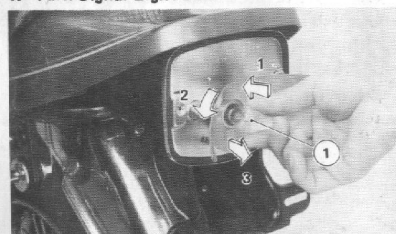
Turn Signal Light and Tail/Brake Light Bulb Replacement

Remove the lens, press the bulb

inwards, twist it to the left, and pull it out.



1. Turn Signal Light Bulb



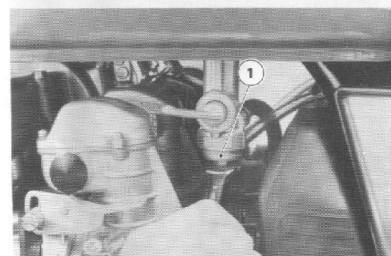
1. Tail/Brake Light Bulb

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

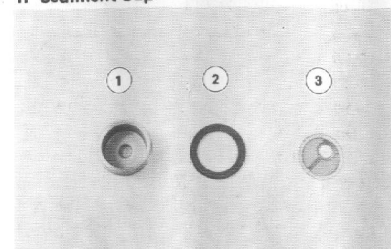
Fuel Tap Cleaning

Accumulation of water or sediment in the fuel tank and tap will restrict the flow of fuel and cause the carburetors to malfunction. The fuel tap should be cleaned out periodically in the following manner (Pg. 44):

- Turn the fuel tap lever to OFF, and unscrew the sediment cup from the bottom of the fuel tap. The gasket and filter are mounted on the fuel tap. Being careful not to damage the gasket and filter, remove the filter using a screwdriver.



1. Sediment Cup



1. Sediment Cup
2. Gasket
3. Filter

- Using a piece of cloth, wipe out the inside of the fuel tap, wash the cup and filter in a high flash-point solvent and then reassemble.

Note: If water has accumulated in the sediment cup, water may also have accumulated in the float bowls. In this case have the carburetors checked by your authorized Kawasaki Dealer.

- After washing, check the gasket and filter. Replace if damaged.

- Make sure the sediment cup is tight. Turn the fuel tap lever a few times to the "RES" position, and check for leaks. If fuel leaks from the sediment cup, the gasket may be damaged. Visually inspect the gasket and replace it if necessary.

WARNING Clean the fuel tap in a well-ventilated area, and take ample care that there are no sparks or flame anywhere near the working area.

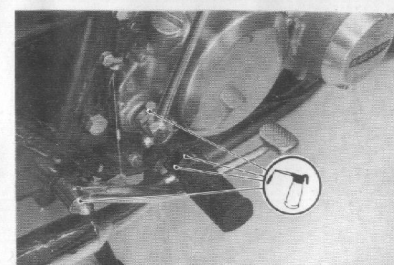
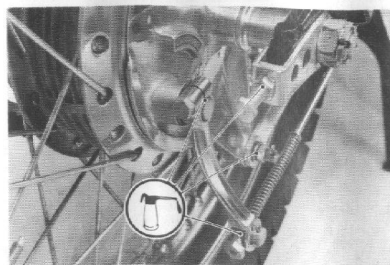
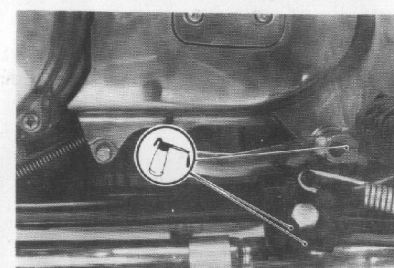
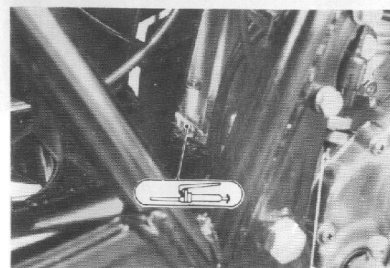
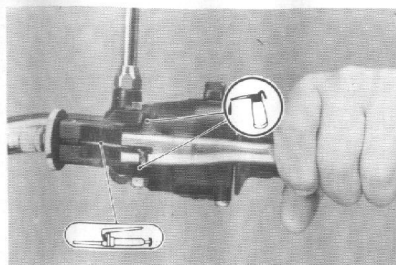
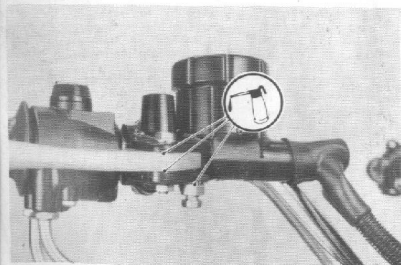
- Never clean out the fuel tank or tap when the engine is still warm.
- Wipe any fuel off the engine before starting it.

Lubrication

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

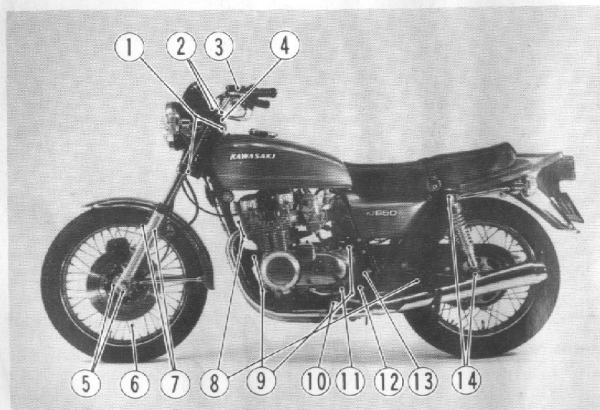
Using **SAE 30** motor oil, lubricate the points indicated whenever they are dry, after riding through rain, or after washing the motorcycle.

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

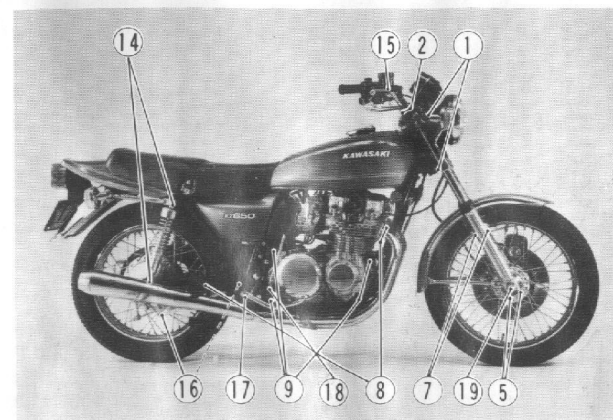


Bolt and Nut Tightening

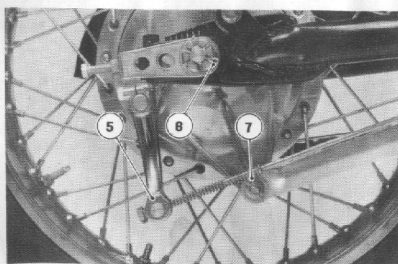
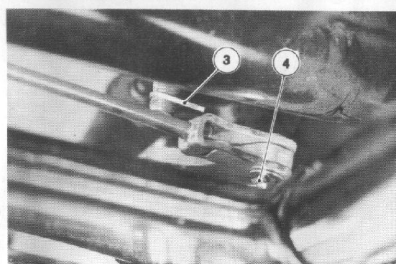
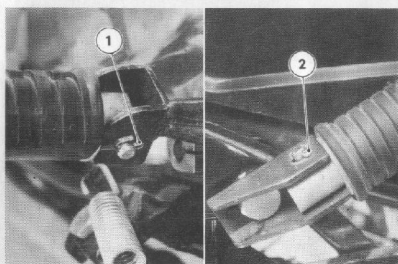
Every day before riding, check without fail the tightness of the bolts and nuts listed here. Also, check to see that each cotter pin is in place and in good condition.



1. Stem Clamp Bolt
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. Front Brake Lever Holder Bolt
16. Torque Link Nuts
17. Rear Brake Pedal Nut
18. Kick Pedal Bolt
19. 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 (Link Pin)
6. Cotter Pin (Axle Nut)
7. 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 a 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. 69, 94).
- 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 screw at the bottom of each carburetor. (If left in for a long time, the gasoline will sour.)
- Remove the empty fuel tank, pour about ½ 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 SAE 30 oil into each cylinder. Kick the engine over slowly a few times to coat the cylinder walls with oil, and replace the 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	2.00 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. 46)
- Check all the points listed under Daily Safety Checks. (Pg. 40)
- Lubricate the chain and other points listed in the Lubrication Section. (Pg. 69, 94)

TROUBLESHOOTING GUIDE

Engine doesn't start

- ★No gasoline in tank
- ★Clutch lever not pulled
- ★Throttle opened with choke on (cold)
- ★Gasoline not reaching carburetors
 - ☆Fuel tap lever position incorrect
 - ☆Fuel tap obstructed or defective
- ★Flooded
 - ☆If the engine is flooded, kick it over with the throttle fully open to let more air in
- ★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 vent 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

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