



Z1100-A2

KAWASAKI
HEAVY INDUSTRIES, LTD.

MOTORCYCLE DIVISION

Part No. 99922-1150-01

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Z1100

Motorcycle Owner's Manual

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SPECIFICATIONS

PERFORMANCE

Maximum Horsepower	100 HP @8,000 rpm (r/min)
Maximum Torque	Ⓒ 97 HP @8,000 rpm (r/min) 9.8 kg-m (70.9 ft-lbs) @6,500 rpm (r/min) Ⓒ 9.3 kg-m (67.3 ft-lbs) @6,500 rpm (r/min)
Minimum Turning Radius	2.6 m (102.4 in)
Braking Distance	12.5 m from 50 kph (41 ft from 31 mph)

DIMENSIONS

Overall Length	2,290 mm (90.2 in) Ⓐ Ⓔ 2,310 mm (90.9 in)
Overall Width	890 mm (35.0 in)
Overall Height	1,150 mm (45.3 in)
Wheelbase	1,545 mm (60.8 in)
Road Clearance	125 mm (4.9 in)
Dry Weight	246 kg (542 lbs)

ENGINE

Type	DOHC, 4-cylinder, 4-stroke, air-cooled
Displacement	1,089 cc (1.089 ℓ, 66.5 cu in)
Bore x stroke	72.5 x 66.0 mm (2.85 x 2.60 in)
Compression Ratio	8.9
Starting System	Electric Starter
Cylinder Numbering Method	Left to right, 1-2-3-4
Firing Order	1-2-4-3
Carburetors	MIKUNI BS34 x 4

Ignition System
Ignition Timing
(Mechanically advanced)
Spark Plugs

Battery and coil (Transistorized ignition)
10° BTDC @1,000 rpm (r/min)
40° BTDC @3,400 rpm (r/min)
NGK B8ES or ND W24ES-U
Ⓔ NGK BR8ES or ND W24ESR-U
Forced lubrication (wet sump)
SE class SAE 10W40, 10W50, 20W40, or 20W50
3.7 ℓ (3.9 US qt)

TRANSMISSION

Transmission Type
Clutch Type
Driving System
Primary Reduction Ratio
Final Reduction Ratio
Overall Drive Ratio
Gear Ratio: 1st
2nd
3rd
4th
5th
Final Gear Case Oil
Final Gear Case Oil Capacity

5-speed, constant mesh, return shift
Wet, multi disc
Shaft drive
1.732 (97./56)
2.454 (15/22 x 36/10)
4.421 (Top gear)
2.642 (37/14)
1.833 (33/18)
1.428 (30/21)
1.174 (27/23)
1.040 (26/25) *1922.93 rpm*
API GL-5 SAE 90 [above 5°C (41°F)]
SAE 80 [below 5°C (41°F)]
0.25 ℓ (0.26 US qt)

4 SPECIFICATIONS

SPECIFICATIONS 5

FRAME

Castor	29°
Trail	125 mm (4.9 in)
Tire Size: Front	3.50V-19 4PR
Rear	130/90V-16 4PR
Fuel Tank Capacity	21.4 ℓ (5.7 US gal)

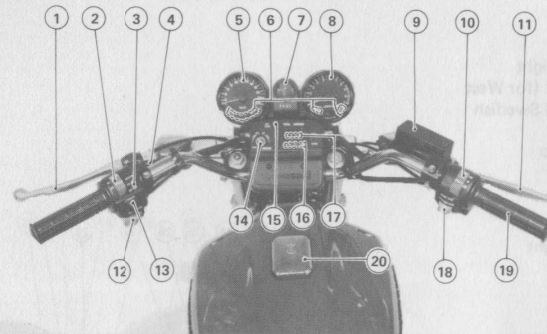
ELECTRICAL EQUIPMENT

Battery	12V 18AH
Headlight	12V 60/55W
Tail/Brake Light	12V 8/21W x 2 Ⓐ Ⓔ 12V 5/21W x 2
Turn Signal Lights	12V 23W Ⓐ Ⓔ 12V 21W

Ⓒ : West German, Swiss, and Swedish models
Ⓔ : European model
Ⓐ : Australian model

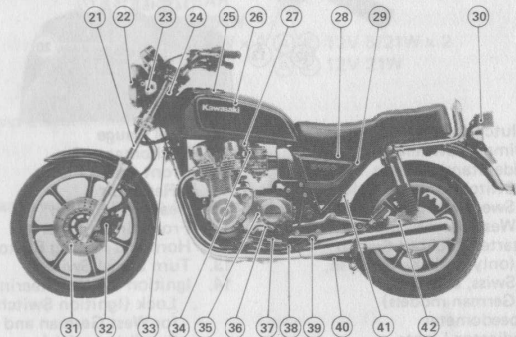
Specifications subject to change without notice, and may not apply to every country.

LOCATION OF PARTS

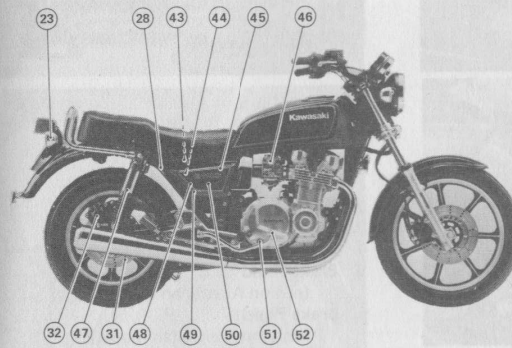


- | | | |
|--|--|--------------------------------|
| 1. Clutch Lever | 7. Fuel Gauge | 15. Reset Button |
| 2. Dimmer Switch | 8. Tachometer | 16. Odometer |
| 3. Side Stand Release Switch (only on U.K., Swedish, Swiss, and West German model) | 9. Front Brake Fluid Reservoir | 17. Trip Meter |
| 4. Starter Lockout Switch (only on U.K., Swedish, Swiss, and West German models) | 10. Headlight Switch | 18. Engine Stop/Starter Switch |
| 5. Speedometer | 11. Front Brake Lever | 19. Throttle Grip |
| 6. Indicator Lights | 12. Horn and Passing Button | 20. Fuel Tank Cap |
| | 13. Turn Signal Switch | |
| | 14. Ignition Switch/Steering Lock (Ignition Switch for West German and Swedish models) | |

21. Front Fork
22. Headlight
23. Turn Signal Light
24. Steering Lock (for West German and Swedish models)
25. Fuel Tank Cap
26. Fuel Tank
27. Fuel Tap
28. Helmet Hook
29. Seat Lock
30. Tail/Brake Light
31. Disc
32. Caliper
33. Horns
34. Choke Knob
35. Clutch Release
36. Shift Pedal
37. Side Stand Switch (for U.K, Swedish, Swiss, and West German models)
38. Side Stand
39. Center Stand Lock
40. Center Stand
41. Anti-Theft Cable Lock Plug
42. Final Gear Case



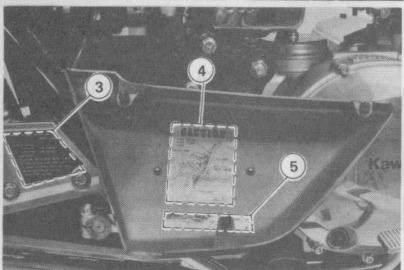
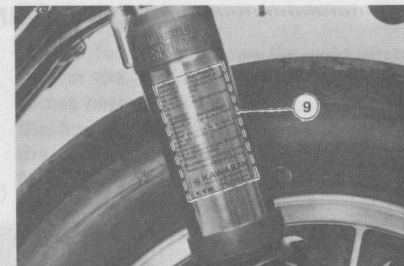
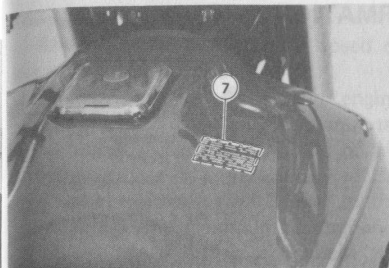
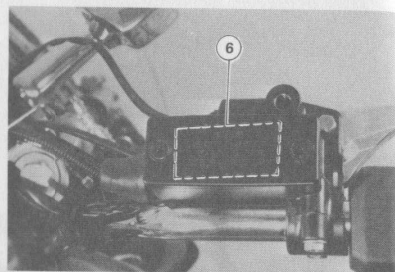
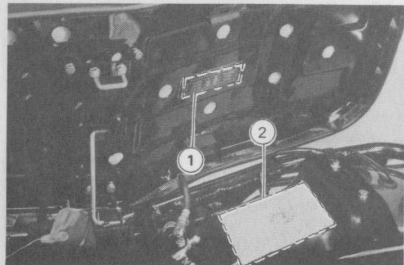
8 LOCATION OF PARTS



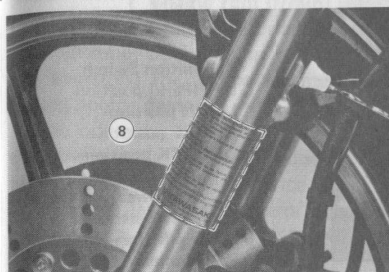
43. Tool Kit
44. Fuses
45. Air Cleaner Element
46. Carburetors
47. Rear Shock Absorber
48. Rear Brake Fluid Reservoir
49. Rear Brake Light Switch
50. Battery
51. Oil Level Gauge
52. Rear Brake Pedal

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LOCATION OF CAUTION LABELS



1. Tire and Load Data (not on European model)
2. Daily Safety Checks
3. Engine Oil and Oil Filter
4. Battery Vent Hose
5. Brake Fluid (not on Australian model)
6. Brake Fluid (only on Australian model)

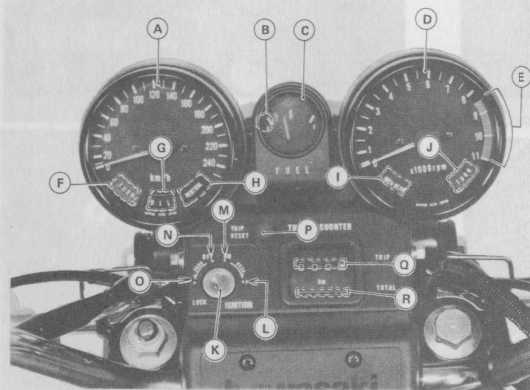


7. Side Stand Warning (only on U.K, West German, Swedish, and Swiss models)
8. Air Suspension (Front Fork)
9. Air Suspension (Rear Shock Absorber)

10 LOCATION OF CAUTION LABELS

GENERAL INFORMATION

Meter Instruments



- A. Speedometer
- B. E(Empty) position
- C. Fuel Gauge
- D. Tachometer
- E. Red Zone
- F. Left Turn Signal Indicator Light
- G. Oil Pressure Warning Light
- H. Neutral Indicator Light
- I. High Beam Indicator Light
- J. Right Turn Signal Indicator Light
- K. Ignition Switch
- L. P(Park) position
- M. ON position
- N. OFF position
- O. LOCK position (not on West German and Swedish models)
- P. Reset Button
- Q. Trip Meter
- R. Odometer

Speedometer and Tachometer

The speedometer shows the speed of the vehicle.

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

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

The odometer shows the total distance that the vehicle has been ridden. The trip meter shows the distance traveled, since it was last reset to zero. The trip meter can be reset to zero by pushing the reset button.

Fuel Gauge

The fuel gauge shows the amount of fuel in the fuel tank. When the needle comes near the E (empty) position, turn the fuel tap lever to RES, and refuel at the earliest opportunity.

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

Indicator Lights

NEUTRAL: When the gears are in neutral, the neutral indicator light is lit.

HIGH BEAM: When the headlight is on high beam, the high beam indicator light is lit.

TURN: When the turn signal switch is turned to left or right, one of the turn signal indicator lights flashes on and off.

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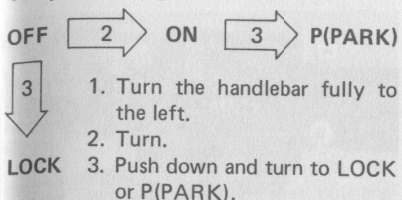
OIL: The oil pressure warning light goes on whenever the oil pressure is dangerously low or the ignition switch is in the ON position with the engine not running, and goes off when the engine oil pressure is high enough. Refer to the Maintenance and Adjustment chapter for more detailed engine oil information.

Ignition Switch/Steering Lock

This is a key-operated switch with three positions for West German and Swedish models, and four positions for the others. The key can be removed from the switch when it is in the OFF, LOCK (not on West German and Swedish models), or P (PARK) position.

Note: If you leave the PARK position on for a long time (one hour), the battery may become totally discharged.

To operate the ignition switch:



Key

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

Blank keys are available at your Kawasaki Dealers. Ask your Dealer to make any additional spare keys you may need, using your original key as a master.

OFF	Engine off. All electrical circuits off.
ON	Engine on. All electrical equipment can be used.
LOCK	Steering locked. Engine off. All electrical circuits off.
P (PARK)	Steering locked. Engine off. Tail lights on. All other electrical circuits cut off.

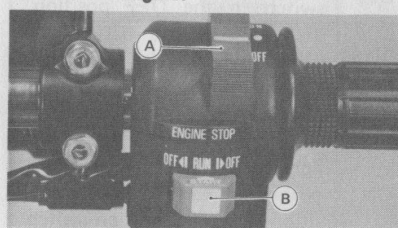
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Right Handlebar Switches Engine Stop/Starter Switch

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

To start the engine, push the engine stop/starter switch with the clutch lever pulled in.

CAUTION Refer to the Starting the Engine section of the "How to Ride the Motorcycle" chapter to start the engine.



A. Headlight Switch
B. Engine Stop/Starter Switch

If some emergency requires stopping the engine, operate the engine stop/starter switch to either of the OFF positions.

Note: Although the engine stop/starter switch stops the engine, it does not turn off all the electrical circuits. Ordinarily, the ignition switch should be used to stop the engine.

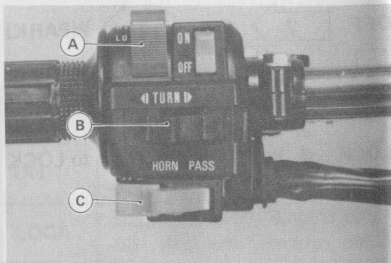
Headlight Switch

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

Left Handlebar Switches

Dimmer Switch

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



A. Dimmer Switch
B. Turn Signal Switch
C. Horn and Passing Button

Turn Signal Switch

When the turn signal switch is turned to L (left) or R (right), the turn signals flash on and off. The turn signal switch is automatically canceled after it has first been on for 4 seconds, and then the motorcycle has traveled an additional 50 m (164 ft).

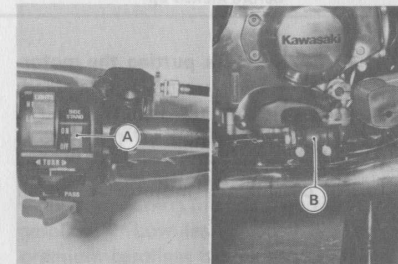
Horn and Passing Button

By pushing the horn and passing button to HORN, the horn sounds.

By pushing the horn and passing button to PASS, the headlight high beam (passing beam) comes on to signal the driver of the vehicle ahead that you are about to pass him. The passing light shuts off as soon as the switch is released.

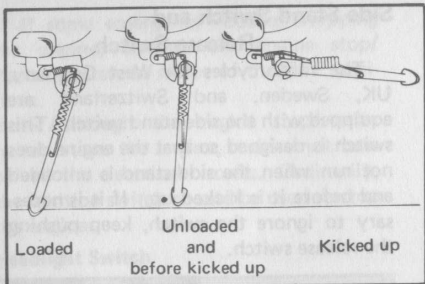
Side Stand Switch and Release Switch

The motorcycles for West Germany, UK, Sweden, and Switzerland are equipped with the side stand switch. This switch is designed so that the engine does not run when the side stand is unloaded and before it is kicked up. If it is necessary to ignore the switch, keep pushing the release switch.



A. Release Switch B. Side Stand Switch

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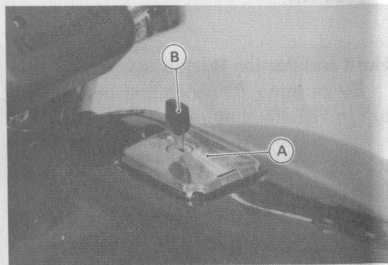


WARNING Before putting the motorcycle up on its side stand, make sure that the side stand is placed in the full forward position. If this is done carelessly, the motorcycle may move forward, causing the motorcycle to fall over.

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.

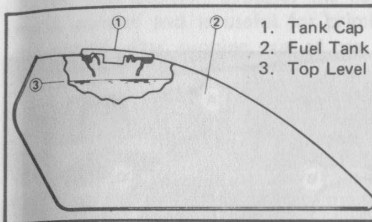
The fuel tank cap is locked when pushed back into place.



A. Fuel Tank Cap B. Ignition Switch Key

Fuel Tank

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



WARNING Gasoline is extremely flammable and can be explosive under certain conditions. Turn

the ignition switch off. Do not smoke. Make sure the area is well ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.

Never fill the tank completely to the top. As the fuel expands in a warm tank, it may overflow from the vents in the tank cap. After refueling, make sure the tank cap is closed securely.

Fuel Requirements:

Lead Content

Your Kawasaki engine is designed to use unleaded gasoline, which offers extended spark plug life compared to leaded gasolines. Low lead, leaded regular, or premium gasolines can be used with some reduction in spark plug life.

Octane Rating

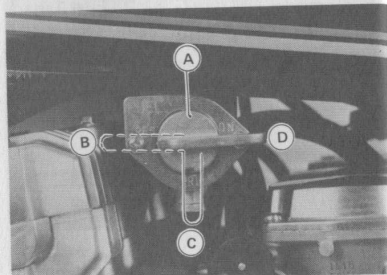
The octane rating of a gasoline is a measure of its resistance to detonation or "knocking". Use a gasoline with an octane rating equal to or higher than that shown in the table below.

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

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

Fuel Tap

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



A. Fuel Tap
B. RES position
C. PRI position
D. ON position

The fuel tap has three positions: ON, RES (reserve), and PRI (prime). If the fuel runs out with the tap in the ON position, turn the tap to PRI, leave it for a few seconds, and then turn it to RES. The last 4.9 l (1.3 US gal) of fuel can be used by turning the fuel tap to RES.

The PRI position bypasses the automatic control and is useful for priming the engine after running out of gas, or for completely draining the tank.

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

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

To start a cold engine after the motorcycle has been stored a long time, first turn the tap to PRI, leave it for a moment, and return it to ON.

WARNING Practice operating the fuel tap with the motorcycle stopped. To prevent an accident you should be able to operate the fuel tap while riding without taking your eyes off the road.

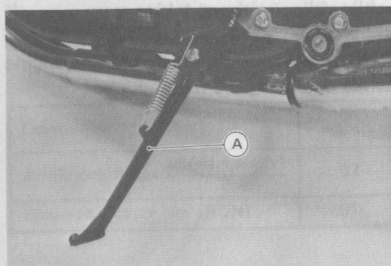
Be careful not to touch the hot engine while operating the fuel tap.

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Stands

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



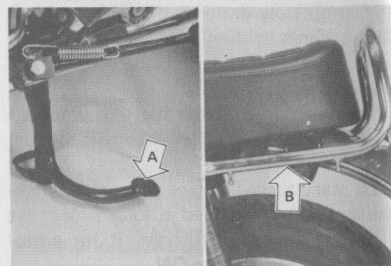
A. Side Stand

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

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

WARNING Forgetting and leaving the side stand down and riding away 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 as a handhold. Don't pull up on the seat to lift it as this will damage the seat.



A. Step down.
B. Lift up.

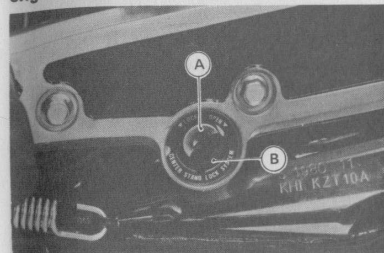
Center Stand Lock

This motorcycle has a center stand lock.

To lock the center stand:

1. Set the motorcycle up on its center stand.
2. Insert the ignition switch key.
3. Turn the key to the left.
4. Pull the key out.

WARNING Unlock the center stand lock before starting the engine to avoid an accident.

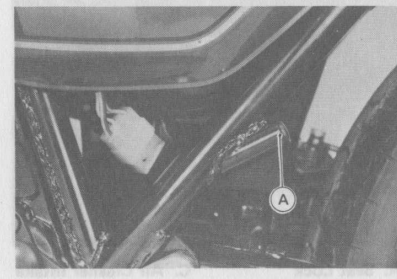


A. Center Stand Lock
B. Ignition Switch Key

Anti-Theft Cable Lock

There is the opening near the left side cover to install the anti-theft cable lock, and the anti-theft cable lock is available as a Kawasaki Accessory Part.

CAUTION Do not remove the plug when the anti-theft cable lock is not installed.

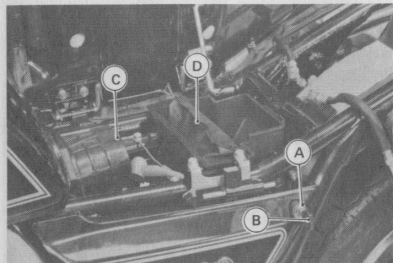


A. Plug

Seat Lock

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

The seat is locked when pushed back into place.



A. Seat Lock
B. Ignition Switch Key
C. Air Cleaner Intake
D. Tool Kit

Tool Kit

The minor adjustments and replacement of parts explained in this manual can be performed with the tool kit.

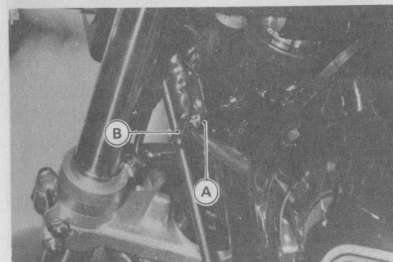
Air Cleaner Intake

The air cleaner intake allows air to enter the engine. Never allow anything to restrict the flow of air into the air cleaner. A restricted air cleaner will reduce performance and increase exhaust emissions.

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Steering Lock

The motorcycles for West Germany and Sweden are equipped with the steering lock at the left side of the head pipe. See the Ignition Switch and Steering Lock section for the steering lock information of the other models than the West German and Swedish models.



A. Steering Lock
B. Steering Lock (Ignition Switch) Key

To lock the steering:

1. Turn the handlebar to the right.
2. Insert the ignition switch key (Swedish model) or steering lock key (West German model).
3. Turn the key to the left.
4. Push the key in, and turn it to the right.
5. Pull the key out.

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

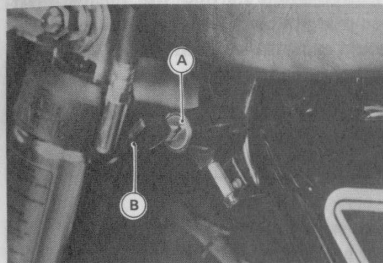
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Helmet Hooks

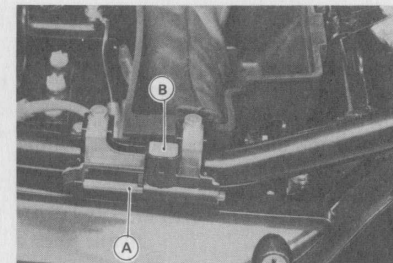
The helmets can be secured to the motorcycle using the helmet hooks.

One of the hooks can be unlocked by inserting the ignition switch key into it, and turning the key to the right.

The other hook can be opened by unlocking and lifting up the seat, and pushing the release button.



A. Helmet Hook
B. Ignition Switch Key



A. Helmet Hook
B. Release Button

WARNING Do not ride the motorcycle with helmets attached to the holders. The helmets could cause an accident by distracting the operator or interfering with normal vehicle operation.

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Electric-Accessory Leads

The electric power of the battery can be used through the electric-accessory leads regardless of ignition switch position. Observe and follow the notes listed below.

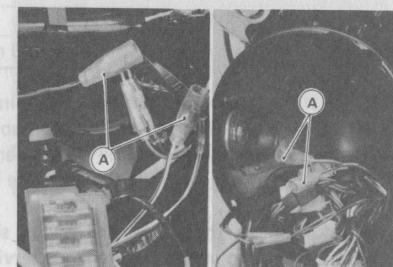
Electric-Accessory Leads

Location	Polarity	Lead Color
Under Seat	+	White/Black
	-	Yellow/Black
Inside Headlight Housing	+	White/Blue
	-	Yellow/Black
Maximum Current: 10A		

CAUTION Whenever you leave the motorcycle, stop using the electric accessories.

Be careful not to discharge the battery totally. For example, if the current of 20 amperes are continuously taken out with the engine stopped, even an originally-charged battery may become totally discharged in about 20 minutes.

WARNING Take care not to pinch any lead between the seat and the frame or between other parts to avoid a short circuit.



A. Electric-Accessory Leads

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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 speed during the break-in period.

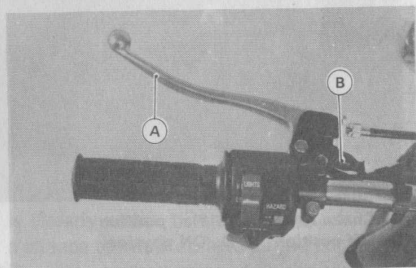
Distance traveled	Maximum engine speed
0 – 800 km (0 – 500 mi)	4,000 rpm (r/min)
800 – 1,600 km (500 – 1,000 mi)	6,000 rpm (r/min)

- Do not start moving or race the engine immediately after starting it, even if the engine is already warm. Run the engine for two or three minutes at idle speed to give the oil a chance to work up into all the engine parts.
- Do not race the engine while the gears are in neutral.

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

28 BREAKING IN

Note: This motorcycle is equipped with the starter lockout switch (except for West German, U.K., Swiss and Swedish models). This switch prevents the electric starter from operating when the clutch is engaged.



A. Clutch Lever B. Starter Lockout Switch

- Push the choke knob to the halfway position after the engine starts.

Note: With the ignition switch on, make certain the oil pressure warning light is lit before the engine starts, and goes off after the engine is started.

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

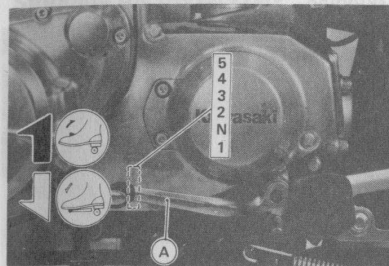
If the engine is flooded, push the engine stop/starter switch with the throttle fully open until the engine starts.

When the engine is warm enough to idle without using the choke, push the choke completely off.

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

Moving Off

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

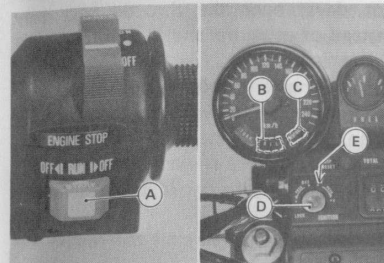


A. Shift Pedal

HOW TO RIDE THE MOTORCYCLE

Starting the Engine

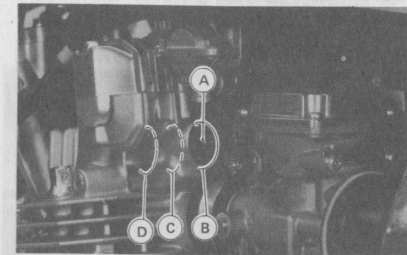
- Check that the engine stop/starter switch is in the "RUN" position.



A. Engine Stop/Starter Switch
B. Oil Pressure Warning Light
C. Neutral Indicator Light
D. Ignition Switch
E. ON position

- Turn the ignition switch on.
- Make certain the gears are in neutral.

- If the engine is cold, pull the choke knob to the on position, leaving the throttle completely closed.



A. Choke Knob
B. Off position
C. Half position
D. ON position

- Push the engine stop starter switch with the clutch lever pulled in until the engine starts. (Pulling in the clutch lever is not necessary for West German, U.K., Swiss and Swedish models.)

HOW TO RIDE THE MOTORCYCLE 29

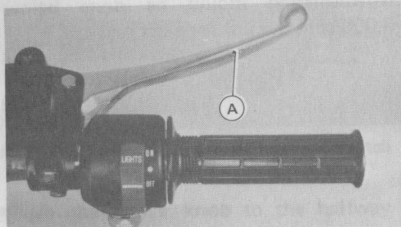
Shifting Gears

- Close the throttle while pulling in the clutch lever.
- Shift into the next higher or lower gear.
- Open the throttle part way, while releasing the clutch lever.

WARNING When shifting down to a lower gear, do not shift at such a high speed that the engine rpm (r/min) jumps excessively. Not only can this cause engine damage, but the rear wheel may skid and cause an accident. Downshifting should be done below 5,000 rpm (r/min) for each gear.

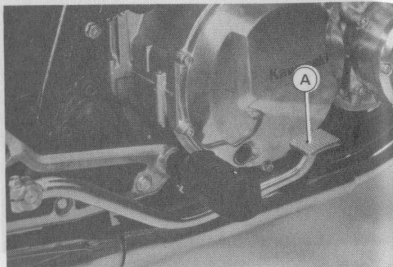
Braking

- 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



A. Front Brake Lever

- 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.



A. Rear Brake Pedal

Stopping the Engine

- Close the throttle completely.
- Shift the gears into neutral.
- Turn the ignition switch off.
- Lock the steering.

Stopping the Motorcycle in an Emergency

Your Kawasaki Motorcycle has been designed and manufactured to provide you optimum safety and convenience. However, in order to fully benefit from Kawasaki's safety engineering and craftsmanship, it is essential that you, the owner and operator, properly maintain your motorcycle and become thoroughly familiar with its operation. Improper maintenance and insufficient riding skills

- can create a dangerous situation known as throttle failure. Two of the most common causes of throttle failure are:
1. During removal of the air cleaner by the owner, dirt is allowed to enter and jam the carburetor.
 2. A novice may forget which direction the throttle rotates; then jerk the throttle wide open thinking he has shut it off; panic when the machine accelerates suddenly instead of slowing down; and "freeze", holding the throttle wide open.

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

Parking

- Shift the transmission into neutral and turn the ignition switch OFF.
- Support the motorcycle on a firm, level surface with the side or center stand.

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

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

WARNING Gasoline is extremely flammable and can be explosive under certain conditions.

- Lock the steering to help prevent theft.
- Note:** ○When stopping near traffic at night, you can leave the tail light on for greater visibility by turning the ignition switch to P (park).
○Do not leave the switch at P for too long or the battery will discharge.

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.

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

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

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

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

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

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

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

When riding in wet conditions or on loose roadway surfaces, the ability to maneuver will be reduced. All of your actions should be smooth under these conditions. Sudden acceleration, braking or turning may cause loss of control.

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

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

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

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

Daily Safety Checks

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

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

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

- Fuel Adequate supply in tank, no leaks.
- Engine oil..... Oil level between level lines.
- Tires..... Air Pressure

Front	Up to 210 kph (130 mph)	2.0 kg/cm ² (28 psi, 200 kPa)
	Over 210 kph (130 mph)	2.25 kg/cm ² (32 psi, 225 kPa)
Rear	Up to 97.5 kg (215 lbs) load	2.0 kg/cm ² (28 psi, 200 kPa)
	97.5 – 190 kg (215 – 419 lbs) load	2.5 kg/cm ² (36 psi, 250 kPa)
	Over 210 kph (130 mph)	2.9 kg/cm ² (41 psi, 290 kPa)

36 SAFE OPERATION

- Nuts, bolts, fasteners Check that steering and suspension components, axles, and all controls are properly tightened or fastened.
- Steering Action smooth but not loose from lock to lock. No binding of control cables.
- Brakes Brake pad wear: Not worn to stepped portion, lining thickness more than 1 mm (0.04 in) left.
No brake fluid leakage.
- Throttle Throttle grip play 2 – 3 mm (0.08 – 0.12 in).
- Clutch Clutch lever play 2 – 3 mm (0.08 – 0.12 in).
Clutch lever operates smoothly.
- Final gear case No oil leakage.
- Electrical equipment All lights and horn work.
- Engine stop switch Stops engine.
- Side and center stands..... Return to their fully up positions by spring tension.
Return springs not weak or not damaged.

Refer to "Daily Safety Checks" caution label attached to the rear fender.

SAFE OPERATION 37

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.

Fuel: 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 lines.

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.

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

MAINTENANCE AND ADJUSTMENT

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

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 cannot assume any responsibility for damage resulting from incorrect maintenance or improper adjustment done by the owner.

Periodic Maintenance Chart

Operation	Frequency	*Odometer Reading mi (km)								See Page
		Whichever comes first ↓ Every	500 (800)	3,000 (5,000)	6,000 (10,000)	9,000 (15,000)	12,000 (20,000)	15,000 (25,000)	18,000 (30,000)	
K Carburetor synchronization—check †		•	•	•	•	•	•	•	•	54
Idle speed—check †		•	•	•	•	•	•	•	•	54
Throttle grip play—check †		•	•	•	•	•	•	•	•	53
Spark plug—clean and gap †		•	•	•	•	•	•	•	•	50
K Valve clearance—check †		•	•	•	•	•	•	•	•	51
Air cleaner element—clean		•						•		51
Air cleaner element—replace	5 cleanings			•		•		•		51
K Timing advancer—lubricate				•		•		•		49
Battery electrolyte level—check †	month	•	•	•	•	•	•	•	•	73
Brake light switch—check †		•	•	•	•	•	•	•	•	60
Brake lining wear—check †			•	•	•	•	•	•	•	57

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MAINTENANCE AND ADJUSTMENT 41

Operation	Frequency	*Odometer Reading mi (km)								See Page
		Whichever comes first ↓ Every	500 (800)	3,000 (5,000)	6,000 (10,000)	9,000 (15,000)	12,000 (20,000)	15,000 (25,000)	18,000 (30,000)	
Brake fluid level—check †	month	•	•	•	•	•	•	•	•	58
K Brake fluid—change	year			•		•		•		59
Clutch—adjust		•	•	•	•	•	•	•	•	55
Steering play—check †		•	•	•	•	•	•	•	•	61
Front fork oil seal—clean			•	•	•	•	•	•	•	64
Nuts, bolts, fasteners—check †		•		•		•		•		88
K Fuel system—clean				•		•		•		81
Tire wear—check †			•	•	•	•	•	•	•	71
Engine oil—change	year	•	•	•	•	•	•	•	•	44
Oil filter—replace		•		•		•		•		44
General lubrication—perform			•	•	•	•	•	•	•	82
K Front fork oil—change				•		•		•		65
K Swing arm pivot—lubricate				•		•		•		73

Operation	Frequency	*Odometer Reading mi (km)								See Page
		Whichever comes first ↓ Every	500 (800)	3,000 (5,000)	6,000 (10,000)	9,000 (15,000)	12,000 (20,000)	15,000 (25,000)	18,000 (30,000)	
Final gear case oil level—check †		•		•		•		•		47
Final gear case oil—change		•						•		47
K Propeller shaft sliding joint—lubricate				•				•		73
K Wheel bearing—lubricate	2 years						•			72
K Steering stem bearing—lubricate	2 years						•			62
K Master cylinder cup and dust seal—replace	2 years									—
K Caliper piston seal and dust seal—replace	2 years									—
K Brake hose—replace	4 years									—
K Fuel hose—replace	4 years									—

K : Should be serviced by an authorized Kawasaki Dealer.

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

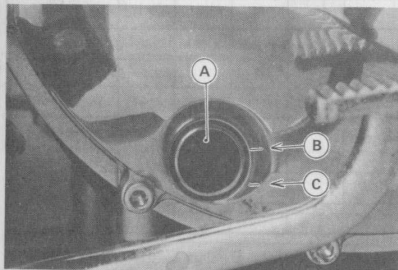
† : Replace, add, adjust or torque if necessary.

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MAINTENANCE AND ADJUSTMENT 43

Engine Oil

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



A. Oil Level Gauge
B. Upper Level Line
C. Lower Level Line

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

Oil Level Inspection

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

CAUTION Racing the engine before the oil reaches every part can cause 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. With the motorcycle held level, the oil level should come up between the lines next to the gauge.

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- With the motorcycle perpendicular to the ground, let the oil completely drain.
- If the oil filter is to be changed, remove the oil filter mounting bolt and drop out the oil filter.
- Replace the oil filter element with a new one.

Note: ○Check for O-rings damage. If necessary, replace them with new ones.

○When installing the oil filter, make sure the O-rings are in place.

●Apply a little engine oil to the O-ring on the filter mounting bolt, fit the filter cover on the bolt, and install the spring and flat washer.

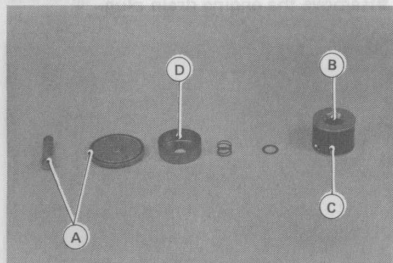
●Apply a little engine oil to the grommets on both sides of the element, and turn the filter to work the element into place. Be careful that the element grommets do not slip out of place.

●Install the element fence on the bolt.

●Install the oil filter, tightening its mounting bolt to the specified torque.

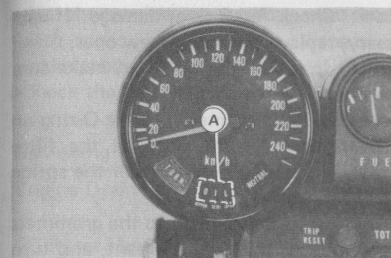
●After the oil has completely drained out, install the engine drain plug with its gasket. Proper torque for it is shown in the table.

Note: Replace the damaged gasket with a new one.



A. O-Ring
B. Grommet
C. Element
D. Element Fence

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A. Oil Pressure Warning Light

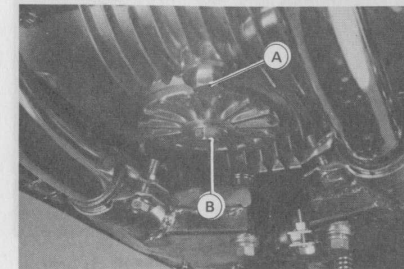
- If the oil level is too high, remove the excess oil, using a syringe or some other suitable device.
- If the oil level is too low, add the correct amount of oil through the oil filler opening. Use the same type and make of oil that is already in the engine.

CAUTION If the engine oil gets extremely low or if the oil pump or oil passages clog up or otherwise do not function properly, the oil pressure

warning light will light. If this light stays on when the engine speed is above 1,300 rpm (r/min), stop the engine immediately and find the cause.

Oil and/or Oil Filter Change

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



A. Drain Plug
B. Oil Filter Mounting Bolt

MAINTENANCE AND ADJUSTMENT 45

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

Tightening Torque

Engine Drain Plug:

3.0 kg-m (22 ft-lbs)

Oil Filter Mounting Bolt:

2.0 kg-m (14.5 ft-lbs)

Engine Oil

Grade: SE class

Viscosity: SAE 10W40, 10W50,
20W40, or 20W50

Capacity: 3.0 l (3.2 US qt)

[when filter is not removed]

3.7 l (3.9 US qt)

[when filter is removed]

Final Gear Case Oil

In order for the pinion and ring gears to function properly, check the oil level, and change the oil in accordance with the Periodic Maintenance Chart.

WARNING Motorcycle operation with insufficient, deteriorated, or contaminated oil causes accelerated wear and may result in seizure of the pinion and ring gears. Seizure can lock the rear wheel and skid the rear tire, with consequent loss of control.

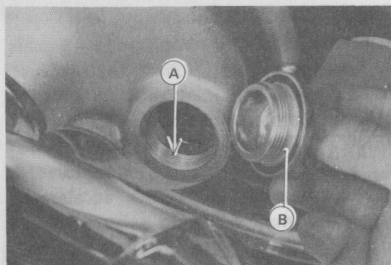
Oil Level Inspection

- Put the motorcycle on its center stand.
- Remove the filler cap.

CAUTION Be careful not to allow any dirt or foreign materials to enter the gear case.

- Check the oil level. If it is insufficient, add oil as necessary. The oil level should come to the bottom thread of the filler opening.

MAINTENANCE AND ADJUSTMENT 47



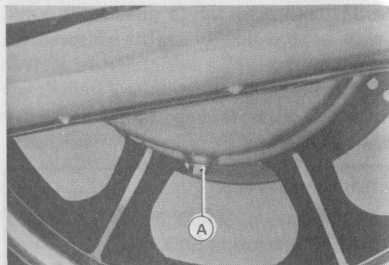
A. Bottom Thread B. Filler Cap

Note: Use the same type and make of oil that is already in the final gear case.

Oil Change

Note: Final gear case oil drains easily and picks up any sediment when the oil is warmed up by running the motorcycle.

- Put the motorcycle on its center stand.
- Place an oil pan beneath the gear case.
- Remove the filler cap and the drain plug.



A. Drain Plug

WARNING When draining or filling the gear case, be careful that no oil gets on the tire, rim, or brake disc. Clean off any oil that inadvertently gets on them with a high flash-point solvent.

- After the oil has completely drained out, install the drain plug and gasket. Replace the damaged gasket with a new one.

- Fill the gear case up to the bottom thread of the filler opening with the oil specified below.

Final Gear Case Oil

Oil Capacity	about 250 cc (8.5 US fl oz)
Oil Type	API "GL-5" Hypoid gear oil above 5°C (41°F) SAE 90 below 5°C (41°F) SAE 80

Note: "GL-5" indicates a quality and additive rating. "GL-6" rated hypoid gear oils can also be used.

- Install the filler cap.

Ignition System

This motorcycle has a transistorized ignition system which has no moving parts in the electrical circuit. Consequently, there are no parts except an automatic timing advancer to require periodic maintenance.

Automatic Timing Advancer:

Lubrication

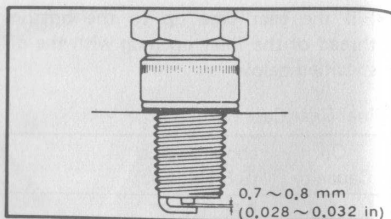
In accordance with the Periodic Maintenance Chart, the timing advancer should be lubricated by an authorized Kawasaki Dealer.

Spark Plugs

The standard spark plug is shown in the table. The spark plugs should be taken out periodically in accordance with the Periodic Maintenance Chart for cleaning, inspection, and resetting of the plug gap.

Maintenance

If any plug is oily or has carbon built up on it, have it cleaned, preferably in a sand-blasting device, and then clean off any abrasive particles. The plug may also be cleaned using a high flash-point solvent and a wire brush or other suitable tool. Measure the gap with a wire-type thickness gauge, and adjust the gap if incorrect by bending the outer electrode. If the spark plug electrodes are corroded or damaged, or if the insulator is cracked, replace the plug. Use the standard plug or its equivalent.



Spark Plug

Standard Plug	NGK B8ES or ND W24ES-U Ⓔ NGK BR8ES or ND W24ESR-U
Plug Gap	0.7 – 0.8 mm (0.028 – 0.032 in)
Tightening Torque	2.8 kg-m (20 ft-lbs)

Ⓔ : European model (except for Italian model)

Valve Clearance

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 adjusted in accordance with the Periodic Maintenance Chart.

Check and adjustment should be done by your authorized Kawasaki Dealer.

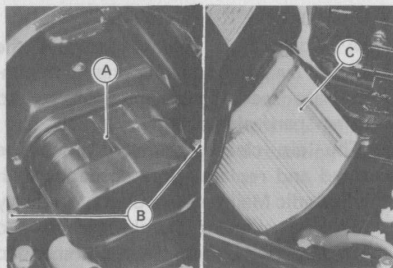
Air Cleaner

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

The air cleaner element must be cleaned and replaced in accordance with the Periodic Maintenance Chart. In dusty areas, the element should be cleaned more frequently than the recommended interval. After riding through rain or on muddy roads, the element should be cleaned immediately. The element should be replaced if it is damaged.

Element Removal

- Unlock the seat and open it.
- Remove the air cleaner cap screws.
- Remove the air cleaner cap, and pull out the element.



A. Air Cleaner Cap
B. Screws
C. Element

- Push a clean, lint-free towel into the air cleaner housing to keep dirt or other foreign material from entering.
- Inspect the element material and sponge gasket for damage. If any part of the element is damaged, the element must be replaced or it will allow dirt into the carburetors.

WARNING If dirt or dust is allowed to pass through into the carburetors, the throttle may become stuck, possibly causing an accident.

CAUTION If dirt gets through into the engine, excessive engine wear and possibly engine damage will occur.

Element Cleaning

- Clean the element in a bath of a high flash-point solvent.
- Dry the element with compressed air or by shaking it. Don't oil the element, or carburetion will be up set.

WARNING Clean the element in a well ventilated area, and take care that there are no sparks or flame anywhere near the working area; this includes any appliance with a pilot light. Do not use gasoline or a low flash-point solvent to clean the element. A fire or explosion could result.

52 MAINTENANCE AND ADJUSTMENT

Carburetors

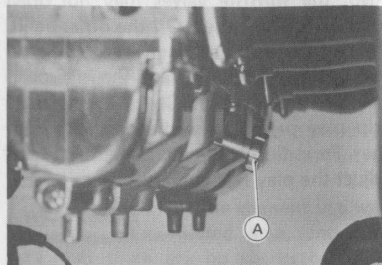
The carburetor adjustments, idle speed and synchronization, should be performed in accordance with the Periodic Maintenance Chart or whenever the idle speed is disturbed.

The following procedure covers the idle speed adjustment. Carburetor synchronization should be done only by an authorized Kawasaki Dealer.

Note: Poor carburetor synchronization will cause unstable idling, sluggish throttle response, and reduced engine power and performance.

Idle Speed Inspection and Adjustment

- Start the engine, and warm it up thoroughly.
- Adjust the idle speed to 950 – 1,050 rpm (r/min) by turning the idle adjusting screw.



A. Idle Adjusting Screw

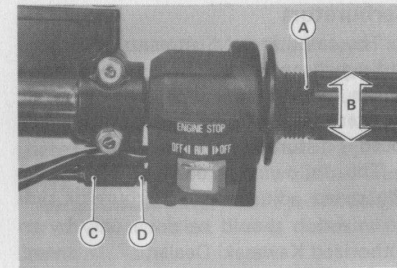
- Open and close the throttle a few times to make sure that the idle speed does not change. Readjust if necessary.

Throttle Grip

The throttle grip controls the throttle valves. If the throttle grip has excessive play due to either cable stretch or maladjustment, it will cause a delay in throttle response, especially at low engine speed. Also, the throttle valves may not open fully at full throttle. On the other hand, the throttle grip has no play, the throttle will be hard to control, and the idle speed will be hard erratic. Check the throttle grip play periodically in accordance with the Periodic Maintenance Chart, and adjust the play if necessary.

Inspection

- Check that there is 2 – 3 mm (0.08 – 0.12 in) throttle grip play when lightly turning the throttle grip back and forth.



A. Throttle Grip
B. 2 – 3 mm
(0.08 – 0.12 in)
C. Adjusting Nut
D. Locknut

- If there is improper play, adjust it.

Adjustment

- Loosen the locknut at the throttle grip, and turn the adjusting nut until the proper amount of throttle grip play is obtained. Tighten the locknut.

MAINTENANCE AND ADJUSTMENT 53

Clutch

Due to the friction plate wear and the clutch cable stretch over a long period of use, the clutch must be adjusted in accordance with the Periodic Maintenance Chart.

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

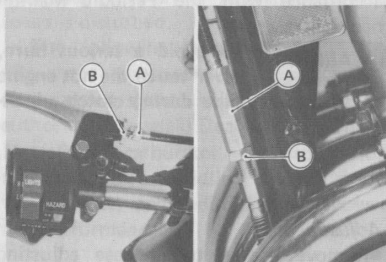
Adjustment

- Remove the clutch release adjusting cover.
- Loosen the locknuts, and turn in fully the clutch cable adjusters to give the cable plenty of play.
- Loosen the locknut, and turn the clutch release adjusting screw clockwise until it becomes hard to turn.

- With the engine idling, turn the handlebar to each side. If handlebar movement changes the idle speed, the throttle cable may be improperly adjusted or incorrectly routed, or it may be damaged. Be sure to correct any of these conditions before riding.

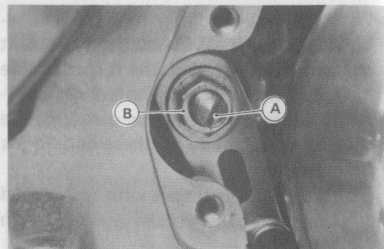
WARNING Operation with a damaged cable could result in an unsafe riding condition.

- Turn the release adjusting screw counter-clockwise ¼ turn from that point, and tighten the locknut.

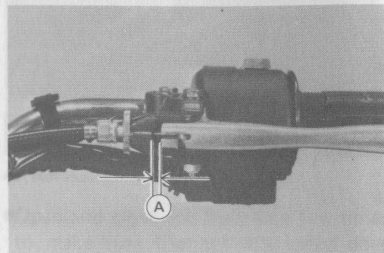


A. Adjuster B. Locknut

- Turn the clutch cable adjusters so that the clutch lever will have 2–3 mm (0.08–0.12 in) of play as shown in the figure.



A. Adjusting Screw B. Locknut



A. 2–3 mm (0.08–0.12 in)

Disc Brake Fluid:

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

Fluid Requirement

Recommended fluids are given in the table below. If none of the recommended brake fluids are available, use extra heavy-duty brake fluid only from a container marked D.O.T.3.

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

Recommended Disc Brake Fluid

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

Fluid Level Inspection

- The brake fluid level in the reservoir must be kept between the upper and lower level lines (reservoir held horizontal).
- Fill the reservoir to the upper level line.

WARNING Do not mix two brands of fluid. Change the brake fluid in the brake line completely if the brake fluid must be refilled but the type and brand of the brake fluid that already is in the reservoir are unidentified.

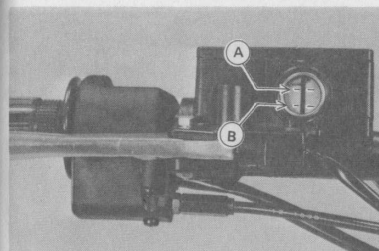
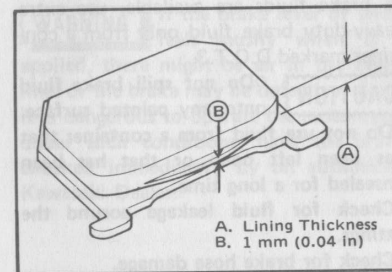
WARNING Be sure each end of the clutch outer cable is fully seated in its fitting, or it could slip into place later, creating enough cable play to prevent clutch disengagement, resulting in a hazardous riding condition.

- Tighten the locknuts, and install the removed parts.
- After the adjustment is made, start the engine and check that the clutch does not slip and that it releases properly.

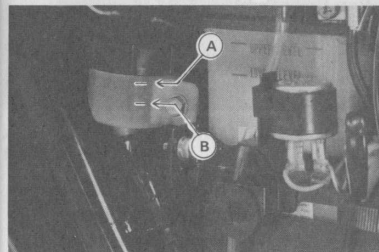
Brakes

Brake Wear Inspection

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



A. Upper Level B. Lower Level



A. Upper Level B. Lower Level

Fluid Change

Have the brake fluid changed by an authorized Kawasaki Dealer.

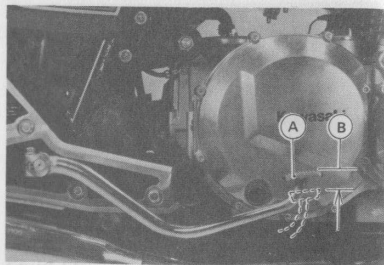
Front and Rear Brakes:

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

WARNING If the brake lever or pedal feels mushy when it is applied, there might be air in the brake lines or the brake may be defective. Since it is dangerous to operate the motorcycle under such conditions, have the brake checked immediately by an authorized Kawasaki Dealer.

Brake Light Switches

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



A. Rear Brake Pedal B. 15 mm (0.6 in)

Inspection

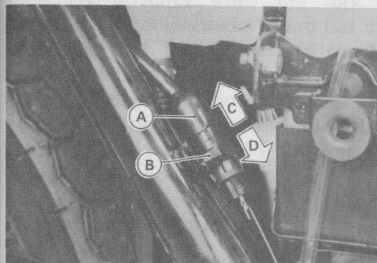
- Turn on the ignition switch.
- The brake light should go on when the front brake is applied.
- If it does not, ask your authorized Kawasaki Dealer to inspect the front brake light switch.
- Check the operation of the rear brake light switch by depressing the brake pedal. The brake light should go on after about 15 mm (0.6 in) of pedal travel.

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

Adjustment

- Adjust the rear brake light switch by moving the switch up or down. To change the switch position, turn the adjusting nut.

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



A. Rear Brake Light Switch C. Lights sooner
B. Adjusting Nut D. Lights later

Steering

Inspection

The steering should be checked in accordance with the Periodic Maintenance Chart.

- To check the steering adjustment, first place a stand or block under the engine so that the front wheel is raised off the ground.
- From the straightforward position of the handlebar, slowly push the handlebar to either side.
- If the handlebar begins to turn by the action of gravity and continues moving until the ridge on the stem base stops against the stop plate on the frame head pipe, the steering is not too tight.

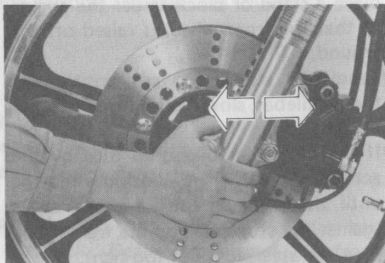
Note: The handlebar may catch halfway by means of the cable and wiring harness. In this case, the steering couldn't be considered to be too tight.

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- Squatting in front of the motorcycle, grasp the lower ends of the front fork at the axle, and push and pull the front fork end back and forth; if play is felt, the steering is too loose.

Lubrication

In accordance with the Periodic Maintenance Chart, the steering stem bearing should be lubricated by an authorized Kawasaki Dealer.



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

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MAINTENANCE AND ADJUSTMENT 61

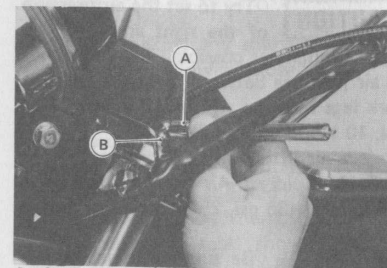
Front Fork

The front fork legs of this model contain compressed air for optimum performance. This type of front fork is especially effective when the fork is almost fully compressed. It also has the advantage that the air pressure can be varied within the usable range to suit various riding conditions. Lower air pressure is for comfortable riding, but it should be increased for high speed riding, or riding on bad roads.

Air Pressure Adjustment

- Put the motorcycle up on its center stand.
- Raise the front wheel off the ground by using a jack.
- Take off the air valve cap on the top of the front fork.
- Check the air pressure with the air pressure gauge. The standard air pressure is

0.6 kg/cm² (8.5 psi, 60 kPa), and the usable range of air pressure is 0.5 – 0.7 kg/cm² (7.1 – 10.0 psi, 50 – 70 kPa).



A. Air Pressure Gauge B. Air Valve

Note: ○ Check the air pressure when the front fork is cold (room temperature). ○ Do not use tire gauges for checking air pressure. They may not indicate the correct air pressure because of air leaks that occur when the gauge is applied to the valve.

MAINTENANCE AND ADJUSTMENT 63

●Inject air through the valve with a pump to raise and adjust the pressure.

Note:A normal tire pump can be used.

CAUTION ○Try to set the air pressure of the right and left fork legs as equally as possible. The difference in air pressure between the right and left fork legs must be within 0.1 kg/cm² (1.4 psi, 10 kPa).

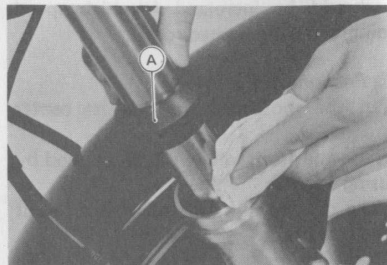
○Inject air little so that air pressure does not rise rapidly. Air pressure exceeding 2.5 kg/cm² (36 psi, 250 kPa) may damage the oil seal.

WARNING ○Be sure to adjust the air pressure within the usable range. Pressure too high or too low can produce a hazardous riding condition. ○Only air or nitrogen gas can be used. Never inject oxygen or any kind of explosive gas.

○Do not incinerate the front fork.

Cleaning

Dirt or sand that has worked its way past a dust seal will eventually damage the oil seal, causing oil leakage. In accordance with the Periodic Maintenance Chart, 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.



A. Dust Seal

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total load becomes, the higher the air pressure should be set.

Air Pressure Adjustment

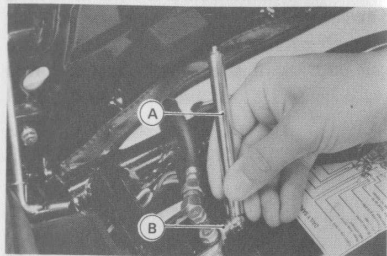
Air Pressure kg/cm ² (kPa, psi)	Setting	Load	Road
0.4 (40, 5.7)	Soft	Light	Good
↑↓	↑↓	↑↓	↑↓
1.5 (150, 21)	Hard	Heavy	Bad

To adjust the air pressure:

Note:Check and adjust the air pressure when the rear shock absorbers are cold (room temperature).

- Put the motorcycle up on its center stand to raise the rear wheel off the ground.
- Unlock the seat, and swing it open to take off the air valve cap under the seat.
- Check the air pressure with the air pressure gauge in the owner tools.

Note:Do not use tire gauges for checking air pressure. They may not indicate the correct air pressure because of air leaks that occur when the gauge is applied to the valve.



A. Air Pressure Gauge B. Air Valve

- To lower the air pressure, push the valve core in a twinkle. To raise the pressure, inject air through the valve with a tire pump. Change the air pressure within the range specified in the table above to suit various riding conditions.

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Fork Oil Change

Since the front fork oil deteriorates with use, have the oil in both tubes changed in accordance with the Periodic Maintenance Chart by your authorized Kawasaki Dealer.

Rear Shock Absorbers

The rear shock absorbers can be adjusted by changing the air pressure and damping force to suit various riding and loading conditions.

Before making any adjustments, however, read the following procedures:

Air Pressure

The air pressure in the rear shock absorbers can be adjusted for different road and loading conditions.

The following table shows an example of air pressure adjustment. To obtain the stable handling or suitable riding condition, adjust the air pressure for different road and loading conditions if necessary. For instance, lower air pressure is for comfortable riding for an average-built rider of 68 kg (150 lbs) with no accessories. Ordinarily, the heavier the

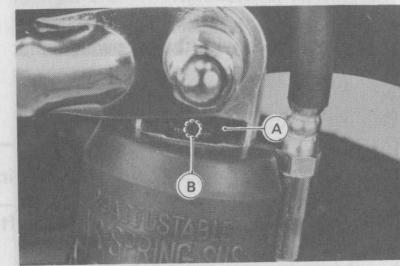
MAINTENANCE AND ADJUSTMENT 65

Damping Force

The damper adjuster on each rear shock absorber has 4 positions so that the damping force can be adjusted for different road and loading conditions. The numbers on the adjuster show the setting position of the damper.

CAUTION Inject air little by little so that air pressure does not rise rapidly. Air pressure exceeding 5.0 kg/cm² (500 kPa, 71 psi) may damage the oil seal.

WARNING ○Be sure to adjust the air pressure within the usable range. Pressure too-high or too low can produce a hazardous riding condition. ○Only air or nitrogen gas can be used. Never inject oxygen or any kind of explosive gas. ○Do not incinerate the rear shock absorbers.



A. Damper Adjuster B. Number

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The following table shows an example of damping force adjustment. To obtain the stable handling or suitable riding condition, adjust the damping force for different road and loading conditions if necessary. The damping force can be left soft for average riding. But it should be adjusted harder for high speed riding or riding with a passenger. If the damper setting feels too soft or too stiff adjust it in accordance with the following table:

Damper Adjuster

Adjuster Position	Damping Force	Setting	Load	Road	Speed
1	Stronger ↓	Soft ↕	Light ↕	Good ↕	Low ↕
2		Hard ↓	Heavy ↓	Bad ↓	High ↓
3					
4					

To adjust the damping force:

- Turn the adjusters to the desired position until you feel a click.
- Check to see that both adjusters are turned to the same relative position.

WARNING If both damper adjusters are not adjusted equally, handling may be impaired and a hazardous condition may result.

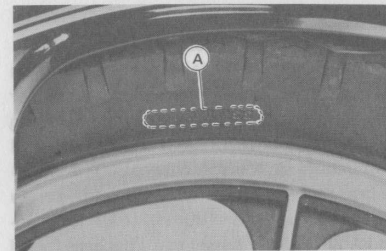
Wheels

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

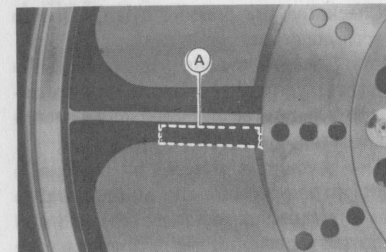
The tire and rim form a leakproof unit by making airtight contacts at the tire chafers and the rim flanges instead of using an inner tube.

WARNING The tires, rims, and air valves on this motorcycle are designed only for tubeless type wheels. The recommended standard tires, rims, and air valves must be used for replacement.

- Do not install tube-type tires on tubeless rims. The beads may not seat properly on the rim causing tire deflation.
- Do not install a tube inside a tubeless tire. Excessive heat build-up may damage the tube causing tire deflation.



A. TUBELESS Mark



A. TUBELESS Mark

Tires:

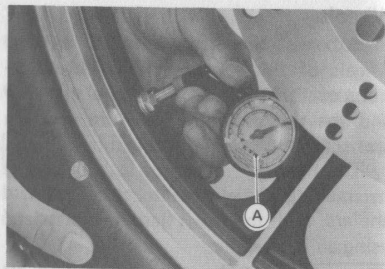
Payload and Tire Pressure

Failure to maintain proper inflation pressures or observe payload limits for your tires may adversely affect handling and performance of your motorcycle and can result in loss of control. The maximum recommended load in addition to vehicle weight is 190 kg (419 lbs), including rider, passenger, baggage, and accessories.

- Check the tire pressure often, using an accurate gauge.

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

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



A. Tire Pressure Gauge

Tire Air Pressure

Front	Up to 210 kph (130 mph)	2.0 kg/cm ² (28 psi, 200 kPa)
	Over 210 kph (130 mph)	2.25 kg/cm ² (32 psi, 225 kPa)
Rear	Up to 97.5 kg (215 lbs) load	2.0 kg/cm ² (28 psi, 200 kPa)
	97.5 – 190 kg (215 – 419 lbs) load	2.5 kg/cm ² (36 psi, 250 kPa)
	Over 210 kph (130 mph)	2.9 kg/cm ² (41 psi, 290 kPa)

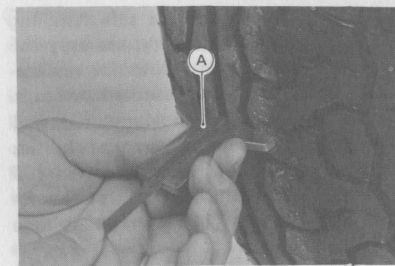
Tire Wear, Damage

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

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

Minimum Tread Depth

Front	—	1 mm (0.04 in)
Rear	Under 130 kph (80 mph)	2 mm (0.08 in)
	Over 130 kph (80 mph)	3 mm (0.12 in)



A. Tire Depth Gauge

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

Note: Have the wheel balance inspected whenever a new tire is installed.

WARNING To ensure safe handling and stability, use only the recommended standard tires for replacement, inflated to the standard pressure. Tires that have been punctured and repaired do not have the same capabilities as undamaged tires. Do not exceed 100 kph (60 mph) within 24 hours after repair, and 180 kph (110 mph) at any time after that.

Standard Tire

Front	3.50V-19 4PR DUNLOP F8 Tubeless
Rear	130/90V-16 4PR DUNLOP K427 Tubeless

Bearings:
Lubrication

The wheel bearings should be lubricated by an authorized Kawasaki Dealer in accordance with the Periodic Maintenance Chart.

Propeller Shaft Couplings

In order for the propeller shaft to function safely and wear slowly, the propeller shaft couplings should be lubricated in accordance with the Periodic Maintenance Chart by an authorized Kawasaki Dealer.

Swing Arm

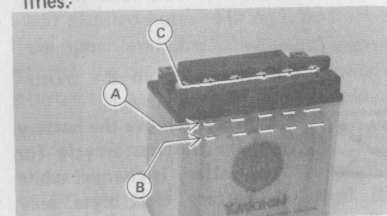
In order for the swing arm to function safely and wear slowly, it should be lubricated in accordance with the Periodic Maintenance Chart by an authorized Kawasaki Dealer.

Battery

Battery Electrolyte Level Inspection

The battery electrolyte level must be kept between the upper and lower level lines. Check the electrolyte level in each cell in accordance with the Periodic Maintenance Chart.

- Remove the battery from the motorcycle (See battery removal).
- Check that the electrolyte level in each cell is between the upper and lower level lines.

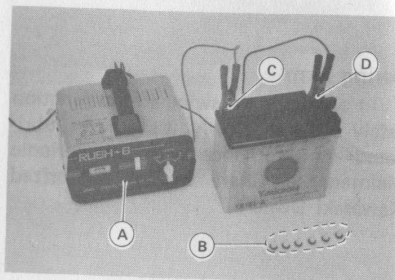


A. Upper Level
B. Lower Level
C. Filler Caps

- If the electrolyte level is low in any cell, fill with distilled water as follows.
- Remove the battery filler caps and fill with distilled water until the electrolyte level in each cell reaches the upper level line.

CAUTION Add only distilled water to the battery. Ordinary tap water is not a substitute for distilled water and will shorten the life of the battery.

- Before charging, check the electrolyte level in each cell. If the electrolyte level is low in any cell, fill to over the lower level line but not up to the upper level line since the level rises during charging.
- Remove the caps from all the cells, and connect the battery charger leads to the battery terminals (red to +, black to -).



A. Battery Charger
B. Filler Caps
C. (+) Terminal
D. (-) Terminal

Battery Charging

- Remove the battery from the motorcycle. (See Battery Removal.)

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

WARNING Because the battery gives off an explosive mixture of hydrogen and oxygen, keep any sparks or open flame away from the battery during charging. When using a battery charger, connect the battery to the charger before turning on the charger. This procedure prevents sparks at the battery terminals which could ignite any battery gases.

- Charge the battery at a rate that is 1/10th of the battery capacity. For example, the charging rate for a 10AH battery would be 1.0 ampere.

CAUTION Do not use a high rate battery charger, as is typically employed at automotive service stations, unless the charging rate can be reduced to the level required for motorcycle batteries. Charging the battery at a rate higher than specified may ruin the battery. Charging at a high rate causes

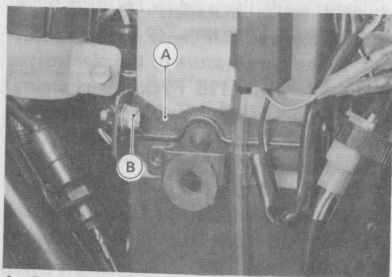
excess heat which can warp the plates and cause internal shorting. Higher-than-normal charging rates also cause the plates to shed active material. Deposits will accumulate, and can cause internal shorting. If the temperature of the electrolyte rises above 45°C (115°F) during charging, reduce the charging rate to lower the temperature, and increase charging time proportionately.

- After charging, check the electrolyte level in each cell. If the level has fallen, add distilled water to bring it back up to the upper level line.
- Install the caps on the cells.
- Install the battery.

Battery Removal

- Unlock the seat and remove it.
- Remove the right side cover.

- Remove the bolt, and take off the battery holder so that it does not hinder battery removal.

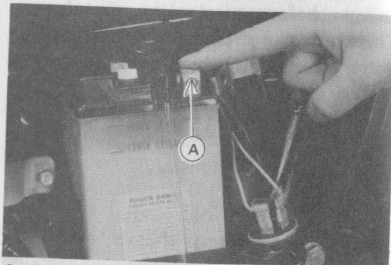


A. Battery Holder B. Bolt

- Disconnect the leads from the battery, first from the - terminal and then the + terminal.
- Take the battery out of the case.
- Clean the battery using a solution of baking soda and water. Be sure that the lead connections are clean.

Battery Installation

- Put the battery in the battery case, and route the battery vent hose as shown on the caution label.
- Put a light coat of grease on the terminals to prevent corrosion.

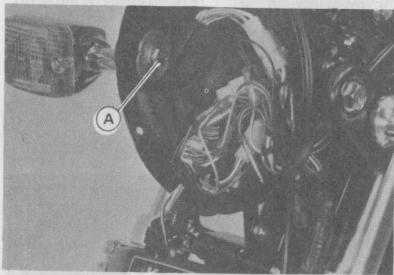


A. Grease

- Connect the capped lead to the + terminal, and then connect the black lead to the - terminal.
- Cover the + terminal with its protective cap.

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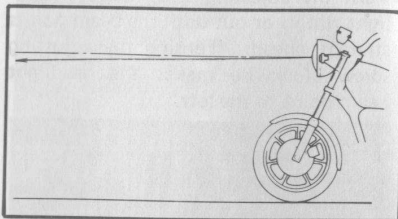
- Loosen the lower headlight bolt.
- Loosen the headlight housing mounting nuts, and adjust the headlight vertically.



A. Mounting Nut

- Tighten the headlight housing mounting nuts.
- Tighten the lower headlight bolt.
- Install the headlight unit, and tighten the mounting screws.

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



Bulbs

When replacing bulbs, be sure that the replacement is the proper bulb. See the Specifications chapter or Wiring Diagram for the bulb wattage.

Headlight Replacement

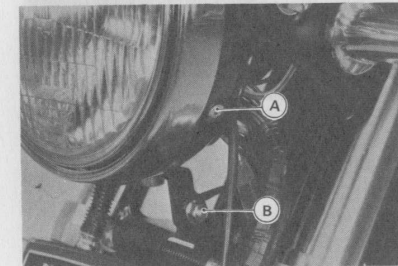
- Remove the headlight unit mounting screws, and pull the unit from the housing.
- Take out the headlight bulb socket and dust cover.
- Unhook the headlight bulb retaining spring, and take out the bulb.

CAUTION When handling the quartz-halogen bulb, never touch the glass portion with bare hands. Always use a clean cloth. Oil contamination from hands or dirty rags can reduce bulb life or cause the bulb to explode.

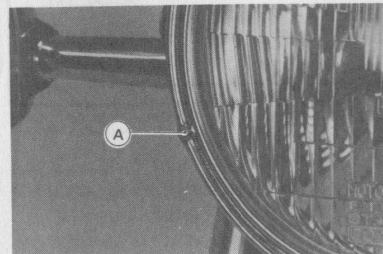
Vertical Adjustment

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

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

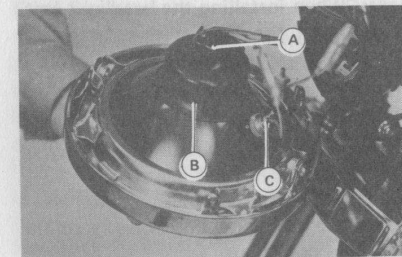


A. Mounting Screw B. Headlight Bolt

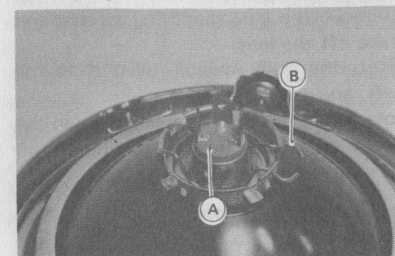


A. Adjusting Screw

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A. Headlight Bulb Socket B. Dust Cover
C. City Light Bulb Socket



A. Headlight Bulb B. Retaining Spring

Note: ○When installing the headlight unit, be sure that the TOP mark is facing up.
○After replacement is made, adjust the headlight beam.

City Light Replacement

- Remove the headlight unit referring to the Headlight Replacement.
- Pull out the city light bulb socket.
- Press the bulb inward, twist it to the left, and pull it out.

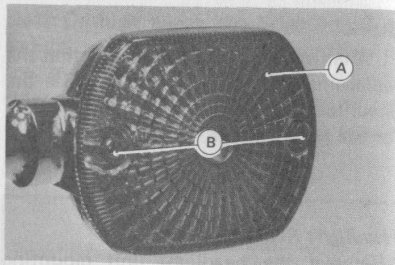
Turn Signal Light Replacement

- Remove the lens mounting screws, and take off the lens.
- Press the bulb inward, twist it to the left, and pull it out.

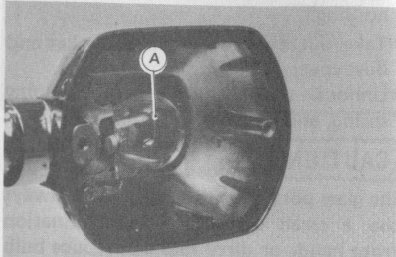
Note: When installing the lens, tighten the screws uniformly, but not too tightly, in order to avoid damaging the lens.

Tail/Brake Light Replacement

- Replace the bulb referring to the Turn Signal Light Replacement.



A. Lens B. Mounting Screws



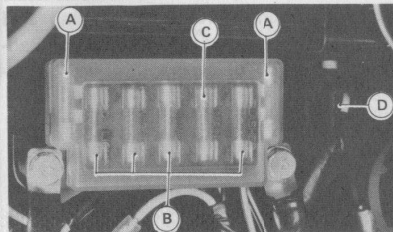
A. Bulb

Fuses

There are two fuse boxes inside the tool kit case, and one of them is designed for the accessories. If a fuse blows during operation, inspect the electrical system to determine the cause, and then replace the fuse.

WARNING ○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.



A. Spare Fuse B. 10A Fuses C. 30A Fuse D. 10A Fuses for Accessory

Fuel System

Accumulation of moisture or sediment in the fuel system will restrict the flow of fuel and cause carburetor malfunction. The system should be checked in accordance with the Periodic Maintenance Chart.

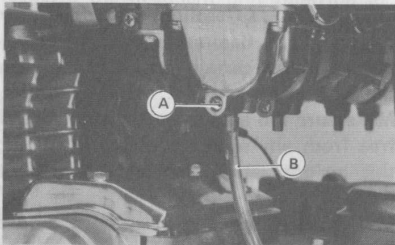
WARNING ○Gasoline is extremely flammable and can be explosive under certain conditions. Turn the ignition switch OFF. Do not smoke. Make sure the area is well ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.

○Make sure the engine is cold before working. Wipe any fuel off the engine before starting it.

Inspection

- Turn the fuel tap to PRI position.
- Connect a suitable hose to the fitting at the bottom of each carburetor float bowl.

- Run the lower ends of the hoses into a suitable container.
- Turn out each drain screw a few turns to drain the carburetors, and check to see if water or dirt has accumulated in the carburetors.



A. Drain Screw B. Suitable Hose

- Tighten the drain screws.
- If any water or dirt appeared during the above operation, have the fuel system checked by an authorized Kawasaki Dealer.

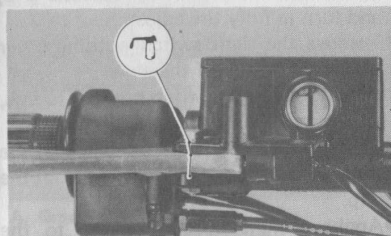
General Lubrication

Lubricate the points shown here, with either motor oil or regular grease, in accordance with the Periodic Maintenance Chart or whenever the vehicle has been operated under wet or rainy conditions, and especially after using a high-pressure spray washer.

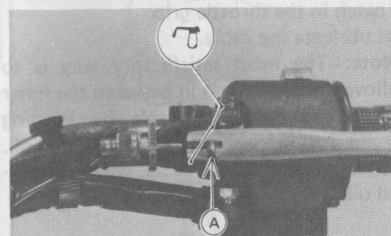
Before lubricating each part, clean off any rusty spots with rust remover and wipe off any grease, oil, dirt, or grime. **Note:** A few drops of oil are effective to keep bolts and nuts from rusting and sticking. This makes removal easier. Badly rusted nuts, bolts, etc., should be replaced with new ones.

Lubrication

Brake Lever:

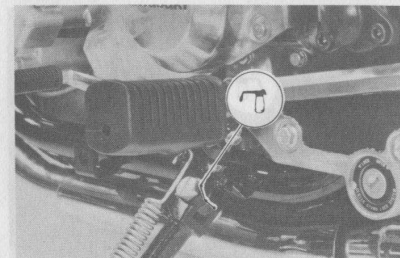


Clutch Lever:

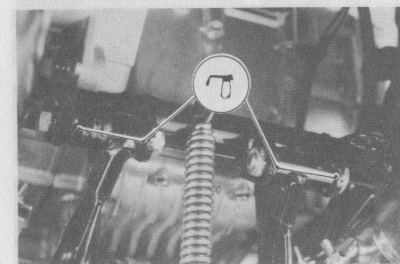


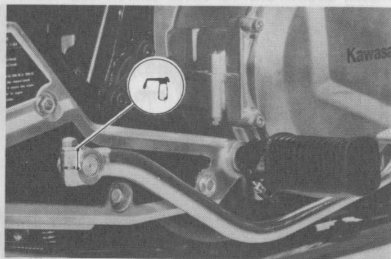
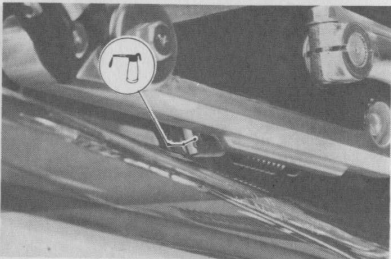
A. Grease

Side Stand:



Center Stand:



Brake Pedal:**Brake Rod Joint:****Throttle Cable:**

- Loosen the locknut at the throttle grip, and turn in fully the adjuster.
- Remove the right switch housing cover screws, and take off the cover.
- Remove the right switch housing screws, and open up the housing.
- Slip the cable tip from its catch in the throttle grip, and free the cable from the grip.
- Apply a light coat of grease to the exposed portion of the inner cable and catch in the throttle grip.
- Lubricate the cable.

Note: ○The most satisfactory way is to allow the oil to seep in between the inner cable and the outer cable by forming some sort of reservoir to hold the oil. After lubricating the cable, wipe off spilled oil.

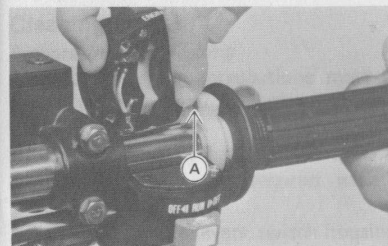
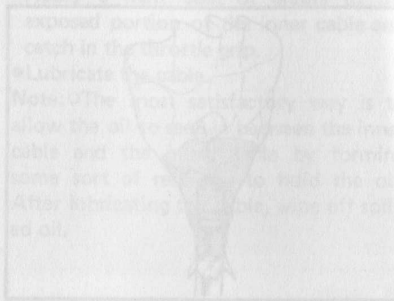
○Check that the throttle grip turns properly and that the inner cable slides smoothly.

Clutch Cable:

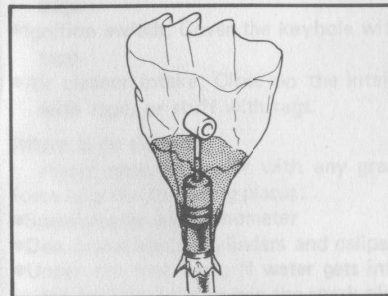
- Loosen the locknuts at the middle of the clutch cable and the clutch lever, and turn in fully the adjusters.
- Line up the slots in the clutch lever, locknut, and adjuster, and free the cable from the lever.
- Lubricate the cable, referring to throttle cable lubrication.

Note: ○The most satisfactory way is to allow the oil to seep in between the inner cable and the outer cable by forming some sort of reservoir to hold the oil. After lubricating the cable, wipe off spilled oil.

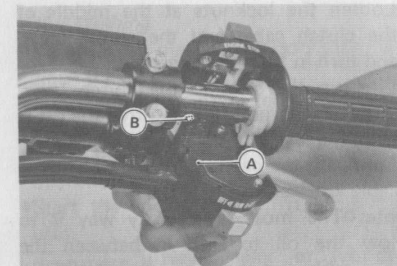
○After connecting the upper end of the clutch cable, adjust the clutch.



A. Grease



○Making sure that the projection in the switch housing fits into the hole in the handlebar, assemble the switch housing. The front housing screw is longer than the rear screw.



A. Projection

B. Hole

○After the switch housing assembly, check the throttle grip play and adjust it if necessary.

Cleaning*Preparation for Washing*

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

- Rear openings of each muffler; Cover with a plastic bag secured with a rubber band.
- Clutch and brake levers, switch housings on the handlebar; Cover with plastic bags.
- Ignition switch; Cover the keyhole with tape.
- Air cleaner intake; Close up the intake with tape, or stuff with rags.

Where to be Careful

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

- Speedometer and tachometer
- Disc brake master cylinders and calipers
- Under the fuel tank; If water gets into the ignition coils or into the spark plug

caps, 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.

After Washing

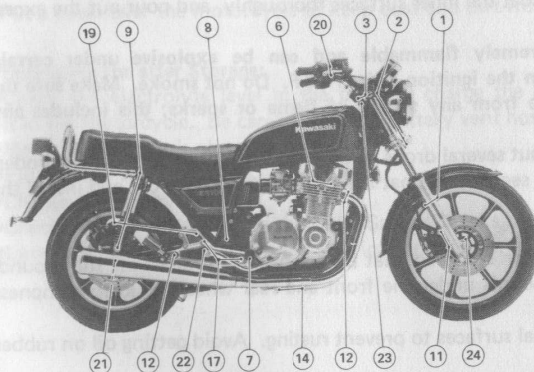
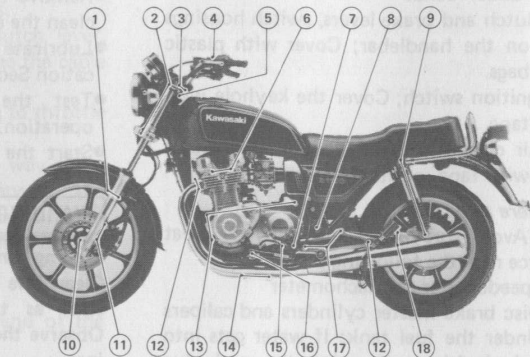
- Remove the plastic bags and tape, and clean the air cleaner intake.
- Lubricate the points listed in the Lubrication Section.
- Test the brakes before motorcycle operation.
- Start the engine and run it for 5 minutes.

WARNING Never wax or lubricate the brake discs. Loss of braking and an accident could result. Clean the discs with an oil-less solvent such as trichloroethylene or acetone. Observe the solvent manufacturer's warnings.

Bolt and Nut Tightening

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

1. Front Fender Mounting Bolts
2. Front Fork Clamp Bolts
3. Handlebar Clamp Bolts
4. Clutch Lever Holder Bolt
5. Steering Stem Head Bolt
6. Cylinder Head Nuts
7. Footpeg Mounting Nut
8. Swing Arm Pivot Shaft Locknut
9. Rear Shock Absorber Mounting Bolt and Nut
10. Front Axle Nut
11. Caliper Mounting Bolts
12. Muffler Mounting Bolts and Nuts



13. Engine Mounting Bolts
14. Exhaust and Connecting Pipe Clamps
15. Shift Pedal Bolt
16. Side Stand Bolt
17. Footpeg Mounting Bracket Bolts
18. Final Gear Case Mounting Nuts
19. Torque Link Nuts
20. Master Cylinder Clamp Bolts
21. Rear Axle Nut
22. Brake Pedal Bolt
23. Steering Stem Locknut
24. Front Axle Clamp Bolt

STORAGE

Preparation for Storage:

- Clean the entire vehicle thoroughly.
- Empty the fuel from the fuel tank, and empty the carburetors by unscrewing the drain screw at each float bowl. (If left in for a long time, the fuel will break down and could clog the carburetors.)
- Remove the empty fuel tank, pour about 250 cc (0.25 ℓ, ½ pint) of motor oil into the tank, roll the tank around to coat the inner surfaces thoroughly, and pour out the excess oil.

WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Turn the ignition switch OFF. Do not smoke. Make sure the area is well ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.

- Remove the spark plugs and put several drops of SE class SAE 30 oil into each cylinder. Push the starter button a few seconds to coat the cylinder walls with oil, and install the spark plugs.
- Reduce tire pressure by about 20%.
- Set the motorcycle on a box or stand so that both wheels are raised off the ground. (If this cannot be done, put boards under the front and rear wheels to keep dampness away from the tire rubber.)
- Spray oil on all unpainted metal surfaces to prevent rusting. Avoid getting oil on rubber parts or in the brakes.

- Lubricate all the cables.

- Remove the battery, and store it where it will not be exposed to direct sunlight, moisture, or freezing temperatures. During storage it should be given a slow charge (one ampere or less) about once a month. Keep the battery well charged during cold weather so that the electrolyte does not freeze and crack open the battery. The more discharged the battery becomes, the more easily it freezes.
- 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.

Preparation for 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.
- Make sure the spark plugs are tight.
- Fill the fuel tank with fuel.
- Change the engine oil.
- Check all the points listed in the Daily Safety Checks section.
- Lubricate the points listed in the Lubrication section.

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

Engine Does Not Start:

Starter Motor Not Rotating

- Engine stop switch off
- Clutch lever not pulled in
- Fuse blown
- Battery leads do not make good electrical contact with battery terminals
- Battery discharged

Engine Cranked Over But Does Not Start

- No fuel in tank
- Fuel line clogged
- Fuel broken down
- Choke is not used when engine is cold
- Engine flooded
- Spark plugs not in good contact

- Spark plugs fouled or wet

- Incorrect spark plug gap

- Incorrect ignition timing

- Incorrect valve clearance

- Battery discharged

Engine Stalls:

Just When Shifting Into 1st Gear

- Clutch does not properly disengage

While Riding

- Choke is used too long after moving off

- No fuel in tank

- Fuel tank air vent is obstructed

- Overheating

- Battery discharged



Z1100-A2

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