

Quick Reference Guide

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This quick reference guide will assist you in locating a desired topic or procedure.

- Bend the pages back to match the black tab of the desired chapter number with the black tab on the edge at each table of contents page.
- Refer to the sectional table of contents for the exact pages to locate the specific topic required.

LIST OF ABBREVIATIONS

A	ampere(s)	lb	pound(s)
ABDC	after bottom dead center	m	meter(s)
AC	alternating current	min	minute(s)
ATDC	after top dead center	N	newton(s)
BBDC	before bottom dead center	Pa	pascal(s)
BDC	bottom dead center	PS	horsepower
BTDC	before top dead center	psi	pound(s) per square inch
°C	degree(s) Celsius	r	revolution
DC	direct current	rpm	revolution(s) per minute
F	farad(s)	TDC	top dead center
°F	degree(s) Fahrenheit	TIR	total indicator reading
ft	foot, feet	V	volt(s)
g	gram(s)	W	watt(s)
h	hour(s)	Ω	ohm(s)
L	liter(s)		

Read OWNER'S MANUAL before operating.

Foreword

This manual is designed primarily for use by trained mechanics in a properly equipped shop. However, it contains enough detail and basic information to make it useful to the owner who desires to perform his own basic maintenance and repair work. A basic knowledge of mechanics, the proper use of tools, and workshop procedures must be understood in order to carry out maintenance and repair satisfactorily. Whenever the owner has insufficient experience or doubts his ability to do the work, all adjustments, maintenance, and repair should be carried out only by qualified mechanics.

In order to perform the work efficiently and to avoid costly mistakes, read the text, thoroughly familiarize yourself with the procedures before starting work, and then do the work carefully in a clean area. Whenever special tools or equipment are specified, do not use makeshift tools or equipment. Precision measurements can only be made if the proper instruments are used, and the use of substitute tools may adversely affect safe operation.

For the duration of the warranty period, we recommend that all repairs and scheduled maintenance be performed in accordance with this service manual. Any owner maintenance or repair procedure not performed in accordance with this manual may void the warranty.

To get the longest life out of your vehicle:

- Follow the Periodic Maintenance Chart in the Service Manual.
- Be alert for problems and non-scheduled maintenance.
- Use proper tools and genuine Kawasaki Motorcycle parts. Special tools, gauges, and testers that are necessary when servicing Kawasaki motorcycles are introduced by the Special Tool Catalog or Manual. Genuine parts provided as spare parts are listed in the Parts Catalog.
- Follow the procedures in this manual carefully. Don't take shortcuts.
- Remember to keep complete records of maintenance and repair with dates and any new parts installed.

How to Use This Manual

In preparing this manual, we divided the product into its major systems. These systems became the manual's chapters. All information for a particular system from adjustment through disassembly and inspection is located in a single chapter.

The Quick Reference Guide shows you all of the product's system and assists in locating their chapters. Each chapter in turn has its own comprehensive Table of Contents.

The Periodic Maintenance Chart is located in the Periodic Maintenance chapter. The chart gives a time schedule for required maintenance operations.

If you want spark plug information, for example, go to the Periodic Maintenance Chart first. The chart tells you how frequently to clean and gap the plug. Next, use the Quick Reference Guide to locate the Periodic Maintenance chapter. Then, use the Table of Contents on the first page of the chapter to find the Spark Plug section.

Whenever you see these WARNING and CAUTION symbols, heed their instructions! Always follow safe operating and maintenance practices.

WARNING

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

CAUTION

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

This manual contains four more symbols (in addition to WARNING and CAUTION) which will help you distinguish different types of information.

NOTE

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

● Indicates a procedural step or work to be done.

○ Indicates a procedural sub-step or how to do the work of the procedural step it follows. It also precedes the text of a NOTE.

★ Indicates a conditional step or what action to take based on the results of the test or inspection in the procedural step or sub-step it follows.

In most chapters an exploded view illustration of the system components follows the Table of Contents. In these illustrations you will find the instructions indicating which parts require specified tightening torque, oil, grease or a locking agent during assembly.

General Information

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1-2 GENERAL INFORMATION

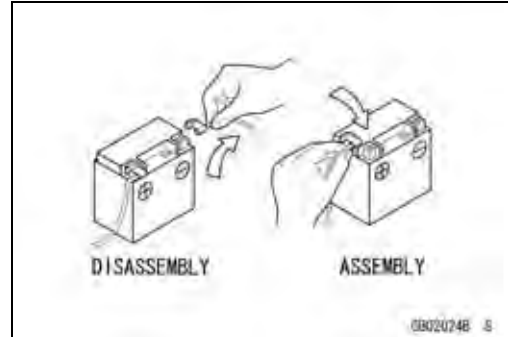
Before Servicing

Before starting to perform an inspection service or carry out a disassembly and reassembly operation on a motorcycle, read the precautions given below. To facilitate actual operations, notes, illustrations, photographs, cautions, and detailed descriptions have been included in each chapter wherever necessary. This section explains the items that require particular attention during the removal and reinstallation or disassembly and reassembly of general parts.

Especially note the following:

Battery Ground

Before completing any service on the motorcycle, disconnect the battery wires from the battery to prevent the engine from accidentally turning over. Disconnect the ground wire (-) first and then the positive (+). When completed with the service, first connect the positive (+) wire to the positive (+) terminal of the battery then the negative (-) wire to the negative terminal.



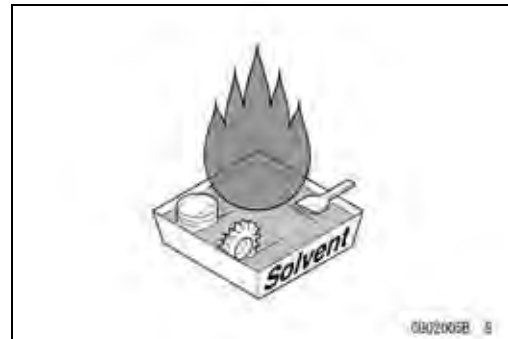
Edges of Parts

Lift large or heavy parts wearing gloves to prevent injury from possible sharp edges on the parts.



Solvent

Use a high flash point solvent when cleaning parts. High flash point solvent should be used according to directions of the solvent manufacturer.



Cleaning vehicle before disassembly

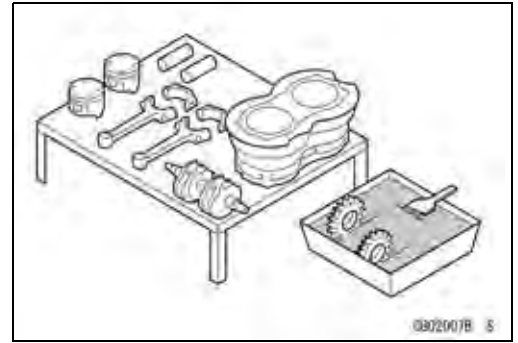
Clean the vehicle thoroughly before disassembly. Dirt or other foreign materials entering into sealed areas during vehicle disassembly can cause excessive wear and decrease performance of the vehicle.



Before Servicing

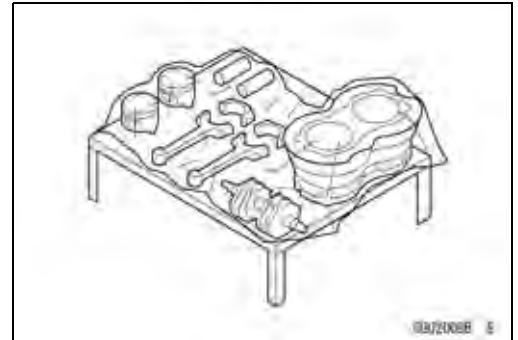
Arrangement and Cleaning of Removed Parts

Disassembled parts are easy to confuse. Arrange the parts according to the order the parts were disassembled and clean the parts in order prior to assembly.



Storage of Removed Parts

After all the parts including subassembly parts have been cleaned, store the parts in a clean area. Put a clean cloth or plastic sheet over the parts to protect from any foreign materials that may collect before re-assembly.



Inspection

Reuse of worn or damaged parts may lead to serious accident. Visually inspect removed parts for corrosion, discoloration, or other damage. Refer to the appropriate sections of this manual for service limits on individual parts. Replace the parts if any damage has been found or if the part is beyond its service limit.



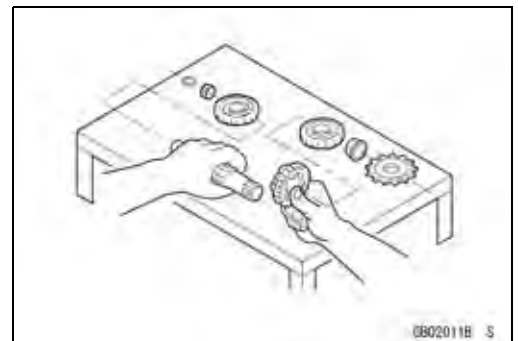
Replacement Parts

Replacement parts must be KAWASAKI genuine or recommended by KAWASAKI. Gaskets, O-rings, oil seals, grease seals, circlips or cotter pins must be replaced with new ones whenever disassembled.



Assembly Order

In most cases assembly order is the reverse of disassembly, however, if assembly order is provided in this Service Manual, follow the procedures given.

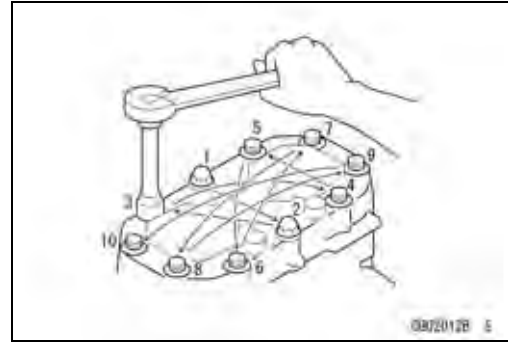


1-4 GENERAL INFORMATION

Before Servicing

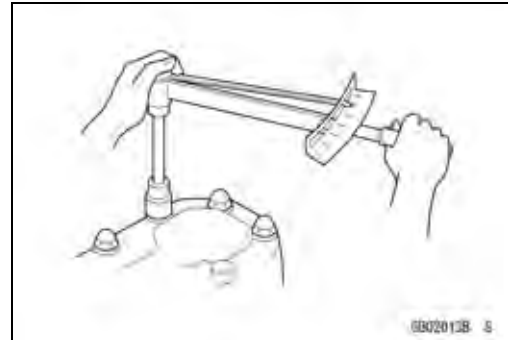
Tightening Sequence

Bolts, nuts, or screws must be tightened according to the specified sequence to prevent case warpage or deformation which can lead to malfunction. If the specified tightening sequence is not indicated, tighten the fasteners alternating diagonally.



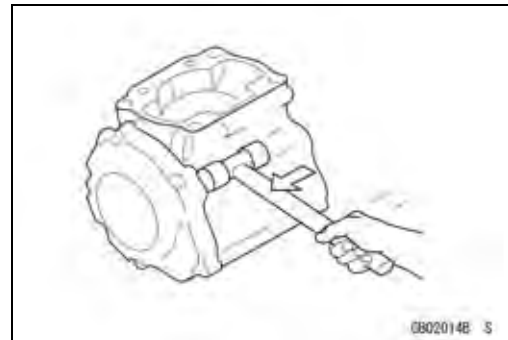
Tightening Torque

Incorrect torque applied to a bolt, nut, or screw may lead to serious damage. Tighten fasteners to the specified torque using a good quality torque wrench. Often, the tightening sequence is followed twice-initial tightening and final tightening with torque wrench.



Force

Use common sense during disassembly and assembly, excessive force can cause expensive or hard to repair damage. When necessary, remove screws that have a non-permanent locking agent applied using an impact driver. Use a plastic-faced mallet whenever tapping is necessary.



Gasket, O-ring

Hardening, shrinkage, or damage of both gaskets and O-rings after disassembly can reduce sealing performance. Remove old gaskets and clean the sealing surfaces thoroughly so that no gasket material or other material remains. Install new gaskets and replace used O-rings when re-assembling.



Liquid Gasket, Locking Agent

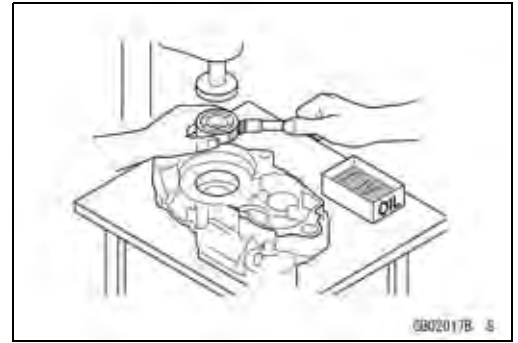
For applications that require Liquid Gasket or a Locking agent, clean the surfaces so that no oil residue remains before applying liquid gasket or locking agent. Do not apply them excessively. Excessive application can clog oil passages and cause serious damage.



Before Servicing

Press

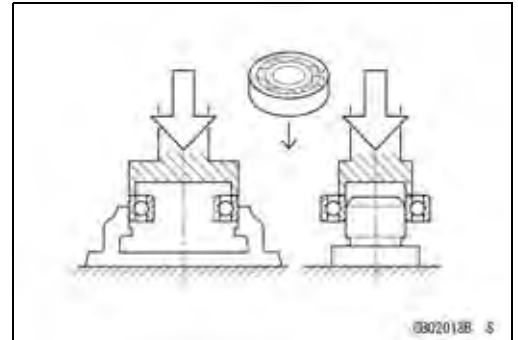
For items such as bearings or oil seals that must be pressed into place, apply small amount of oil to the contact area. Be sure to maintain proper alignment and use smooth movements when installing.



Ball Bearing and Needle Bearing

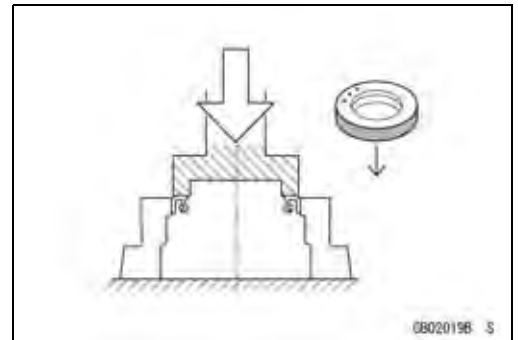
Do not remove pressed ball or needle unless removal is absolutely necessary. Replace with new ones whenever removed. Press bearings with the manufacturer and size marks facing out. Press the bearing into place by putting pressure on the correct bearing race as shown.

Pressing the incorrect race can cause pressure between the inner and outer race and result in bearing damage.



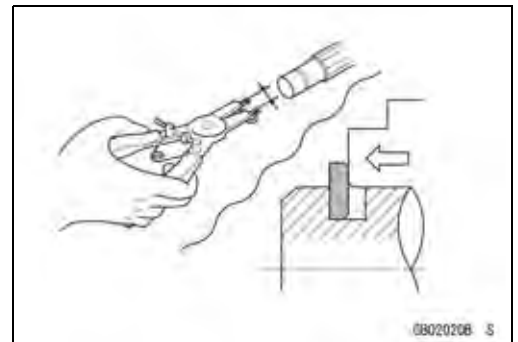
Oil Seal, Grease Seal

Do not remove pressed oil or grease seals unless removal is necessary. Replace with new ones whenever removed. Press new oil seals with manufacture and size marks facing out. Make sure the seal is aligned properly when installing.



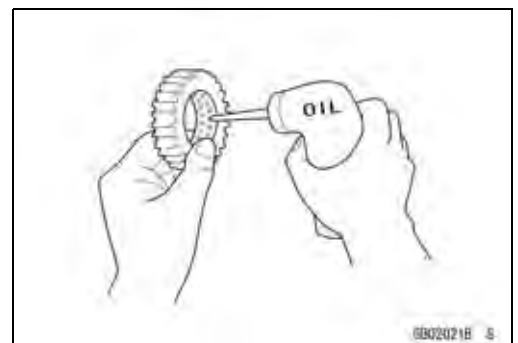
Circlips, Cotter Pins

Replace circlips or cotter pins that were removed with new ones. Install the circlip with its sharp edge facing outward and its chamfered side facing inward to prevent the clip from being pushed out of its groove when loaded. Take care not to open the clip excessively when installing to prevent deformation.



Lubrication

It is important to lubricate rotating or sliding parts during assembly to minimize wear during initial operation. Lubrication points are called out throughout this manual, apply the specific oil or grease as specified.

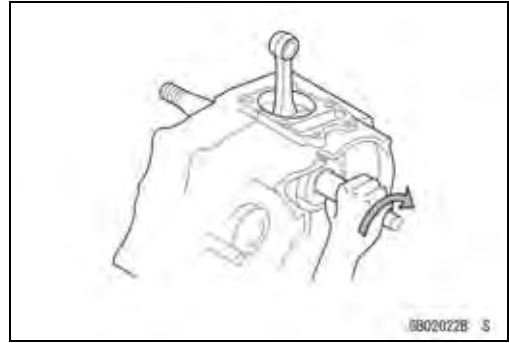


1-6 GENERAL INFORMATION

Before Servicing

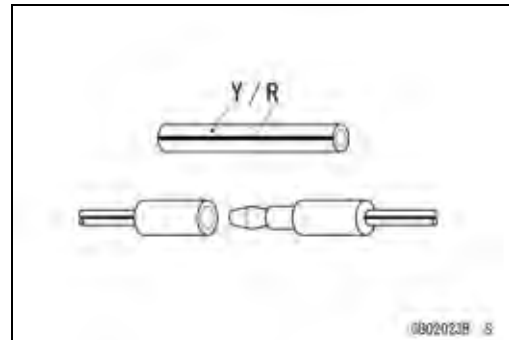
Direction of Engine Rotation

When rotating the crankshaft by hand, the free play amount of rotating direction will affect the adjustment. Rotate the crankshaft to positive direction (clockwise viewed from output side).



Electrical Wires

A two-color wire is identified first by the primary color and then the stripe color. Unless instructed otherwise, electrical wires must be connected to those of the same color.



Model Identification

ZR750-J1 Left Side View:



ZR750-J1 Right Side View:



1-8 GENERAL INFORMATION

General Specifications

Items	ZR750-J1
Dimensions: Overall length Overall width Overall height Wheelbase Road clearance Seat height Dry mass Curb mass: Front Rear Fuel tank capacity	2 080 mm (81.9 in.) 780 mm (30.7 in.) 1 055 mm (41.5 in.) 1 425 mm (56.1 in.) 165 mm (6.5 in.) 815 mm (32.1 in.) 195 kg (430.0 lb) 111 kg (244.8 lb) 107 kg (235.9 lb) 18 L (5.0 US gal.)
Performance: Minimum turning radius	2.9 m (9.5 ft)
Engine: Type Cooling system Bore and stroke Displacement Compression ratio Maximum horsepower Maximum torque Carburetion system Starting system Ignition system Timing advance Ignition timing Spark plug Cylinder numbering method Firing order Valve timing: Inlet Open Close Duration Exhaust Open Close Duration Lubrication system Engine oil: Type	4-stroke, DOHC, 4-cylinder Liquid-cooled 68.4 × 50.9 mm (2.7 × 2.0 in.) 748 mL (45.64 cu in.) 11.3 79 kW (107 PS) @10 500 r/min (rpm), (MY, AU) 80 kW (109 PS) @11 000 r/min (rpm) (HR) 78.2 kW (106 PS) @11 000 r/min (rpm) 75 N·m (7.6 kgf·m, 55 ft·lb) @8 200 r/min (rpm), (HR) 73 N·m (7.4 kgf·m, 54 ft·lb) @8 200 r/min (rpm) FI (Fuel Injection) KEIHIN TTK34 × 4 Electric starter Battery and coil (transistorized) Electronically advanced (digital igniter) From 10° BTDC @1 100 r/min (rpm) to 37° BTDC @5 800 r/min (rpm) NGK CR9EK or ND U27ETR Left to right, 1-2-3-4 1-2-4-3 38° BTDC 66° ABDC 284° 57° BBDC 31° ATDC 268° Forced lubrication (wet sump) API SE, SF or SG API SH or SJ with JASO MA

General Specifications

Items	ZR750-J1
Viscosity	SAE 10W-40
Capacity	3.8 L (4.0 US qt)
Drive Train:	
Primary reduction system:	
Type	Gear
Reduction ratio	1.714 (84/49)
Clutch type	Wet multi disc
Transmission:	
Type	6-speed, constant mesh, return shift
Gear ratios:	
1st	2.571 (36/14)
2nd	1.941 (33/17)
3rd	1.555 (28/18)
4th	1.333 (28/21)
5th	1.200 (24/20)
6th	1.095 (23/21)
Final drive system:	
Type	Chain drive
Reduction ratio	2.867 (43/15)
Overall drive ratio	5.382 @Top gear
Frame:	
Type	Tubular, diamond
Caster (rake angle)	24.5°
Trail	104 mm (4.1 in.)
Front tire:	
Type	Tubeless
Size	120/70 ZR17 M/C (58W)
Rear tire:	
Type	Tubeless
Size	180/55 ZR17 M/C (73W)
Front suspension:	
Type	Telescopic fork (upside-down)
Wheel travel	120 mm (4.7 in.)
Rear suspension:	
Type	Swingarm (uni-trak)
Wheel travel	126 mm (5.0 in.)
Brake Type:	
Front	Dual discs
Rear	Single disc
Electrical Equipment:	
Battery	12 V 8 Ah
Headlight:	
Type	Semi-sealed beam
Bulb	12 V 55 W × 2/55 W (Hi/Lo)
Tail/brake light	12 V 0.5/3.8 W (LED), (CA) 12 V 0.5/5W (LED)
Alternator:	
Type	Three-phase AC
Rated output	24 A/14 V @5 000 r/min (rpm)

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

(AU): Australia Model

(CA): Canada Model

(MY): Malaysia Model

(HR): with Honeycomb Catalytic Converter Model (Restricted model)

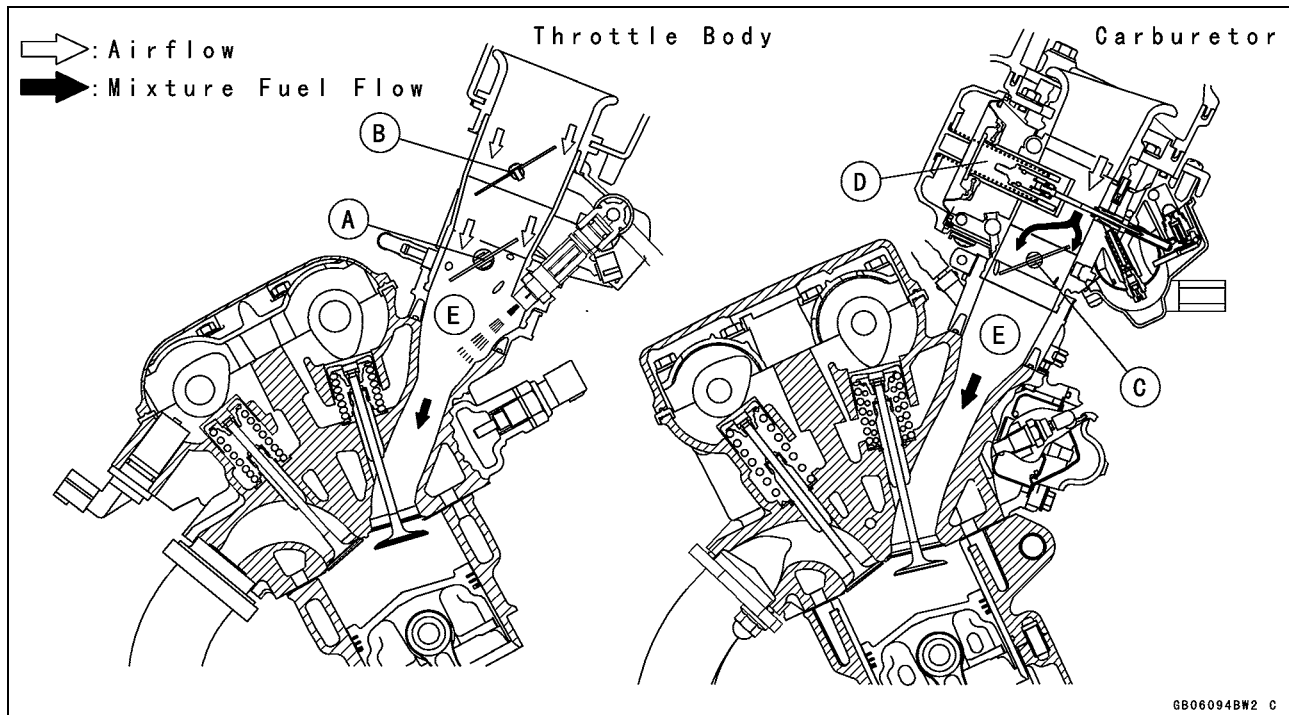
1-10 GENERAL INFORMATION

Technical Information – Air Inlet System

Subthrottle Control System

The ZR750-J1 employs large bore throttle bodies to increase power output. However, sudden changes in throttle opening can cause hesitation and jerky throttle response with a single butterfly valve in a large bore. Therefore two throttle valves are placed in each inlet tract, the main throttle valve located closest to the cylinder and a subthrottle valve placed further up the inlet tract. The main throttle valve is operated by the rider when the throttle grip is turned clockwise or counterclockwise, while the subthrottle valve is operated by a stepping motor controlled by the ECU. The subthrottle valve automatically adjusts air inlet to more precisely match engine demand, so that when the main throttle is opened quickly there is no hesitation or jerky response.

The subthrottle valves allow the fuel injection system to provide smooth throttle response, similar to that of a constant velocity carburetor, no matter how quickly the throttle is opened.



- A. Main Throttle Valve
- B. Subthrottle Valve
- C. Throttle Valve

- D. Vacuum Piston
- E. Inlet Air