

FOREWORD

This manual contains an introductory description on the SUZUKI GSF1250/S/A/SA and procedures for its inspection/service and overhaul of its main components.

Other information considered as generally known is not included.

Read the GENERAL INFORMATION section to familiarize yourself with the motorcycle and its maintenance. Use this section as well as other sections to use as a guide for proper inspection and service.

This manual will help you know the motorcycle better so that you can assure your customers of fast and reliable service.

** This manual has been prepared on the basis of the latest specifications at the time of publication. If modifications have been made since then, differences may exist between the content of this manual and the actual motorcycle.*

** Illustrations in this manual are used to show the basic principles of operation and work procedures. They may not represent the actual motorcycle exactly in detail.*

** This manual is written for persons who have enough knowledge, skills and tools, including special tools, for servicing SUZUKI motorcycles. If you do not have the proper knowledge and tools, ask your authorized SUZUKI motorcycle dealer to help you.*

▲ WARNING

Inexperienced mechanics or mechanics without the proper tools and equipment may not be able to properly perform the services described in this manual.

Improper repair may result in injury to the mechanic and may render the motorcycle unsafe for the rider and passenger.

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Section 00

00

Precautions

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Precautions

Precautions

Warning / Caution / Note

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Please read this manual and follow its instructions carefully. To emphasize special information, the symbol and the words WARNING, CAUTION and NOTE have special meanings. Pay special attention to the messages highlighted by these signal words.

⚠ WARNING

Indicates a potential hazard that could result in death or injury.

⚠ CAUTION

Indicates a potential hazard that could result in motorcycle damage.

NOTE

Indicates special information to make maintenance easier or instructions clearer.

Please note, however, that the warnings and cautions contained in this manual cannot possibly cover all potential hazards relating to the servicing, or lack of servicing, of the motorcycle. In addition to the WARNINGS and CAUTIONS stated, you must use good judgement and basic mechanical safety principles. If you are unsure about how to perform a particular service operation, ask a more experienced mechanic for advice.

General Precautions

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⚠ WARNING

- Proper service and repair procedures are important for the safety of the service mechanic and the safety and reliability of the motorcycle.
- When 2 or more persons work together, pay attention to the safety of each other.
- When it is necessary to run the engine indoors, make sure that exhaust gas is forced outdoors.
- When working with toxic or flammable materials, make sure that the area you work in is well ventilated and that you follow all of the material manufacturer's instructions.
- Never use gasoline as a cleaning solvent.

- To avoid getting burned, do not touch the engine, engine oil, oil cooler and exhaust system until they have cooled.
- After servicing the fuel, oil, water, exhaust or brake systems, check all lines and fittings related to the system for leaks.

⚠ CAUTION

- If parts replacement is necessary, replace the parts with Suzuki Genuine Parts or their equivalent.
- When removing parts that are to be reused, keep them arranged in an orderly manner so that they may be reinstalled in the proper order and orientation.
- Be sure to use special tools when instructed.
- Make sure that all parts used in reassembly are clean. Lubricate them when specified.
- Use the specified lubricant, bond, or sealant.
- When removing the battery, disconnect the negative (-) cable first and then the positive (+) cable.
- When reconnecting the battery, connect the positive (+) cable first and then the negative (-) cable, and replace the terminal cover on the positive (+) terminal.
- When performing service to electrical parts, if the service procedures do not require use of battery power, disconnect the negative (-) cable the battery.
- When tightening the cylinder head or case bolts and nuts, tighten the larger sizes first. Always tighten the bolts and nuts diagonally from the inside toward outside and to the specified tightening torque.
- Whenever you remove oil seals, gaskets, packing, O-rings, locking washers, self-locking nuts, cotter pins, circlips and certain other parts as specified, be sure to replace them with new ones. Also, before installing these new parts, be sure to remove any left over material from the mating surfaces.
- Never reuse a circlip. When installing a new circlip, take care not to expand the end gap larger than required to slip the circlip over the shaft. After installing a circlip, always ensure that it is completely seated in its groove and securely fitted.

- Use a torque wrench to tighten fasteners to the specified torque. Wipe off grease and oil if a thread is smeared with them.
- After reassembling, check parts for tightness and proper operation.
- To protect the environment, do not unlawfully dispose of used motor oil, engine coolant and other fluids: batteries, and tires.
- To protect Earth's natural resources, properly dispose of used motorcycle and parts.

Precautions for Electrical Circuit Service

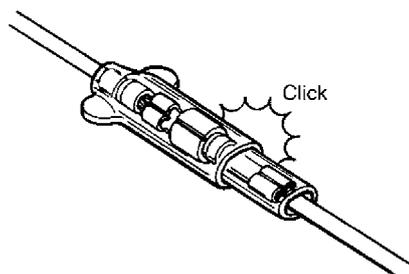
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When handling the electrical parts or servicing the FI and ABS systems, observe the following points for the safety of the systems.

Electrical Parts

Connector / Coupler

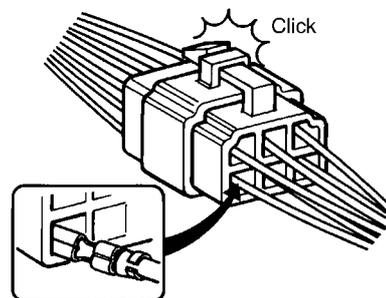
- When connecting a connector, be sure to push it in until a click is felt.



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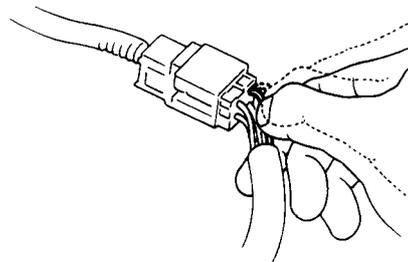
- With a lock type coupler, be sure to release the lock when disconnecting, and push it in fully to engage the lock when connecting.
- When disconnecting the coupler, be sure to hold the coupler body and do not pull the lead wires.
- Inspect each terminal on the connector/coupler for looseness or bending.

- Inspect each terminal for corrosion and contamination. The terminals must be clean and free of any foreign material which could impede proper terminal contact.



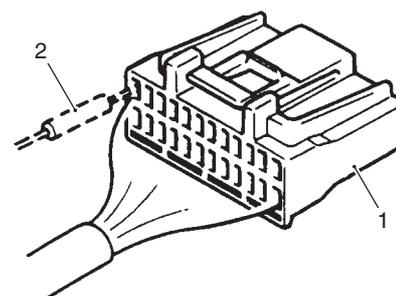
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- Inspect each lead wire circuit for poor connection by shaking it by hand lightly. If any abnormal condition is found, repair or replace.



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- When taking measurements at electrical connectors using a tester probe, be sure to insert the probe from the wire harness side (rear) of the connector/coupler.



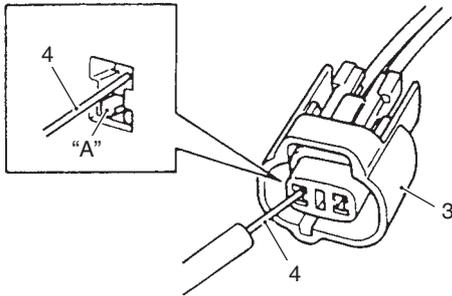
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1. Coupler	2. Probe
------------	----------

- When connecting meter probe from the terminal side of the coupler (where connection from harness side not being possible), use extra care not to force and cause the male terminal to bend or the female terminal to open. Connect the probe as shown to avoid opening of female terminal. Never push in the probe where male terminal is supposed to fit.

00-3 Precautions:

- Check the male connector for bend and female connector for excessive opening. Also check the coupler for locking (looseness), corrosion, dust, etc.

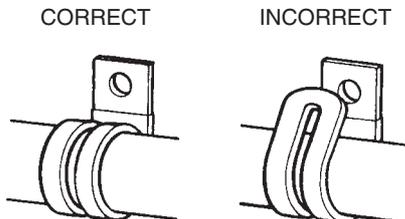


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3. Coupler	4. Probe	"A": Where male terminal fits
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Clamp

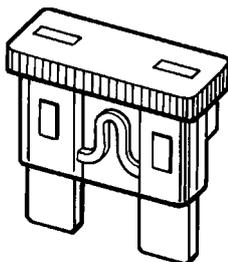
- Clamp the wire harness at such positions as indicated in "Wiring Harness Routing Diagram in Section 9A (Page 9A-8)".
- Bend the clamp properly so that the wire harness is clamped securely.
- In clamping the wire harness, use care not to allow it to hang down.
- Do not use wire or any other substitute for the band type clamp.



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Fuse

- When a fuse is blown, always investigate the cause to correct it and then replace the fuse.
- Do not use a fuse of different capacity.
- Do not use wire or any other substitute for the fuse.



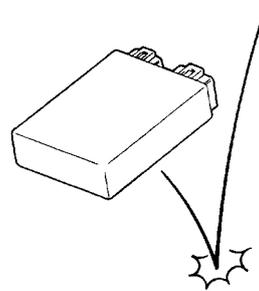
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Switch

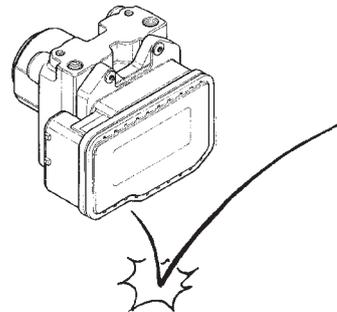
Never apply grease material to switch contact points to prevent damage.

ECM / ABS control unit / HU / Various sensors

- Since each component is a high-precision part, great care should be taken not to apply any severe impacts during removal and installation.

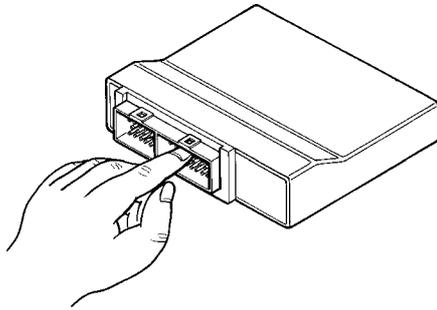


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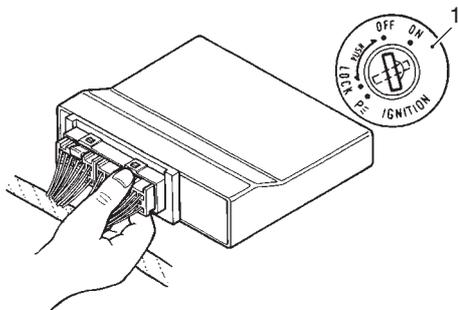
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- Be careful not to touch the electrical terminals of the electronic parts (ECM, ABS control unit/HU, etc.). The static electricity from your body may damage them.



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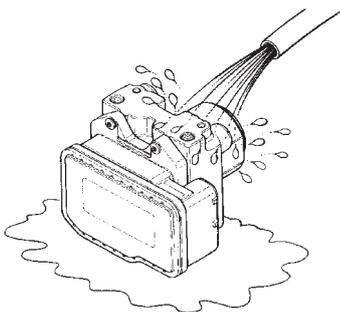
- When disconnecting and connecting the coupler, make sure to turn OFF the ignition switch, or electronic parts may get damaged.



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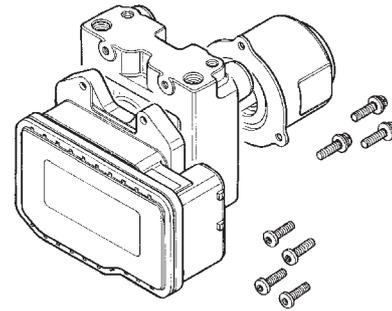
1. Ignition switch

- Never allow dust or water to contact the ABS control unit/HU.



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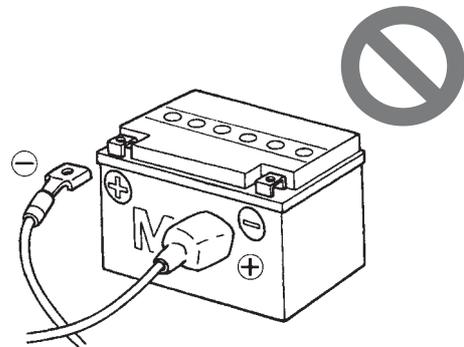
- The ABS control unit/HU cannot be disassembled. Replace the whole unit with a new one.



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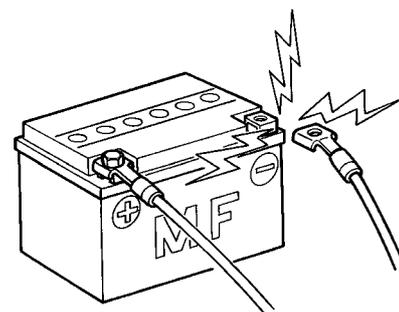
Battery

- Battery connection in reverse polarity is strictly prohibited. Such a wrong connection will damage the components of the FI and ABS systems instantly when reverse power is applied.



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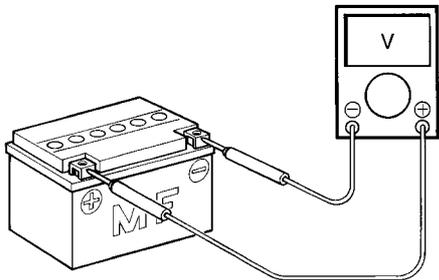
- Removing any battery terminal of a running engine is strictly prohibited. The moment such removal is made, damaging counter electromotive force will be applied to the electronic unit which may result in serious damage.



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00-5 Precautions:

- Before measuring voltage at each terminal, check to make sure that battery voltage is 11 V or higher. Terminal voltage check with a low battery voltage will lead to erroneous diagnosis.



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- Never connect any tester (voltmeter, ohmmeter, or whatever) to the electronic unit when its coupler is disconnected. Otherwise, damage to electronic unit may result.
- Never connect an ohmmeter to the electronic unit with its coupler connected. If attempted, damage to ECM or sensors may result.
- Be sure to use a specified voltmeter/ohmmeter. Otherwise, accurate measurements may not be obtained and personal injury may result.

Electrical Circuit Inspection Procedure

While there are various methods for electrical circuit inspection, described here is a general method to check for open and short circuit using an ohmmeter and a voltmeter.

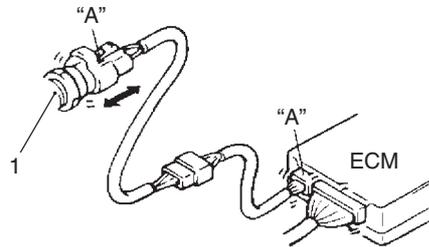
Open circuit check

Possible causes for the open circuit are as follows. As the cause can exist in the connector/coupler or terminal, they need to be checked carefully.

- Loose connection of connector/coupler
- Poor contact of terminal (due to dirt, corrosion or rust, poor contact tension, entry of foreign object etc.)
- Wire harness being open.
- Poor terminal-to-wire connection.

When checking system circuits including an electronic control unit such as ECM, ABS control unit/HU, etc., it is important to perform careful check, starting with items which are easier to check.

- 1) Disconnect the negative (-) cable from the battery.
- 2) Check each connector/coupler at both ends of the circuit being checked for loose connection. Also check for condition of the coupler lock if equipped.



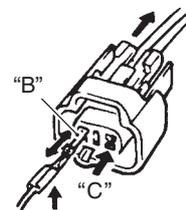
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1. Sensor	"A": Check for loose connection
-----------	---------------------------------

- 3) Using a test male terminal, check the female terminals of the circuit being checked for contact tension.

Check each terminal visually for poor contact (possibly caused by dirt, corrosion, rust, entry of foreign object, etc.). At the same time, check to make sure that each terminal is fully inserted in the coupler and locked.

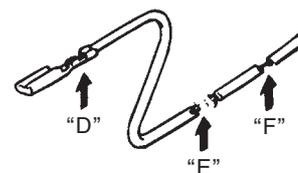
If contact tension is not enough, rectify the contact to increase tension or replace. The terminals must be clean and free of any foreign material which could impede proper terminal contact.



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"B": Check contact tension by inserting and removing.
"C": Check each terminal for bend and proper alignment.

- 4) Using continuity inspect or voltage check procedure as described below, inspect the wire harness terminals for open circuit and poor connection. Locate abnormality, if any.

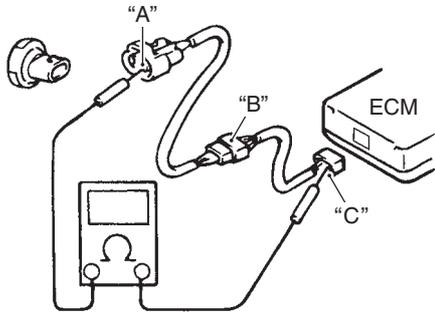


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"D": Looseness of crimping
"E": Open
"F": Thin wire (A few strands left)

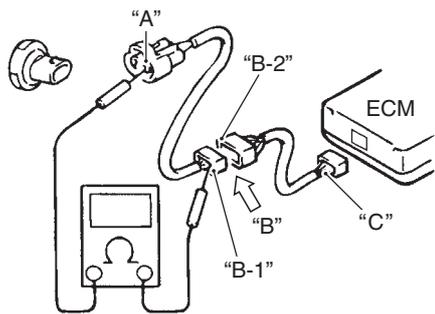
Continuity check

- 1) Measure resistance across coupler "B" (between "A" and "C" in figure).
If no continuity is indicated (infinity or over limit), the circuit is open between terminals "A" and "C".



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- 2) Disconnect the coupler "B" and measure resistance between couplers "A" and "B-1".
If no continuity is indicated, the circuit is open between couplers "A" and "B-1". If continuity is indicated, there is an open circuit between couplers "B-2" and "C" or an abnormality in coupler "B-2" or coupler "C".



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Voltage check

If voltage is supplied to the circuit being checked, voltage check can be used as circuit check.

- 1) With all connectors/couplers connected and voltage applied to the circuit being checked, measure voltage between each terminal and body ground.
- 2) If measurements were taken as shown in the figure and results were listed in the following, it means that the circuit is open between terminals "A" and "B".

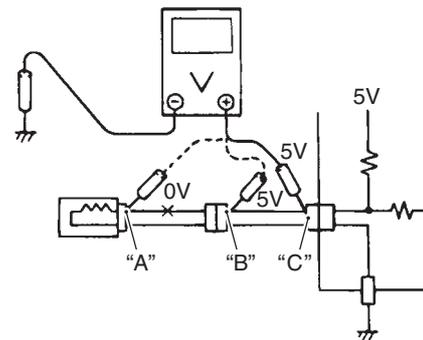
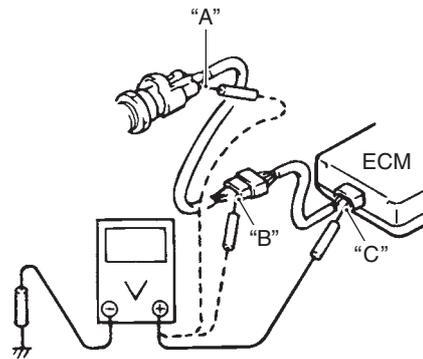
Voltage between

- "A" and body ground: Approx. 5 V
- "B" and body ground: Approx. 5 V
- "C" and body ground: 0 V

- 3) Also, if measured values are as listed following, a resistance (abnormality) exists which causes the voltage drop in the circuit between terminals "A" and "B".

Voltage between

- "A" and body ground: Approx. 5 V
- "B" and body ground: Approx. 5 V – 2 V voltage drop
- "C" and body ground: 3 V – 2 V voltage drop



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Short circuit check (Wire harness to ground)

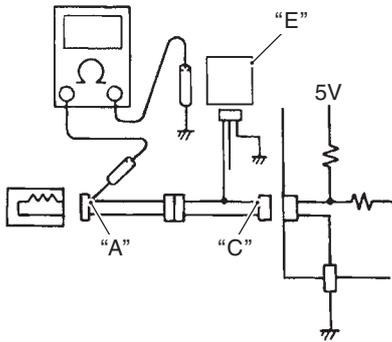
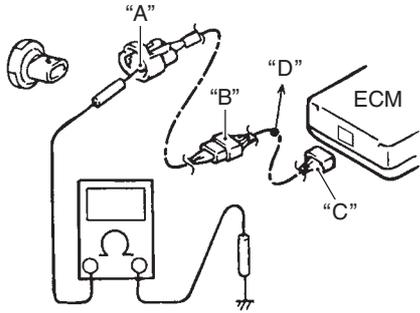
- 1) Disconnect the negative (-) cable from the battery.
- 2) Disconnect the connectors/couplers at both ends of the circuit to be checked.

NOTE

If the circuit to be checked branches to other parts as shown, disconnect all connectors/couplers of those parts. Otherwise, diagnosis will be wrong.

00-7 Precautions:

- 3) Measure resistance between terminal at one end of circuit ("A" terminal in figure) and body ground. If continuity is indicated, there is a short circuit to ground between terminals "A" and "C".

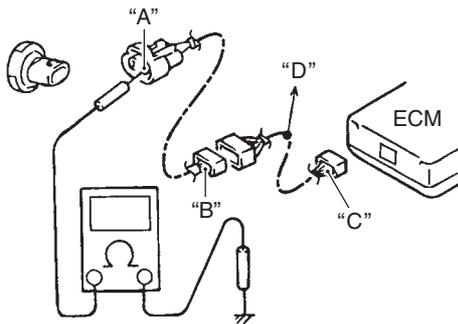


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"D": To other parts

"E": Other parts

- 4) Disconnect the connector/coupler included in circuit (coupler "B") and measure resistance between terminal "A" and body ground. If continuity is indicated, the circuit is shorted to the ground between terminals "A" and "B".



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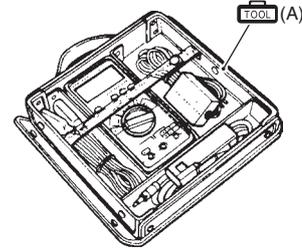
"D": To other parts

Using The Multi-Circuit Testers

- Use the Suzuki multi-circuit tester set.
- Use well-charged batteries in the tester.
- Be sure to set the tester to the correct testing range.

Special tool

 (A): 09900-25008 (Multi-circuit tester set)



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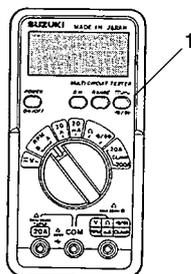
Using the testers

- Incorrectly connecting the (+) and (-) probes may cause the inside of the tester to be burned.
- If the voltage and current are not known, make measurements using the highest range.
- When measuring the resistance with the multi-circuit tester (1), ∞ will be shown as 10.00 M Ω and "1" flashes in the display.
- Check that no voltage is applied before making the measurement. If voltage is applied the tester may be damaged.

- After using the tester, turn the power off.

Special tool

TOOL : 09900-25008 (Multi-circuit tester set)



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NOTE

- When connecting the multi-circuit tester, use the needle pointed probe to the back side of the lead wire coupler and connect the probes of tester to them.
- Use the needle pointed probe to prevent the rubber of the water proof coupler from damage.
- When using the multi-circuit tester, do not strongly touch the terminal of the ECM coupler with a needle pointed tester probe to prevent the terminal damage or terminal bend.

Special tool

TOOL (A): 09900-25009 (Needle pointed probe set)



I649G1000025-02

00-9 Precautions:

Section 0

General Information

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General Information

General Description

Symbols

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Listed in the table below are the symbols indicating instructions and other information necessary for servicing. The meaning of each symbol is also included in the table.

Symbol	Definition
	Torque control required. Data beside it indicate specified torque.
	Apply oil. Use engine oil unless otherwise specified.
	Apply molybdenum oil solution. (Mixture of engine oil and SUZUKI MOLY PASTE in a ratio of 1:1).
	Apply SUZUKI SUPER GREASE "A" or equivalent. 99000-25010
	Apply SUZUKI MOLY PASTE or equivalent. 99000-25140
	Apply SUZUKI SILICONE GREASE or equivalent. 99000-25100
	Apply SUZUKI BOND "1207B" or equivalent. 99000-31140
	Apply SUZUKI BOND "1215" or equivalent. 99000-31110
	Apply THREAD LOCK SUPER "1303" or equivalent. 99000-32030
	Apply THREAD LOCK SUPER "1322" or equivalent. 99000-32110
	Apply THREAD LOCK SUPER "1360" or equivalent. 99000-32130
	Use engine coolant or equivalent. 99000-99032-11X
	Use fork oil or equivalent. 99000-99001-SS8
	Apply or use brake fluid.
	Use special tool.
	Do not reuse.
	Note on reassembly.

Abbreviations

B718H10101002

A:
ABDC: After Bottom Dead Center
ABS: Anti-lock brake system
AC: Alternating Current
ACL: Air Cleaner, Air Cleaner Box
API: American Petroleum Institute
ATDC: After Top Dead Center
A/F: Air Fuel Mixture
B:
BBDC: Before Bottom Dead Center
BTDC: Before Top Dead Center
B+: Battery Positive Voltage
C:
CKP Sensor: Crankshaft Position Sensor (CKPS)
CKT: Circuit
CLP Switch: Clutch Lever Position Switch (Clutch Switch)

CO: Carbon Monoxide
CPU: Central Processing Unit
D:
DC: Direct Current
DMC: Dealer Mode Coupler
DOHC: Double Over Head Camshaft
DRL: Daytime Running Light
DTC: Diagnostic Trouble code
E:
ECM: Engine Control Module Engine Control Unit (ECU) (FI Control Unit)
ECT Sensor: Engine Coolant Temperature Sensor (ECTS)
 Water Temp. Sensor (WTS)
F:
FI: Fuel Injection, Fuel Injector
FP: Fuel pump
FPR: Fuel Pressure Regulator

FP Relay: Fuel Pump Relay
G:
GEN: Generator
GND: Ground
GP Switch: Gear Position Switch
H:
HC: Hydrocarbons
HO2 sensor: Heated Oxygen Sensor (HO2S)
I:
IAP Sensor: Intake Air Pressure Sensor (IAPS)
IAT Sensor: Intake Air Temperature Sensor (IATS)
IG: Ignition
ISC Valve: Idle Speed Control Valve (ISCV)
J:
JASO: Japanese Automobile Standards Organization
L:
LCD: Liquid Crystal Display
LED: Light Emitting Diode (Malfunction Indicator Lamp)
LH: Left Hand
M:
MAL-CODE: Malfunction Code (Diagnostic Code)
Max: Maximum
MIL: Malfunction Indicator Lamp (LED)
Min: Minimum
N:
NOx: Nitrogen Oxides
O:
OHC: Over Head Camshaft
OPS: Oil Pressure Switch
P:
PAIR: Pulsed Secondary Air Injection
PCV: Positive Crankcase Ventilation (Crankcase Breather)
R:
RH: Right Hand
ROM: Read Only Memory
S:
SAE: Society of Automotive Engineers
SDS: Suzuki Diagnosis System
STC System: Secondary Throttle Control System (STCS)
STP Sensor: Secondary Throttle Position Sensor (STPS)
ST Valve: Secondary Throttle Valve (STV)
STV Actuator: Secondary Throttle Valve Actuator (STVA)
T:
TO Sensor: Tip-over Sensor (TOS)
TP Sensor: Throttle Position Sensor (TPS)

SAE-to-Former SUZUKI Term

B718H10101012

This list shows SAE (Society of Automotive Engineers) J1930 terms and abbreviations which may be used in this manual in compliance with SAE recommendations, as well as their former SUZUKI names.

Ex. SAE term (Abbreviation): Former SUZUKI term

A:

Air Cleaner (ACL): Air Cleaner, Air Cleaner Box

B:

Battery Positive Voltage (B+): Battery Voltage, +B
C:
Crankshaft Position Sensor (CKP Sensor): Crankshaft Position Sensor (CKPS), Crank Angle
D:
Data Link Connector (DLC): Dealer Mode Coupler
Diagnostic Test Mode (DTM): —
Diagnostic Trouble Code (DTC): Diagnostic Code, Malfunction Code
E:
Electronic Ignition (EI): —
Engine Control Module (ECM): Engine Control Module (ECM), FI Control Unit, Engine Control Unit (ECU)
Engine Coolant Level (ECL): Coolant Level
Engine Coolant Temperature (ECT): Coolant Temperature, Engine Coolant Temperature, Water Temperature
Engine Speed (RPM): Engine Speed (RPM)
Evaporative Emission (EVAP): Evaporative Emission
Evaporative Emission Canister (EVAP Canister): — (Canister)
F:
Fan Control (FC): —
Fuel Level Sensor: Fuel Level Sensor, Fuel Level Gauge
Fuel Pump (FP): Fuel Pump (FP)
G:
Generator (GEN): Generator
Ground (GND): Ground (GND, GRD)
H:
Hydrocarbons (HC): Hydrocarbons
Heated Oxygen Sensor (HO2S): Heated Oxygen Sensor (HO2S), O2 sensor
I:
Ignition Control Module (ICM): —
Intake Air Temperature (IAT): Intake Air Temperature (IAT), Air Temperature
Idle Speed Control (ISC): —
Ignition Control (IC): Electronic Spark Advance (ESA)
Ignition Control Module (ICM): —
Intake Air Temperature (IAT): Intake Air Temperature (IAT), Air Temperature
M:
Malfunction Indicator Lamp (MIL): LED Lamp, Malfunction Indicator Lamp (MIL)
Manifold Absolute Pressure (MAP): Intake Air Pressure (IAP), Intake Vacuum
Mass Air Flow (MAF): Air Flow
O:
On-Board Diagnostic (OBD): Self-Diagnosis Function, Diagnostic
Open Loop (OL): —
P:
Programmable Read Only Memory (PROM): —
Pulsed Secondary Air Injection (PAIR): Pulse Air Control (PAIR)
Purge Valve (Purge Valve): Purge Valve (SP Valve)
R:
Random Access Memory (RAM): —

0A-3 General Information:

Read Only Memory (ROM): ROM

S:

Secondary Air Injection (AIR): —

Secondary Throttle Control System (STCS): STC System (STCS)

Secondary Throttle Valve (STV): ST Valve (STV)

Secondary Throttle Valve Actuator (STVA): STV Actuator (STVA)

T:

Throttle Body (TB): Throttle Body (TB)

Throttle Body Fuel Injection (TBI): Throttle Body Fuel Injection (TBI)

Throttle Position Sensor (TP Sensor): TP Sensor (TPS)

V:

Voltage Regulator (VR): Voltage Regulator

Volume Air Flow (VAF): Air Flow

Vehicle Side View

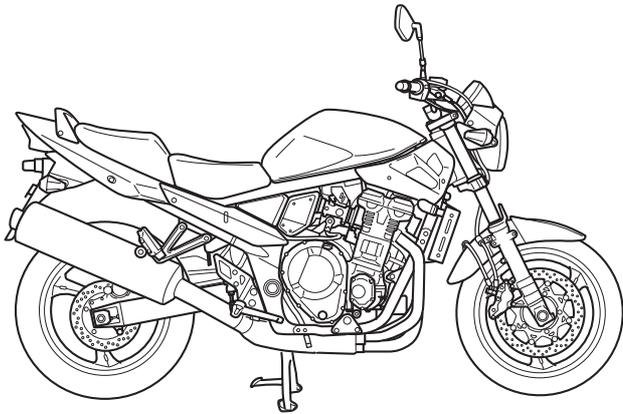
B718H10101003

NOTE

Difference between illustration and actual motorcycles may exist depending on the markets.

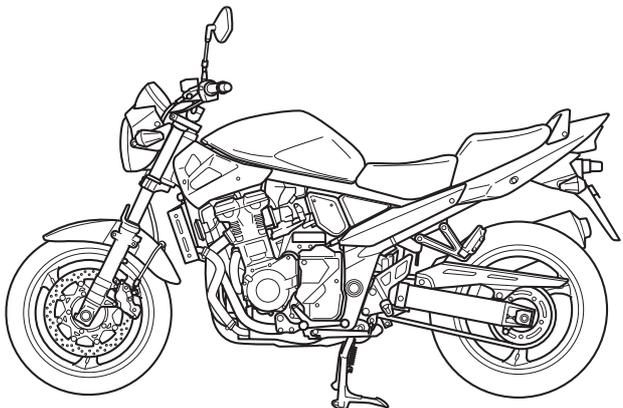
SUZUKI GSF1250 (2007-model)

Right Side



I718H1010001-01

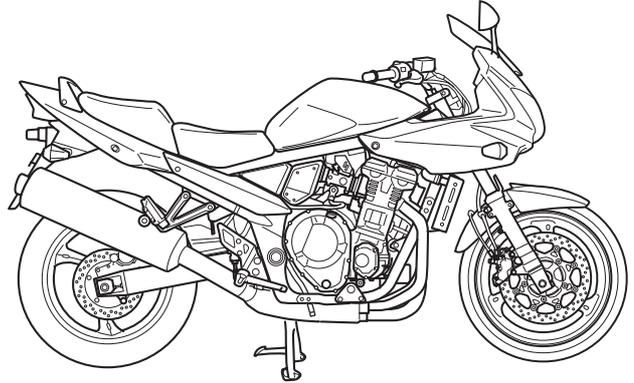
Left Side



I718H1010002-02

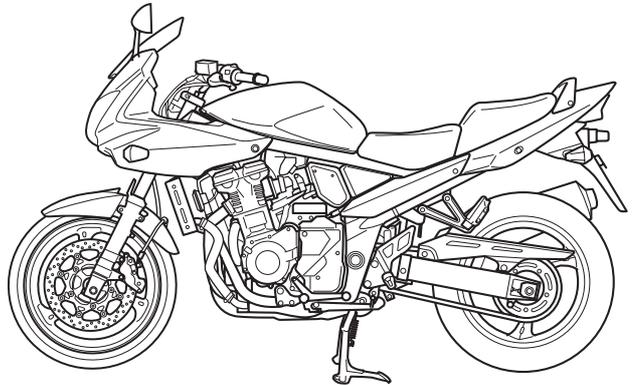
SUZUKI GSF1250S (2007-model)

Right Side



I718H1010003-01

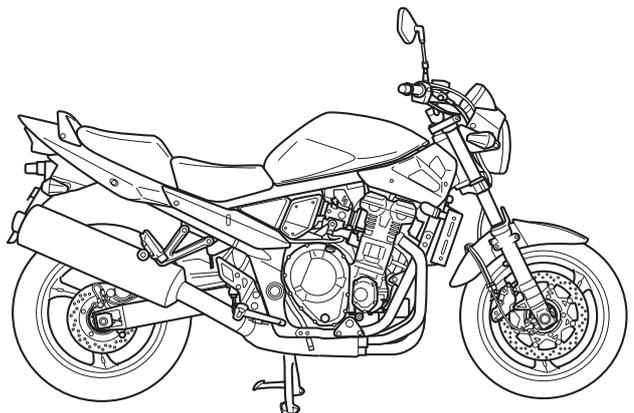
Left Side



I718H1010004-02

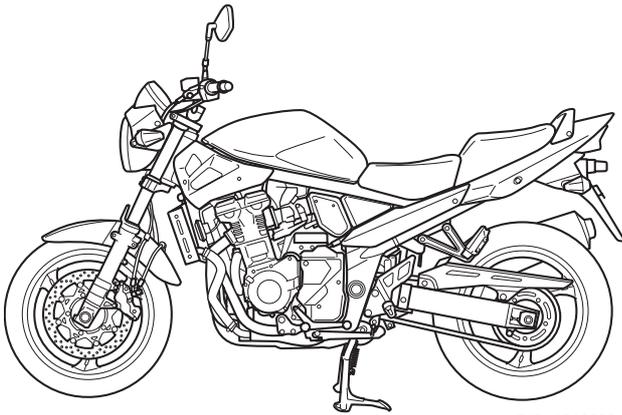
SUZUKI GSF1250A (2007-model)

Right Side



I718H1010005-01

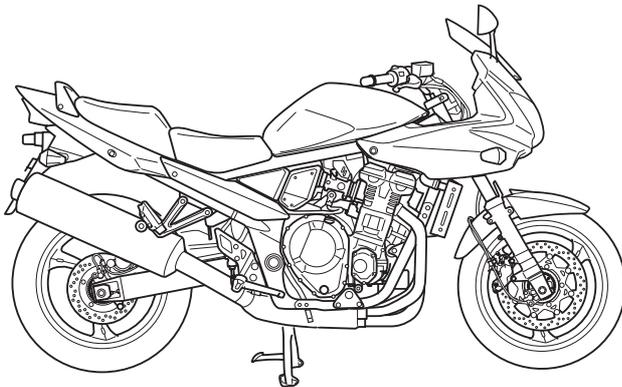
Left Side



I718H1010006-01

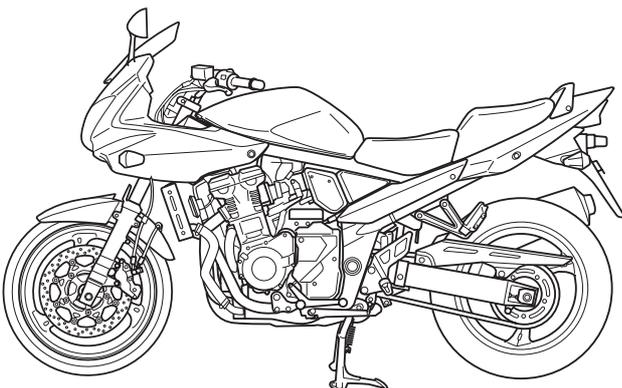
SUZUKI GSF1250SA (2007-model)

Right Side



I718H1010009-02

Left Side

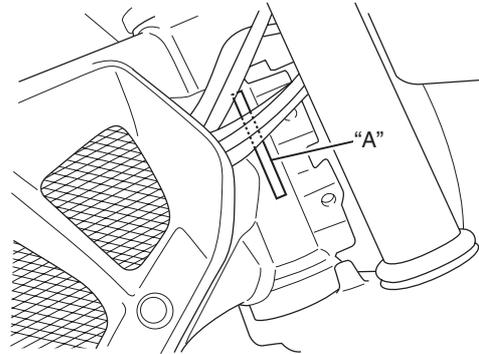


I718H1010010-03

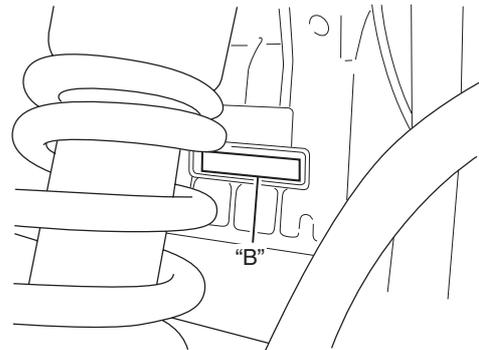
Vehicle Identification Number

B718H10101004

The frame serial number or V.I.N. (Vehicle Identification Number) "A" is stamped on the right side of the steering head pipe. The engine serial number "B" is located on the right side of the crankcase. These numbers are required especially for registering the machine and ordering spare parts.



I718H1010011-03



I718H1010012-03

Fuel and Oil Recommendation

B718H10101005

Fuel (For USA and Canada)

Use only unleaded gasoline of at least 87 pump octane (R/2 + M/2) or 91 octane or higher rated by the research method.

Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.

Fuel (For Other Countries)

Gasoline used should be graded 91 octane (Research Method) or higher. Unleaded gasoline is recommended.

Engine Oil (For USA)

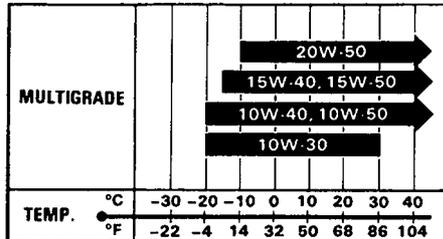
Oil quality is a major contributor to your engine's performance and life. Always select good quality engine oil.

Suzuki recommends the use of SUZUKI PERFORMANCE 4 MOTOR OIL or equivalent engine oil. Use of SF/SG or SH/SJ in API with MA in JASO. Suzuki recommends the use of SAE 10W-40 engine oil. If SAE 10W-40 engine oil is not available, select and alternative according to the chart.

0A-5 General Information:

Engine Oil (For Other Countries)

Oil quality is a major contributor to your engine's performance and life. Always select good quality engine oil. Use of SF/SG or SH/SJ in API with MA in JASO. Suzuki recommends the use of SAE 10W-40 engine oil. If SAE 10W-40 engine oil is not available, select an alternative according to the chart.



I310G1010005-01

Brake Fluid

Specification and classification: DOT 4

⚠ WARNING

Since the brake system of this motorcycle is filled with a glycol-based brake fluid by the manufacturer, do not use or mix different types of fluid such as silicone-based and petroleum-based fluid for refilling the system, otherwise serious damage will result.

Do not use any brake fluid taken from old or used or unsealed containers.

Never reuse brake fluid left over from a previous servicing, which has been stored for a long period.

Front Fork Oil

Use fork oil SS8 or an equivalent fork oil.

Engine Coolant Recommendation

B718H10101011

Engine Coolant

Use an anti-freeze/engine coolant compatible with an aluminum radiator, mixed with distilled water only.

Water for mixing

Use distilled water only. Water other than distilled water can corrode and clog the aluminum radiator.

Anti-freeze/Engine coolant

The engine coolant perform as a corrosion and rust inhibitor as well as anti-freeze. Therefore, the engine coolant should be used at all times even though the atmospheric temperature in your area does not go down to freezing point.

Suzuki recommends the use of SUZUKI COOLANT anti-freeze/engine coolant. If this is not available, use an equivalent which is compatible with an aluminum radiator.

Liquid amount of water/Engine coolant

Solution capacity (total)

3 250 ml (3.4/2.9 US/Imp qt)

For engine coolant mixture information, refer to "Engine Coolant Description in Section 1F (Page 1F-1)".

⚠ CAUTION

Mixing of anti-freeze/engine coolant should be limited to 60%. Mixing beyond it would reduce its efficiency. If the anti-freeze/engine coolant mixing ratio is below 50%, rust inhabiting performance is greatly reduced. Be sure to mix it above 50% even though the atmospheric temperature does not go down to the freezing point.

BREAK-IN Procedures

B718H10101006

During manufacture only the best possible materials are used and all machined parts are finished to a very high standard but it is still necessary to allow the moving parts to "BREAK-IN" before subjecting the engine to maximum stresses. The future performance and reliability of the engine depends on the care and restraint exercised during its early life. The general rules are as follows.

- 1) Keep to these break-in engine speed limits:

Speed limits

Initial 800 km (500 miles): Below 4 500 r/min

Up to 1 600 km (1 000 miles): Below 7 000 r/min

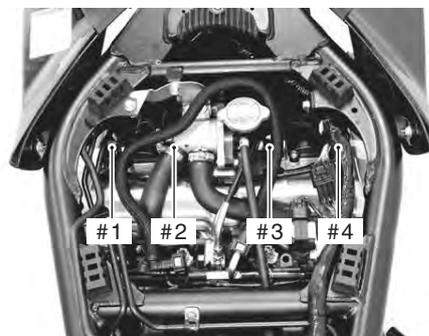
Over 1 600 km (1 000 miles): Below 9 500 r/min

- 2) Upon reaching an odometer reading of 1 600 km (1 000 miles) you can subject the motorcycle to full throttle operation. However, do not exceed 9 500 r/min at any time.

Cylinder Identification

B718H10101007

The four cylinders of this engine are identified as #1, 2, 3 and #4 cylinder, as counted from left to right (as viewed by the rider on the seat).



I718H1010013-01

Country and Area Codes

B718H10101008

The following codes stand for the applicable country(-ies) and area(-s).

Code	Country or Area	Effective Frame No.
GSF1250 K7 (E-02)	U.K.	JS1CH122200100001 –
GSF1250 K7 (E-19)	E.U.	JS1CH122100100001 –
GSF1250S K7 (E-02)	U.K.	JS1CH111200100001 –
GSF1250S K7 (E-03)	U.S.A (Except for California)	JS1GW72A 72100001 –
GSF1250S K7 (E-19)	E.U.	JS1CH111100100001 –
GSF1250S K7 (E-24)	Australia	JS1CH111300100001 –
GSF1250S K7 (E-28)	Canada	JS1GW72A 72100001 –
GSF1250S K7 (E-33)	California (U.S.A)	JS1GW72A 72100001 –
GSF1250A K7 (E-02)	U.K.	JS1CH124200100001 –
GSF1250A K7 (E-19)	E.U.	JS1CH124100100001 –
GSF1250SA K7 (E-02)	U.K.	JS1CH113200100001 –
GSF1250SA K7 (E-03)	U.S.A (Except for California)	JS1GW72B 72100001 –
GSF1250SA K7 (E-19)	E.U.	JS1CH113100100001 –
GSF1250SA K7 (E-24)	Australia	JS1CH113300100001 –
GSF1250SA K7 (E-28)	Canada	JS1GW72B 72100001 –
GSF1250SA K7 (E-33)	California (U.S.A)	JS1GW72B 72100001 –

Wire Color Symbols

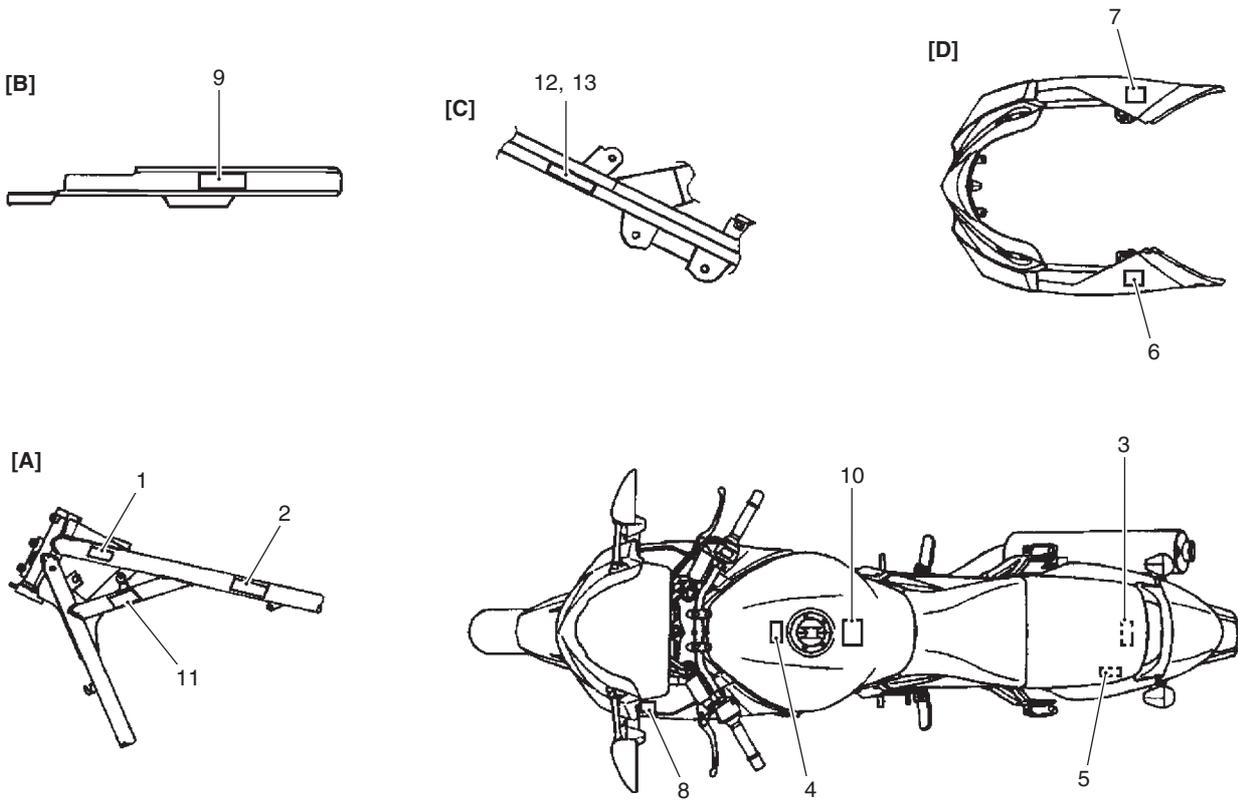
B718H10101009

Symbol	Wire Color	Symbol	Wire Color
B	Black	Bl/Y	Blue with Yellow tracer
Bl	Blue	Br/B	Brown with Black tracer
Br	Brown	G/B	Green with Black tracer
Dbr	Dark brown	G/Y	Green with Yellow tracer
Dg	Dark green	Gr/B	Gray with Black tracer
G	Green	Gr/R	Gray with Red tracer
Gr	Gray	Gr/W	Gray with White tracer
Lbl	Light blue	Gr/Y	Gray with Yellow tracer
Lg	Light green	O/G	Orange with Green tracer
O	Orange	O/R	Orange with Red tracer
P	Pink	O/W	Orange with White tracer
R	Red	O/Y	Orange with Yellow tracer
W	White	P/B	Pink with Black tracer
Y	Yellow	P/W	Pink with White tracer
B/Bl	Black with Blue tracer	R/B	Red with Black tracer
B/Br	Black with Brown tracer	R/Bl	Red with Blue tracer
B/G	Black with Green tracer	W/B	White with Black tracer
B/Lg	Black with Light green tracer	W/Bl	White with Blue tracer
B/O	Black with Orange tracer	W/G	White with Green tracer
B/R	Black with Red tracer	W/R	White with Red tracer
B/W	Black with White tracer	W/Y	White with Yellow tracer
B/Y	Black with Yellow tracer	Y/B	Yellow with Black tracer
Bl/B	Blue with Black tracer	Y/Bl	Yellow with Blue tracer
Bl/G	Blue with Green tracer	Y/R	Yellow with Red tracer
Bl/W	Blue with White tracer	Y/W	Yellow with White tracer

0A-7 General Information:

Warning, Caution and Information Labels Location

B718H10101010



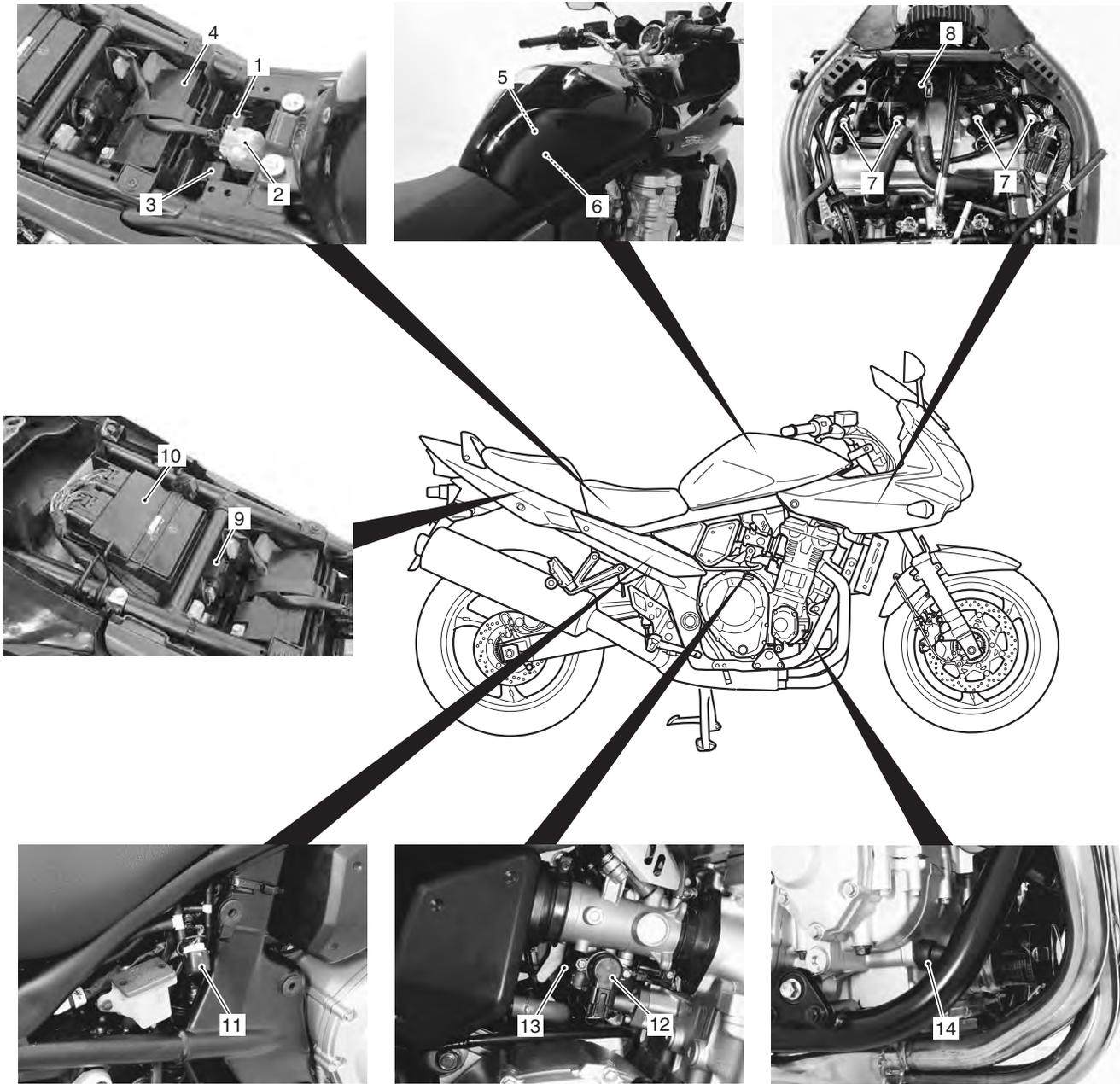
I718H1010016-02

	GSF1250/A	GSF1250S/SA
1. Noise label	—	For E-03, 24, 33
2. Information label	—	For E-03, 28, 33
3. Vacuum hose routing label	—	For E-33
4. Fuel caution label	For E-02	For E-02, 24
5. Manual notice label	—	For E-03, 33
6. Screen label	—	For E-03, 19, 24, 28, 33
7. Screen label	—	For E-28
8. Warning steering label	—	For E-03, 19, 24, 28, 33
9. Tire information label	For E-02, 19	For E-03, 19, 24, 28, 33
10. General warning label	For E-02, 19	For E-03, 19, 24, 28, 33
11. ICES Canada label	—	For E-28
12. I.D. plate	For E-02, 19	For E-02, 19, 24
13. Safety plate	—	For E-03, 28, 33
[A]: Frame head (Left side)		
[B]: Chain cover		
[C]: Frame side tube (Right side)		
[D]: Cowling body		

Component Location

Electrical Components Location

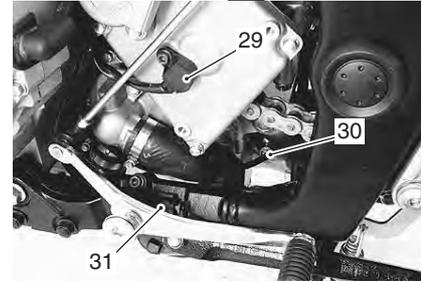
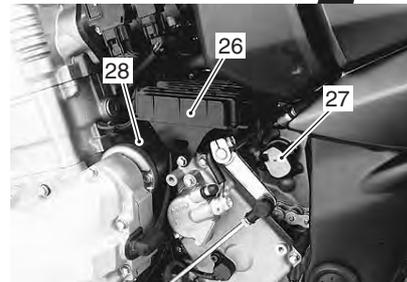
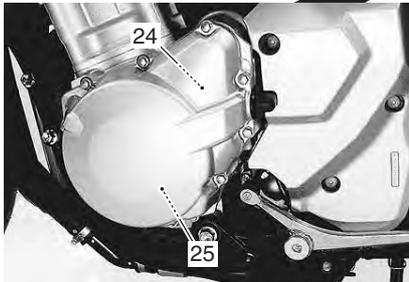
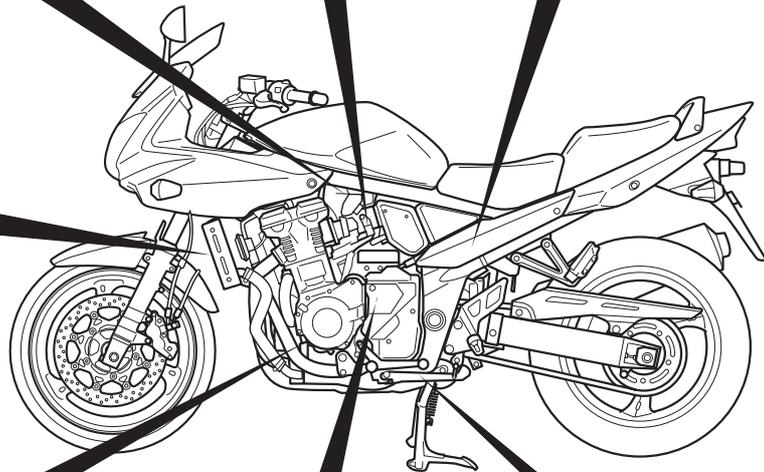
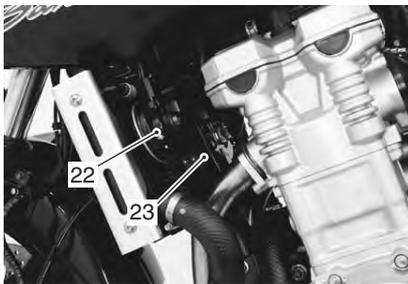
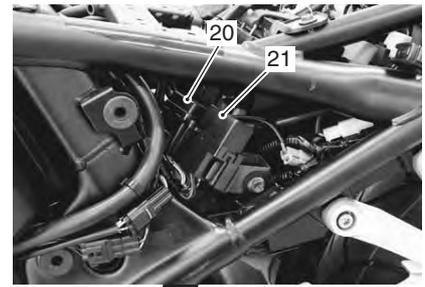
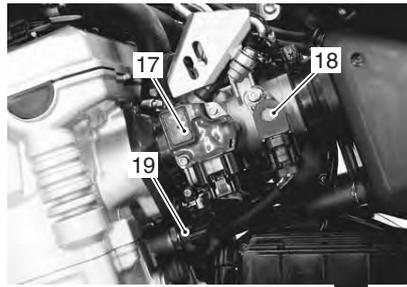
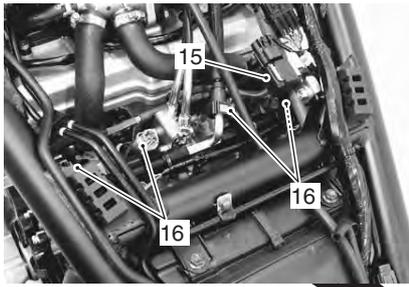
B718H10103001



I718H1010014-03

1. Fuel pump relay	6. Fuel level gauge	11. Mode selection switch coupler
2. Starter relay/Main fuse	7. Ignition coil/plug cap	12. ISC valve
3. Cooling fan relay	8. PAIR control solenoid valve	13. STV actuator
4. Battery	9. TO sensor	14. Oil pressure switch
5. Fuel pump	10. ECM	

0A-9 General Information:



I718H1010015-04

15. IAP sensor (No.1)	21. Turn signal/side-stand relay	27. GP switch
16. Fuel injector	22. Horn	28. Starter motor
17. IAP/TP/IAT sensor	23. Cooling fan	29. Speed sensor
18. STP sensor	24. CKP sensor	30. HO2 sensor
19. ECT sensor	25. Generator	31. Side-stand switch
20. Fuse box	26. Regulator/rectifier	

Specifications

Specifications (GSF1250/S)

B718H10107002

NOTE

These specifications are subject to change without notice.

Dimensions and dry mass

Item	Specification	Remark
Overall length	2 130 mm (83.9 in)	
Overall width	790 mm (31.1 in)	
Overall height	1 095 mm (43.1 in)	GSF1250
	1 235 mm (48.6 in)	GSF1250S
Wheelbase	1 485 mm (58.5 in)	
Ground clearance	135 mm (5.3 in)	
Seat height	785/805 mm (30.9/31.7 in)	Low/High
Dry mass	222 kg (489 lbs)	GSF1250
	225 kg (496 lbs)	GSF1250S

Engine

Item	Specification	Remark
Type	4-stroke, liquid-cooled, DOHC	
Number of cylinders	4	
Bore	79.0 mm (3.110 in)	
Stroke	64.0 mm (2.519 in)	
Displacement	1 255 cm ³ (76.6 cu. in)	
Compression ratio	10.5 : 1	
Carburetor	Fuel injection	
Air cleaner	Non-woven fabric element	
Starter system	Electric	
Lubrication system	Wet sump	
Idle speed	1 200 ± 100 r/min	

Drive train

Item	Specification	Remark
Clutch	Wet multi-plate type	
Transmission	6-speed constant mesh	
Gearshift pattern	1-down, 5-up	
Primary reduction ratio	1.537 (83/54)	
Gear ratios	Low	3.076 (40/13)
	2nd	2.058 (35/17)
	3rd	1.550 (31/20)
	4th	1.304 (30/23)
	5th	1.160 (29/25)
	Top	1.071 (30/28)
Final reduction ratio	2.388 (43/18)	
Drive chain	RK GB50GSVZ3, 118 links	

0A-11 General Information:

Chassis

Item	Specification	Remark
Front suspension	Telescopic, coil spring, oil damped	
Rear suspension	Link type, coil spring, oil damped	
Front suspension stroke	130 mm (5.1 in)	
Rear wheel travel	136 mm (5.4 in)	
Steering angle	35° (right & left)	
Caster	25° 20'	
Tail	104 mm (4.09 in)	
Turning radius	2.8 m (9.2 ft)	
Front brake	Disc brake, twin	
Rear brake	Disc brake	
Front tire size	120/70ZR17M/C (58W), tubeless	
Rear tire size	180/55ZR17M/C (73W), tubeless	

Electrical

Item	Specification	Remark
Ignition type	Electronic ignition (Transistorized)	
Ignition timing	8° B.T.D.C. at 1 200 r/min	
Spark plug	NGK CR7E or DENSO U22ESR-N	
Battery	12 V 36 kC (10 Ah)/10 HR	
Generator	Three-phase A.C. generator	
Main fuse	30 A	
Fuse	10/10/15/15/10/15 A	
Headlight	12 V 60/55 W (H4)	GSF1250
	12 V 55 W (H7) + 12 V 55 W (H7)	GSF1250S
Position light	12 V 5 W	GSF1250
	12 V 5 W x 2	GSF1250S
Turn signal light	12 V 21 W	
Brake light/Taillight	12 V 21/5 W	
License plate light	12 V 5 W	
Speedometer light	LED	
Tachometer light	LED	
Neutral indicator light	LED	
High beam indicator light	LED	
Turn signal indicator light	LED	
Oil pressure indicator light	LED	
Coolant temperature indicator light	LED	
Fuel injection indicator light	LED	

Capacities

Item	Specification	Remark
Fuel tank	Including reserve	18.5 L (4.9/4.1 US/Imp gal)
		19.0 L (5.0/4.2 US/Imp gal)
Engine oil	Oil change	3 000 ml (3.2/2.6 US/Imp qt)
	With filter change	3 500 ml (3.7/3.1 US/Imp qt)
	Overhaul	3 700 ml (3.9/3.3 US/Imp qt)
Coolant	3.3 L (3.5/2.9 US/Imp gal)	

Specifications (GSF1250A/SA)

B718H10107001

NOTE

These specifications are subject to change without notice.

Dimensions and dry mass

Item	Specification	Remark
Overall length	2 130 mm (83.9 in)	
Overall width	790 mm (31.1 in)	
Overall height	1 095 mm (43.1 in)	GSF1250A
	1 235 mm (48.6 in)	GSF1250SA
Wheelbase	1 485 mm (58.5 in)	
Ground clearance	135 mm (5.3 in)	
Seat height	785/805 mm (30.9/31.7 in)	Low/High
Dry mass	226 kg (498 lbs)	GSF1250A
	229 kg (504 lbs)	GSF1250SA

Engine

Item	Specification	Remark
Type	4-stroke, liquid-cooled, DOHC	
Number of cylinders	4	
Bore	79.0 mm (3.110 in)	
Stroke	64.0 mm (2.519 in)	
Displacement	1 255 cm ³ (76.6 cu. in)	
Compression ratio	10.5 : 1	
Carburetor	Fuel injection	
Air cleaner	Non-woven fabric element	
Starter system	Electric	
Lubrication system	Wet sump	
Idle speed	1 200 ± 100 r/min	

Drive train

Item	Specification	Remark
Clutch	Wet multi-plate type	
Transmission	6-speed constant mesh	
Gearshift pattern	1-down, 5-up	
Primary reduction ratio	1.537 (83/54)	
Gear ratios	Low	3.076 (40/13)
	2nd	2.058 (35/17)
	3rd	1.550 (31/20)
	4th	1.304 (30/23)
	5th	1.160 (29/25)
	Top	1.071 (30/28)
Final reduction ratio	2.388 (43/18)	
Drive chain	RK GB50GSVZ3, 118 links	

0A-13 General Information:

Chassis

Item	Specification	Remark
Front suspension	Telescopic, coil spring, oil damped	
Rear suspension	Link type, coil spring, oil damped	
Front suspension stroke	130 mm (5.1 in)	
Rear wheel travel	136 mm (5.4 in)	
Steering angle	35° (right & left)	
Caster	25° 20'	
Tail	104 mm (4.09 in)	
Turning radius	2.8 m (9.2 ft)	
Front brake	Disc brake, twin	
Rear brake	Disc brake	
Front tire size	120/70ZR17M/C (58W), tubeless	
Rear tire size	180/55ZR17M/C (73W), tubeless	

Electrical

Item	Specification	Remark
Ignition type	Electronic ignition (Transistorized)	
Ignition timing	8° B.T.D.C. at 1 200 r/min	
Spark plug	NGK CR7E or DENSO U22ESR-N	
Battery	12 V 36 kC (10 Ah)/10 HR	
Generator	Three-phase A.C. generator	
Main fuse	30 A	
Fuse	10/10/15/15/15/10/20/15 A	
Headlight	12 V 60/55 W (H4)	GSF1250A
	12 V 55 W (H7) + 12 V 55 W (H7)	GSF1250SA
Position light	12 V 5 W	GSF1250A
	12 V 5 W x 2	GSF1250SA
Turn signal light	12 V 21 W	
Brake light/Taillight	12 V 21/5 W	
License plate light	12 V 5 W	
Speedometer light	LED	
Tachometer light	LED	
Neutral indicator light	LED	
High beam indicator light	LED	
Turn signal indicator light	LED	
Oil pressure indicator light	LED	
Coolant temperature indicator light	LED	
Fuel injection indicator light	LED	
ABS indicator light	LED	

Capacities

Item	Specification	Remark
Fuel tank	18.5 L (4.9/4.1 US/Imp gal)	E-33
	19.0 L (5.0/4.2 US/Imp gal)	Others
Engine oil	Oil change	3 000 ml (3.2/2.6 US/Imp qt)
	With filter change	3 500 ml (3.7/3.1 US/Imp qt)
	Overhaul	3 700 ml (3.9/3.3 US/Imp qt)
Coolant	3.3 L (3.5/2.9 US/Imp gal)	