MODEL APPLICATION

Year	Model	Beginning Frame No.
2002	ZX1200-B1	JKAZX9B1□2A000001 or JKAZXT20ABA035001 or JKAZX9B1 □2A035001 or JKAZX9B1□2A000001 or ZXT20B-000001
2003	ZX1200-B2	JKAZX9B1□3A008001 or JKAZXT20ABA041001 or ZXT20B-008001
2004	ZX1200-B3	JKAZX9B1□4A012001 or JKAZXT20ABA045001 or ZXT20B-012001

□:This digit in the frame number changes from one machine to another.

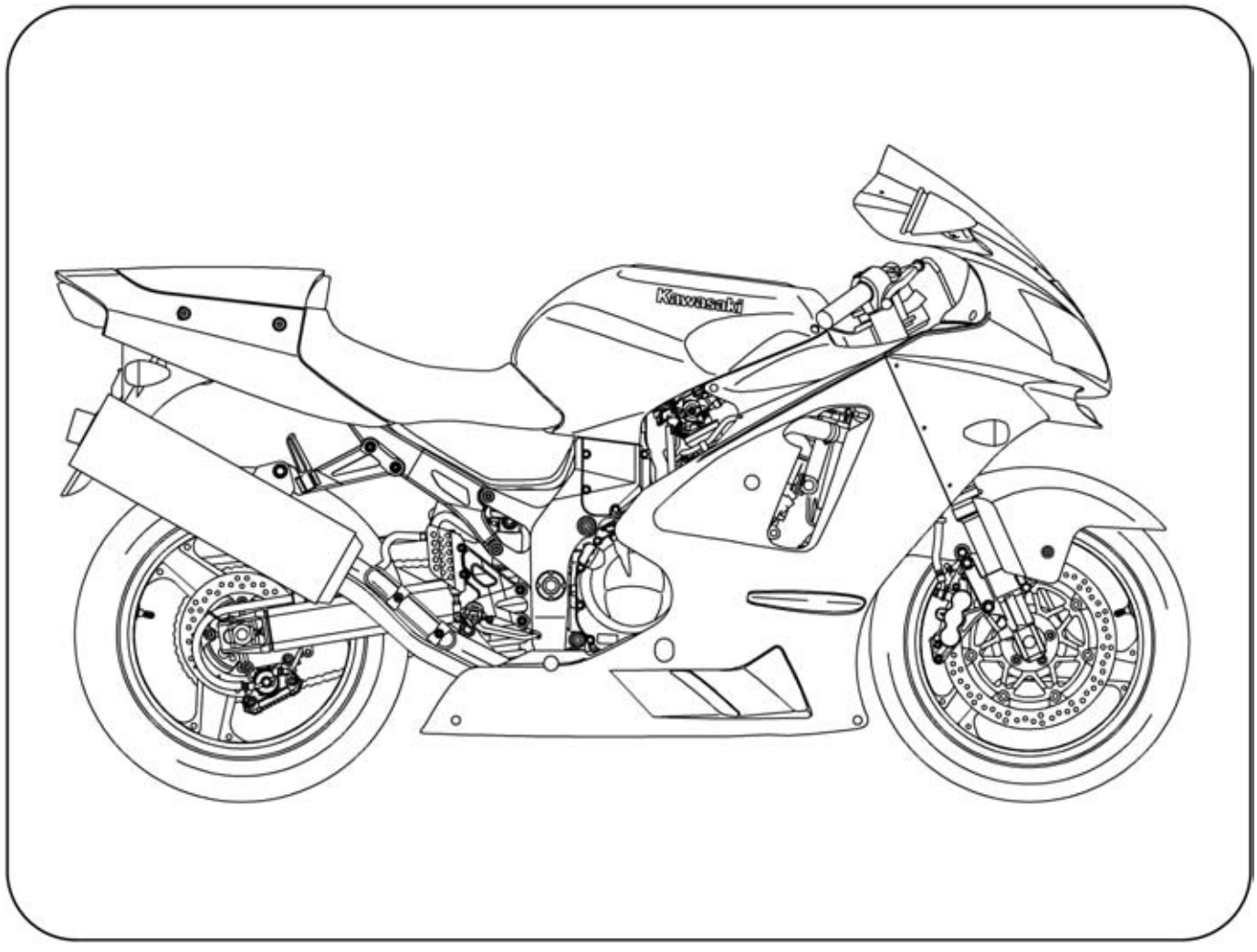
Kawasaki
KAWASAKI HEAVY INDUSTRIES, LTD.
Consumer Products & Machinery Company

Part No.99924-1278-03

Printed in Japan

Kawasaki

Ninja ZX-12R



Motorcycle Service Manual

Quick Reference Guide

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 this manual, the product is divited into its major systems and these systems make up the manual's chapters. 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.

For example, if you want ignition coil information, use the Quick Reference Guide to locate the Electrical System chapter. Then, use the Table of Contents on the first page of the chapter to find the Ignition Coil 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

Table of Contents

Before Servicing

Before starting to service a motorcycle, careful reading of the applicable section is recommended to eliminate unnecessary work. Photographs, diagrams, notes, cautions, warnings, and detailed descriptions have been included wherever necessary. Nevertheless, even a detailed account has limitations, a certain amount of basic knowledge is also required for successful work.

Especially note the following:

(1) Dirt

Before removal and disassembly, clean the motorcycle. Any dirt entering the engine or other parts will work as an abrasive and shorten the life of the motorcycle. For the same reason, before installing a new part, clean off any dust or metal filings.

(2) Battery Cables

Disconnect the ground (–) cable from the battery before performing any disassembly operations on the motorcycle. This prevents the engine from accidentally turning over while work is being carried out, sparks from being generated while disconnecting the leads from electrical parts, as well as damage to the electrical parts themselves. For reinstallation, first connect the positive cable to the positive (+) terminal of the battery.

(3) Installation, Assembly

Generally, installation or assembly is the reverse of removal or disassembly. But if this Service Manual has installation or assembly procedures, follow them. Note parts locations and cable, lead, and hose routing during removal or disassembly so they can be installed or assembled in the same way. It is preferable to mark and record the locations and routing as much as possible.

(4) Tightening Sequence

Generally, when installing a part with several bolts, nuts, or screws, start them all in their holes and tighten them to a snug fit. Then tighten them evenly in a cross pattern. This is to avoid distortion of the part and/or causing gas or oil leakage. Conversely when loosening the bolts, nuts, or screws, first loosen all of them by about a quarter turn and then remove them. Where there is a tightening sequence indication in this Service Manual, the bolts, nuts, or screws must be tightened in the order and method indicated.

(5) Torque

When torque values are given in this Service Manual, use them. Either too little or too much torque may lead to serious damage. Use a good quality, reliable torque wrench.

(6) Force

Common sense should dictate how much force is necessary in assembly and disassembly. If a part seems especially difficult to remove or install, stop and examine what may be causing the problem. Whenever tapping is necessary, tap lightly using a wooden or plastic-faced mallet. Use an impact driver for screws (particularly for the removal of screws held by a locking agent) in order to avoid damaging the screw heads.

(7) Edges

Watch for sharp edges, especially during major engine disassembly and assembly. Protect your hands with gloves or a piece of thick cloth when lifting the engine or turning it over.

(8) High-Flash Point Solvent

A high-flash point solvent is recommended to reduce fire danger. A commercial solvent commonly available in North America is Stoddard solvent (generic name). Always follow manufacturer and container directions regarding the use of any solvent.

(9) Gasket, O-ring

Do not reuse a gasket or O-ring once it has been in service. The mating surfaces around the gasket should be free of foreign matter and perfectly smooth to avoid oil or compression leakage.

(10) Liquid Gasket, Non-Permanent Locking Agent

Follow manufacturer's directions for cleaning and preparing surfaces where these compounds will be used. Apply sparingly. Excessive amounts may block engine oil passages and cause serious damage. An example of non-permanent locking agent commonly available in North America is Loctite Lock'n Seal (Blue).

(11) Press

A part installed using a press or driver, such as a wheel bearing, should first be coated with oil on its outer or inner circumference so that it will go into place smoothly.

Before Servicing

(12)Ball Bearing and Needle Bearing

Do not remove a ball bearing or a needle bearing unless it is absolutely necessary. Replace any ball or needle bearings that were removed with new ones, as removal generally damages bearings. Install bearings with the marked side facing out applying pressure evenly with a suitable driver. Only press on the race that forms the press fit with the base component to avoid damaging the bearings. This prevents severe stress on the balls or needles and races, and prevent races and balls or needles from being dented. Press a ball bearing until it stops at the stopper in the hole or on the shaft.

(13)Oil Seal and Grease Seal

Replace any oil or grease seals that were removed with new ones, as removal generally damages seals. When pressing in a seal which has manufacturer's marks, press it in with the marks facing out. Seals should be pressed into place using a suitable driver, which contacts evenly with the side of seal, until the face of the seal is even with the end of the hole. Before a shaft passes through a seal, apply little high temperature grease on the lips to reduce rubber to metal friction.

(14)Circlip, Retaining Ring, and Cotter Pin

Replace any circlips and retaining rings, and cotter pins that were removed with new ones, as removal weakens and deforms them. When installing circlips and retaining rings, take care to compress or expand them only enough to install them and no more.

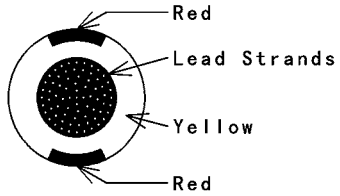
(15)Lubrication

Engine wear is generally at its maximum while the engine is warming up and before all the rubbing surfaces have an adequate lubricative film. During assembly, oil or grease (whichever is more suitable) should be applied to any rubbing surface which has lost its lubricative film. Old grease and dirty oil should be cleaned off. Deteriorated grease has lost its lubricative quality and may contain abrasive foreign particles.

Don't use just any oil or grease. Some oils and greases in particular should be used only in certain applications and may be harmful if used in an application for which they are not intended. This manual makes reference to molybdenum disulfide grease (MoS_2) and molybdenum disulfide oil in the assembly of certain engine and chassis parts. The molybdenum disulfide oil is a mixture of engine oil and molybdenum disulfide grease with a weight ratio (10 : 1), which can be made in your work shop. Always check manufacturer recommendations before using such special lubricants.

(16)Electrical Leads

All the electrical leads are either single-color or two-color and, with only a few exceptions, must be connected to leads of the same color. On any of the two-color leads there is a greater amount of one color and a lesser amount of a second color, so a two-color lead is identified by first the primary color and then the secondary color. For example, a yellow lead with thin red stripes is referred to as a "yellow/red" lead; it would be a "red/yellow" lead if the colors were reversed to make red the main color.

Lead(cross-section)	Color Indicated on the Lead	Color Indicated on the Wiring Diagram
	Yellow/Red	Y/R

GB02001BWI C

(17)Replacement Parts

When there is a replacement instruction, replace these parts with new ones every time they are removed. These replacement parts will be damaged or lose their original function once removed.

Before Servicing

(18)Inspection

When parts have been disassembled, visually inspect these parts for the following conditions or other damage. If there is any doubt as to the condition of them, replace them with new ones.

Abrasion	Crack	Hardening	Warp
Bent	Dent	Scratch	Wear
Color change	Deterioration	Seizure	

(19)Specifications

Specification terms are defined as follows:

"Standards" show dimensions or performances which brand-new parts or systems have.

"Service Limits" indicate the usable limits. If the measurement shows excessive wear or deteriorated performance, replace the damaged parts.

(20)Instrument

Use a meter that has enough accuracy for an accurate measurement.

Read the manufacturer’s instructions thoroughly before using the meter.

Incorrect values may lead to improper adjustments.

Model Identification

ZX1200-B1 Left Side View

ZX1200-B1 Right Side View

General Specifications

Items	ZX1200-B1 ~ B3
Dimensions	
Overall Length	2 085 mm (82.09 in.)
Overall Width	740 mm (29.13 in.)
Overall Height	1 200 mm (47.24 in.)
Wheelbase	1 450 mm (57.09 in.)
Road Clearance	120 mm (4.72 in.)
Seat Height	820 mm (32.28 in.)
Dry Mass	210 kg (463 lb)
Curb Mass:	
Front	125 kg (276 lb)
Rear	121 kg (267 lb)
Fuel Tank Capacity	19.0 L (5.0 US gal)
Performance	
Minimum Turning Radius	3.0 m (9.8 ft)
Engine	
Type	4-stroke, DOHC, 4-cylinder
Cooling System	Liquid-cooled
Bore and Stroke	83.0 × 55.4 mm (3.27 × 2.18 in.)
Displacement	1 199 mL (73.16 cu in.)
Compression Ratio	12.2
Maximum Horsepower	(H) 131 kW (178 PS) @9 500 r/min (rpm), (AU) ZX1200-B1/B2: 130 kW (177 PS) @10 500 r/min (rpm), (AU) ZX1200-B3: 131 kW (178 PS) @10 500 r/min (rpm), (HR) 78.2 kW (106.4 PS) @8 500 r/min (rpm), (MY) ZX1200-B1/B2: 131 kW (178 PS) @ 9 500 r/min (rpm), (MY) ZX1200-B3: 128 kW (174 PS) @9 500 r/min (rpm) (US), (CA) – – –
Maximum Torque	(H, AU) 134 N·m (13.7 kgf·m, 99 ft·lb) @7 500 r/min (rpm), (MY) ZX1200-B1/B2: 134 N·m (13.7 kgf·m, 99 ft·lb) @7 500 r/min (rpm), (MY) ZX1200-B3: 130 N·m (13.3 kgf·m, 96 ft·lb) @7 500 r/min (rpm), (HR) 111 N·m (11.3 kgf·m, 82 ft·lb) @5 000 r/min (rpm), (US), (CA) – – –
Carburetion System	FI (Fuel Injection), ZX1200-B1/B2: MIKUNI 46 EIS × 4 ZX1200-B3: KEIHIN (ϕ46 × 4)
Starting System	Electric starter
Ignition System	Battery and coil (transistorized)
Timing Advance	Electronically advanced (digital igniter in ECU)
Ignition Timing	10° BTDC @1 000 r/min (rpm)
Spark Plugs	NGK CR9EKPA
Cylinder Numbering Method	Left to right, 1-2-3-4
Firing Order	1-2-4-3

General Specifications

Items	ZX1200-B1 ~ B3
Valve Timing:	
Inlet:	
Open	46° BTDC
Close	74° ABDC
Duration	300°
Exhaust:	
Open	69° BBDC
Close	45° ATDC
Duration	294°
Lubrication System	Forced lubrication (wet sump with cooler)
Engine Oil:	
Grade	API SE, SF or SG API SH or SJ with JASO MA
Viscosity	SAE 10W-40
Capacity	3.6 L (3.8 US qt)
Drive Train	
Primary Reduction System:	
Type	Gear
Reduction Ratio	1.596 (83/52)
Clutch Type	Wet, multi disc
Transmission:	
Type	6-speed, constant mesh, return shift
Gear Ratios:	
1st	2.429 (34/14)
2nd	1.824 (31/17)
3rd	1.440 (36/25)
4th	1.250 (30/24)
5th	1.130 (26/23)
6th	1.033 (31/30)
Final Drive System:	
Type	Chain drive
Reduction Ratio	2.556 (46/18)
Overall Drive Ratio	4.215 @Top gear
Frame	
Type	Press backbone
Caster (Rake Angle)	23.5°
Trail	98 mm (3.86 in.)
Front Tire:	
Type	Tubeless
Size	120/70 ZR17 M/C (58W)
Rear Tire:	
Type	Tubeless
Size	200/50 ZR17 M/C (75W)

General Specifications

Items	ZX1200-B1 ~ B3
Front Suspension:	
Type	Telescopic fork (upside-down)
Wheel Travel	120 mm (4.72 in.)
Rear Suspension:	
Type	Swingarm (uni-trak)
Wheel Travel	140 mm (5.51 in.)
Brake Type:	
Front	Dual discs
Rear	Single disc
Electrical Equipment	
Battery	12 V 12 Ah
Headlight:	
Type	Semi-sealed beam
Bulb	12 V 60/55 W (quartz-halogen) × 2
Tail/Brake Light	12 V 5/21 W × 2
Alternator:	
Type	Three-phase AC
Rated Output	31 A/14 V @5 000 r/min (rpm)

Specifications are subject to change without notice, and may not apply to every country.
AU: Australian Model
US: U.S.A. Model
CA: Canadian Model
MY: Malaysian Model
HR: WVTA Approval Model, Honeycomb Catalytic Converter (Restricted Power)
H: WVTA Approval Model, Honeycomb Catalytic Converter

Technical Information – KAWASAKI LOW EXHAUST EMISSION SYSTEM

Since the emission regulations become more severe, Kawasaki has adopted a type of simplified KAWASAKI LOW EXHAUST EMISSION SYSTEM (KLEEN), which have no catalyst protection system, according to each regulation of different countries.

The muffler with built-in catalyst has the same durability as the conventional muffler, however, do not use leaded gasoline and do not coast with the ignition system OFF. Running the engine without ignition damages catalyst.

Refer to the ZX900E Service Manual (Part No. 99924-1255) for more information about the KLEEN (theory, maintenance, and handling precautions), including the secondary air injection system.

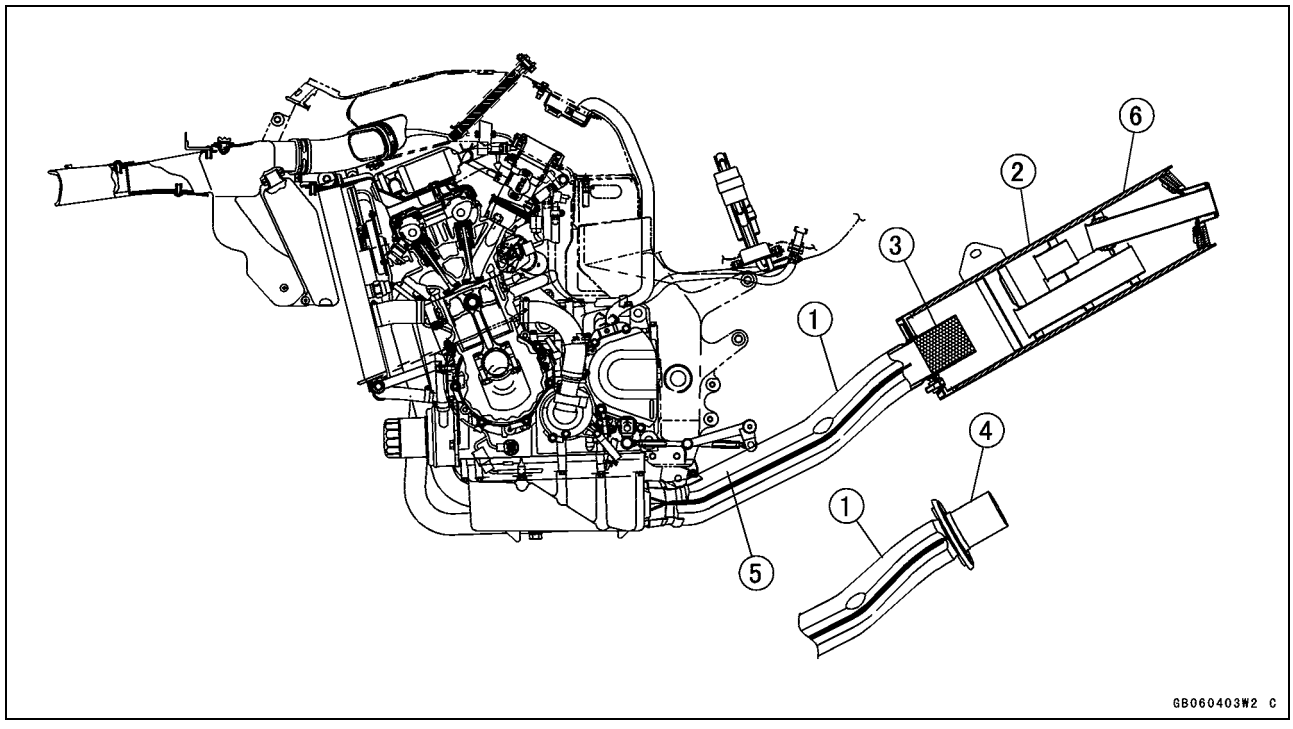
Honeycomb Type Catalytic Converter

○The converter is a three-way catalytic converter, and its surface is covered with alumina upon which platinum and rhodium are applied, and has a cylindrical metalic honeycomb structure made by bending a corrugated sheet and a flat sheet of stainless steel into a spiral of increasing diameter. The honeycomb structure is convenient for the catalytic converter because it has a large surface area but small size to react effectively and has low exhaust resistance. In addition, its inherent strength helps resist vibration, and has simple structure welded directly on the silencer.

○Generally, the temperature of the exhaust gas must be higher than activation temperature, so the converters are installed in the exhaust manifold rear end where the temperature of exhaust gas is still high. And, the converters will be activated even under low load conditions.

○After the exhaust gas is diluted with the secondary air injection, the catalytic converter works well because of rich oxygen to reduce CO, HC, and NO_x. Accordingly, we can keep the exhaust gas emission within regulation.

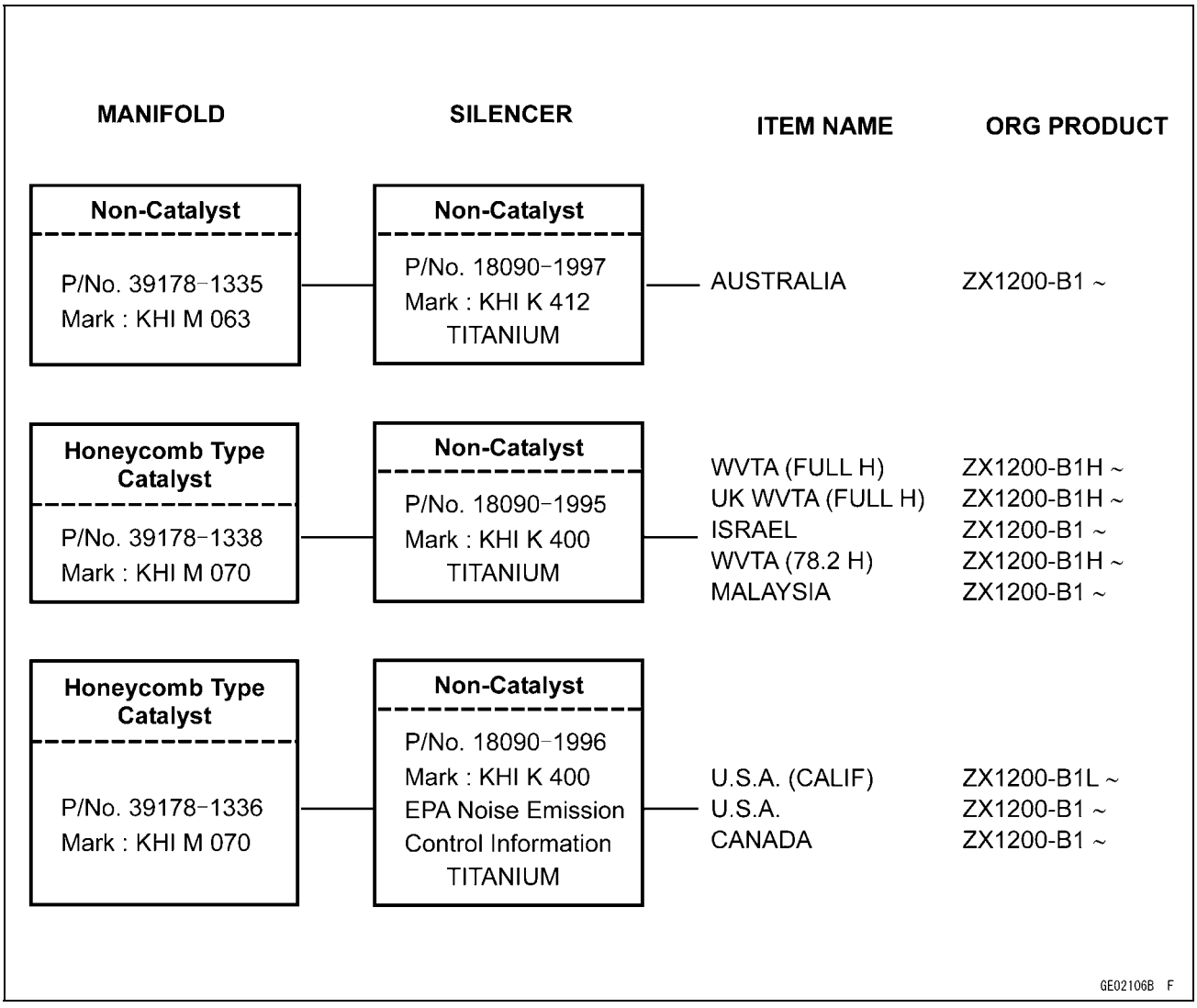
○This type of converter works more efficiently as a three-way catalytic converter to reduce CO, HC, and NO_x than the pipe type catalytic converter because of its more and denser catalysts.



1. Manifold
2. Silencer
3. Honeycomb Type Catalyst
4. Non-Catalyst
5. Mark for Manifold
6. Mark for Silencer

Technical Information – KAWASAKI LOW EXHAUST EMISSION SYSTEM

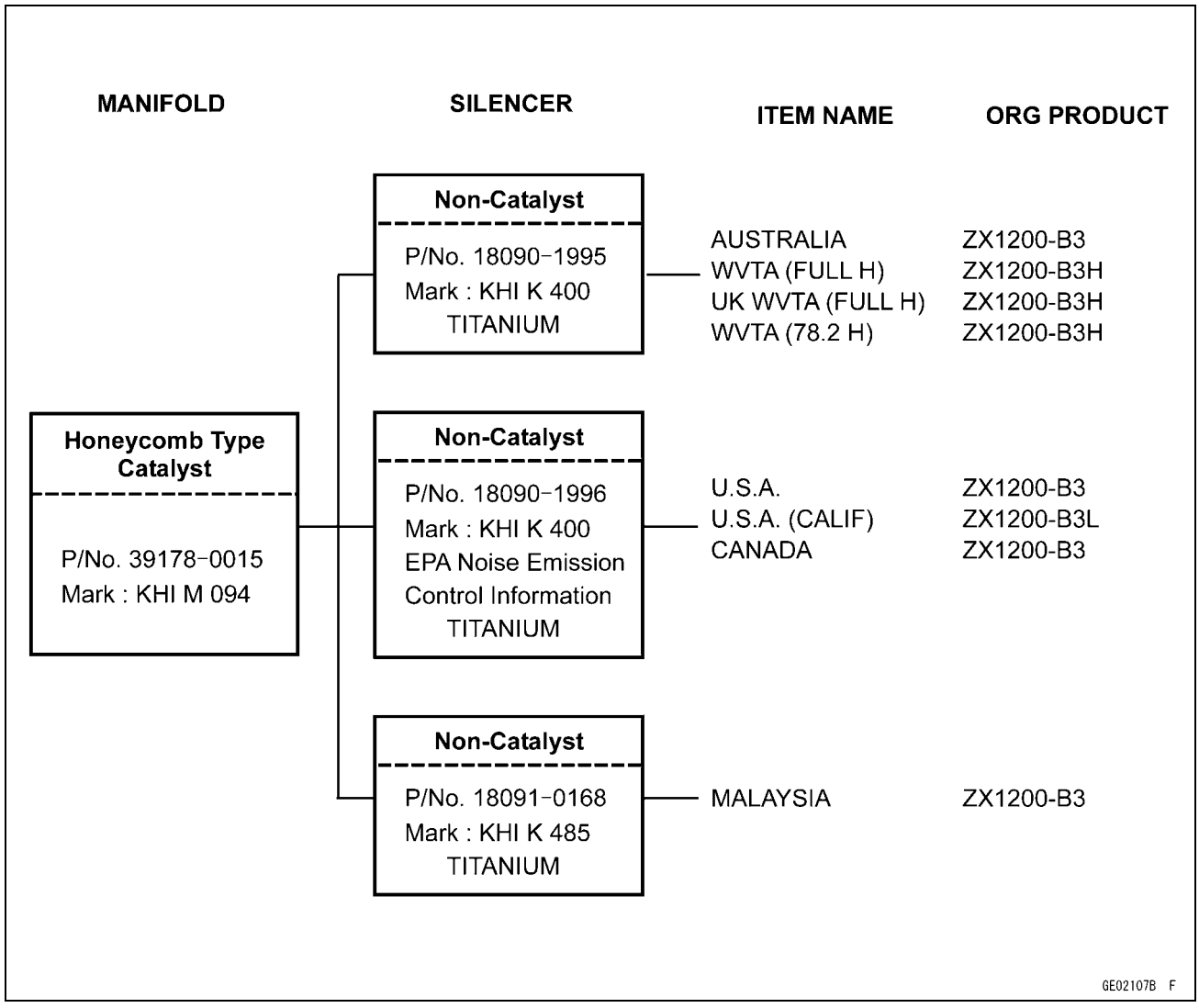
Exhaust System (ZX1200-B1/B2)



78.2: Horsepower 78.2 kW (106.3 ps)
Full: Full Power
H: Honeycomb Type Catalyst
UK: United Kingdom Model

Technical Information – KAWASAKI LOW EXHAUST EMISSION SYSTEM

Exhaust System (ZX1200-B3)



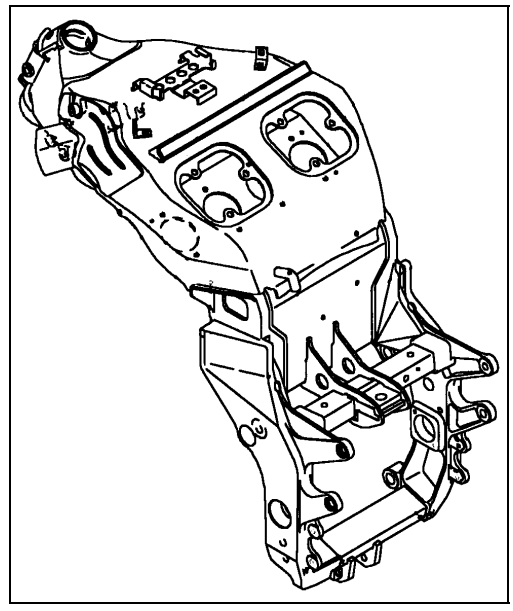
78.2: Horsepower 78.2 kW (106.3 ps)
Full: Full Power
H: Honeycomb Type Catalyst
UK: United Kingdom Model

Technical Information – Monocoque Frame

Why a monocoque? Like all breakthrough innovations, the choice appears quite obvious after the fact. When large-section aluminium spars are wrapped around an already wide, large-displacement in-line Four engine, the resulting package must of necessity be wide. The ZX-12R's all-aluminium box -section monocoque chassis eliminates these perimeter spars in favor of a large box section running over the top of the engine.

This frame design surpasses the levels of chassis stiffness and strength associated with conventional aluminium twin-beam frames, but with considerably less breadth. Without the twin beams or other frame elements running around the side of the engine, the fairing can be much narrower, resulting in a much slimmer overall package and significantly better aerodynamics. Further, in a radical departure, the hollow structure also doubles as an airbox for the Ram Air system, eliminating the need for a space-consuming, conventional airbox.

And ultimately, it is the synergy of combining a compact, massively powerful engine with this super stiff and slim chassis structure that explains much of the ZX-12R's superlative high-speed performance.



- All-new frame-integrated Ram Air system adds considerable horsepower in the higher speed ranges.
- Monocoque frame allows for the use of perfectly straight, highly efficient inlet ports.
- Using the frame backbone as an airbox saves space and creates a very efficient airbox.
- Battery mounts inside the frame and the battery cover is a structural element.
- Revolutionary new all-aluminum monocoque frame for high rigidity and lightweight.
- Huge box section and heat-freated cast steering head/swingarm pivot areas realize an extremely stiff structure and contribute to the ZX-12R's superb high-speed stability and nimble, super sport handling performance.
- By eliminating the dual large-section beams of conventional aluminum frames, this frame design makes possible a much narrower and more compact overall package and greatly improves aerodynamics.

Technical Information – Spark Plug

ZX1200-B1 is equipped with the Kawasaki recommended spark plug (NGK CR9EKPA). By using the Kawasaki recommended spark plug, the idling stability, the fuel consumption improvement, and the maintenance free spark plug is planed.

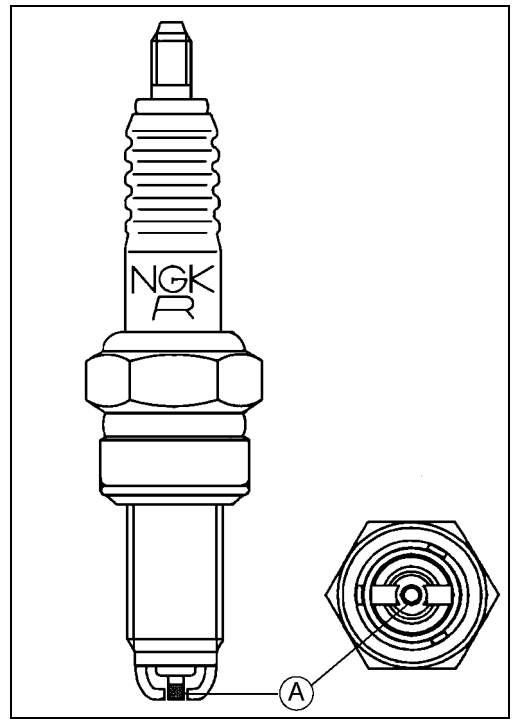
This spark plug is calculated 3 or 4 times as durable as the usual one (NGK CR9EK).

Feature

1. This spark plug is more superior to the usual one with the ignition for the ignition point protruding.
2. Further, this spark plug is superior to the usual one with the endurance for the Pt alloy [A] covering around the center electrode and for the opposed area improvement of the side electrodes.

Specification

1. Standard Spark Plug CR9EKPA, two side electrodes, M10 threads
2. Hotter Spark Plug CR8EKPA, two side electrodes, M10 threads



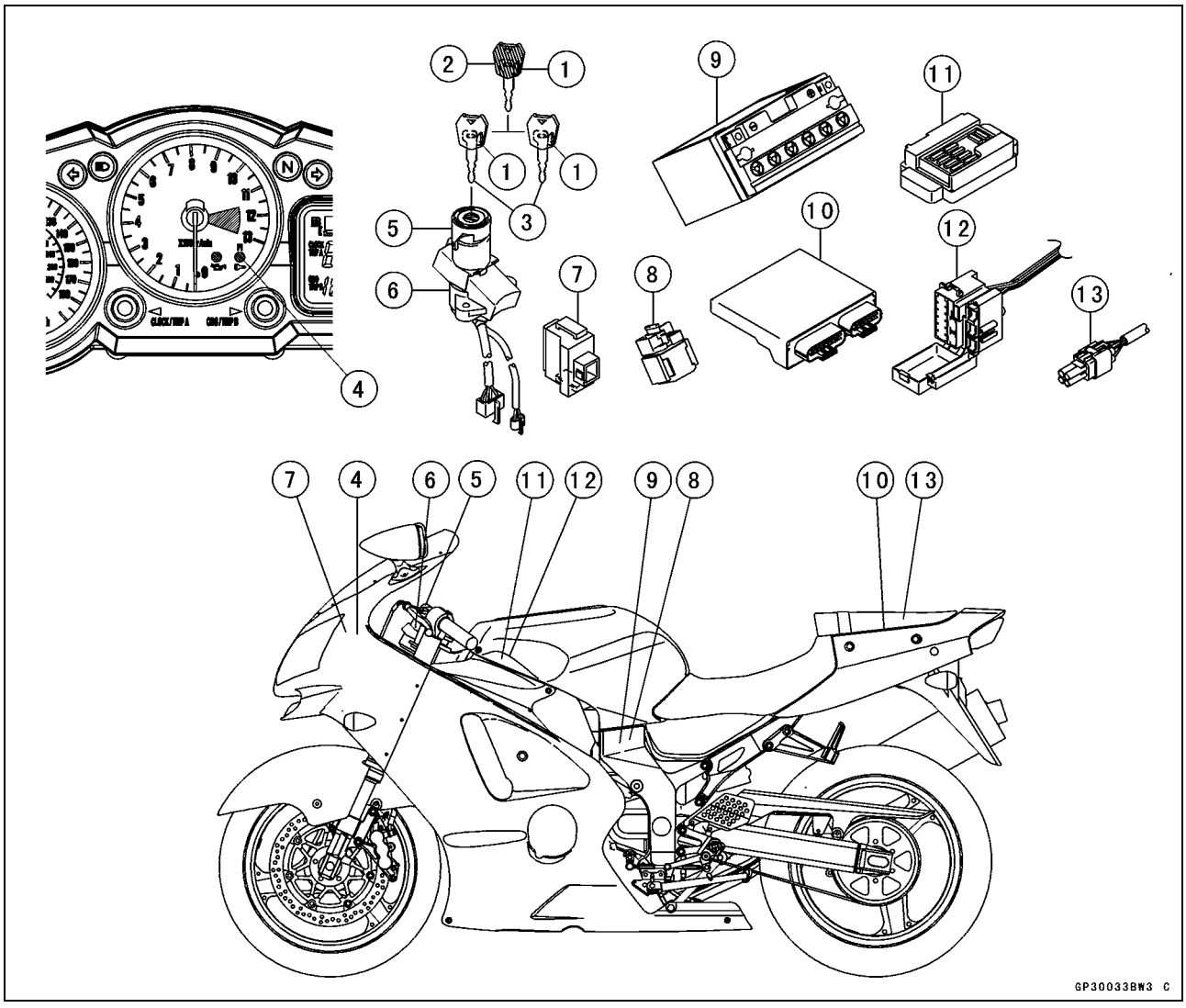
CAUTION
Use only the recommender spark plug. Do not use other spark plug, even though it may fit, because it could cause the engine failure of the idling stability, etc.

Technical Information – Immobilizer System (ZX1200-B3)

Overview

This system provides a theft proof device by means of matching a code between the inbuilt key transponder and the ECU (Electronic Control Unit). If this code does not match, the fuel pump, injectors, ignition system and sub-throttle valve actuator will not operate and the engine will not start.

Related Parts and Function



1. Transponder (Inside Keys)
2. Master Key
3. User Keys
4. FI Indicator Light
5. Immobilizer Antenna
6. Ignition Switch
7. Immobilizer Amplifier
8. Starter Relay
9. Battery
10. Electronic Control Unit (ECU)
11. Junction Box
12. Fuse Box
13. Immobilizer/Kawasaki Diagnostic System Connector

Master Key (1 piece)

The master key (colored red) has an inbuilt transponder, containing a master key code. These codes are unique to each key. This code and an additional two user key codes must be registered in the ECU for the system to operate. The master key is necessary when registering user keys and should not be used as the main key to start the motorcycle except in emergencies (loss or damage of user keys). It should be kept in a safe place.

Technical Information – Immobilizer System (ZX1200-B3)

Transponder (in Keys)

The transponder (made by Texas Instruments, Inc.) has an integrated circuit with a unique code that also calculates data sent by the ECU. When the ignition switch is turned ON, the transponder is excited by the radio wave transmitted from the antenna and then transmits a unique code to the antenna.

User Key (2 pieces)

The user keys (colored black) should be used when riding the motorcycle. These keys have unique codes which differ from the master key. Up to a maximum of five user key codes can be stored by the ECU at any one time. These codes can not be registered to the ECU without firstly registering the master key code.

Antenna

The antenna transmits a radio wave to excite the transponder, receives the code from the transponder and then transmits the code to the ECU through the amplifier.

Ignition Switch

The ignition switch turns the main circuit ON and OFF.

Amplifier

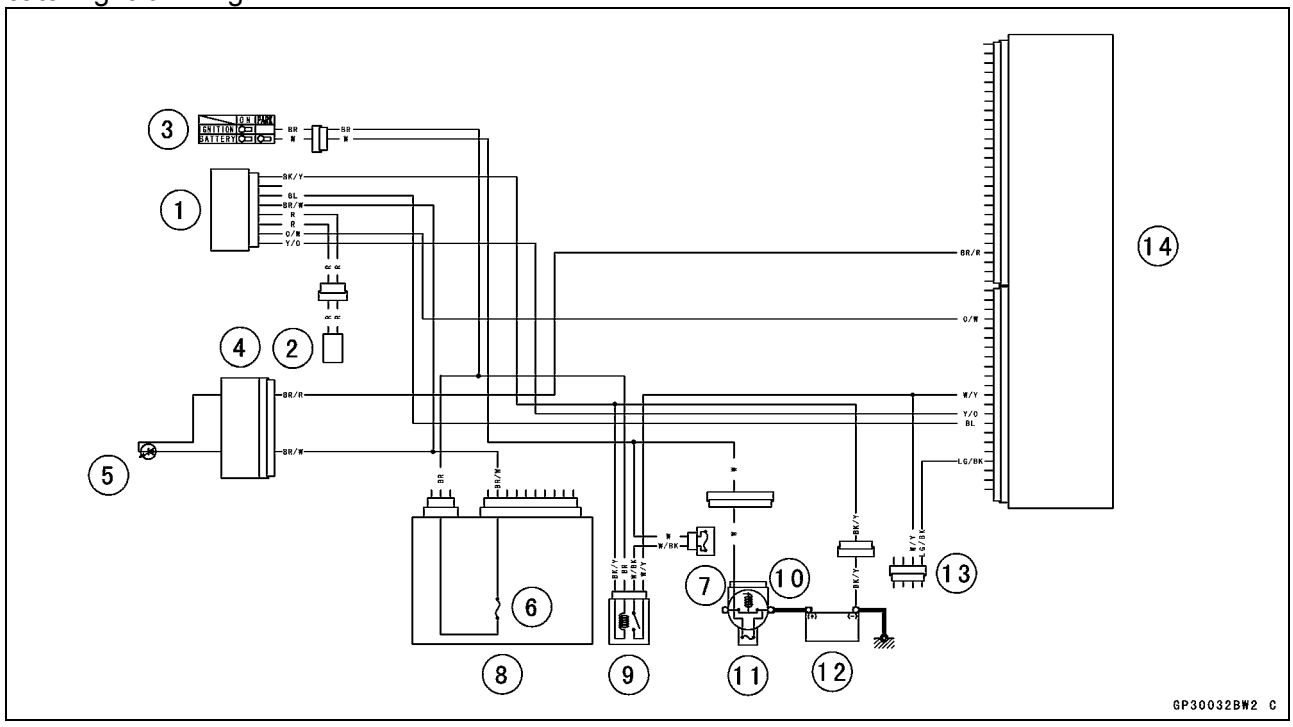
The amplifier (which is approximately the same size as a match box), amplifies signals from the antenna and the ECU.

ECU

The ECU has the capacity to store a maximum of six key code memories (one master and five user keys). The owner can have a total of five user keys at any one time. The master key memory can not be rewritten after initial registration, whereas the user key memories can be rewritten as necessary. When the ECU communicates with the transponder, a cipher generator changes the code every time it is used to avoid cloning.

FI Indicator Light

The condition or the failure of the immobilizer system is indicated by various patterns of the FI indicator light blinking.



1. Immobilizer Amplifier
2. Immobilizer Antenna
3. Ignition Switch
4. Meter Unit
5. FI Indicator Light
6. Ignition Fuse 10 A
7. ECU Fuse 15 A
8. Junction Box
9. ECU Main Relay
10. Starter Relay
11. Main Fuse 30 A
12. Battery 12 V 12 Ah
13. Immobilizer/Kawasaki Diagnostic System Connector
14. Electronic Control Unit (ECU)

Technical Information – Immobilizer System (ZX1200-B3)

Sequence of Operation

1. Turn ON the ignition switch, the ECU, amplifier and antenna start working, and the meter assembly FI indicator lights up.
2. The transponder excited by radio waves transmitted from the antenna receives the ciphered code from the ECU.
3. The transponder transmits the calculated result from the key's unique code to the ECU.
4. The ECU compares this with its memorized code, and if they match the engine can start. At this time, the FI indicator in the meter assembly is switched off.

Torque and Locking Agent

The following tables list the tightening torque for the major fasteners requiring use of a non-permanent locking agent or liquid gasket.

Letters used in the “Remarks” column mean:
L: Apply a non-permanent locking agent to the threads.
M: Apply molybdenum disulfide grease.
MO: Apply molybdenum disulfide oil solution.
O: Apply oil to the threads and seating surface.
S: Tighten the fasteners following the specified sequence.
SS: Apply silicone sealant.
St: Stake the fasteners to prevent loosening.
R: Replacement Parts

The table below, relating tightening torque to thread diameter, lists the basic torque for the bolts and nuts. Use this table for only the bolts and nuts which do not require a specific torque value. All of the values are for use with dry solvent-cleaned threads.

Basic Torque for General Fasteners

Threads dia.(mm)	Torque		
	N·m	kgf·m	ft·lb
5	3.4 ~ 4.9	0.35 ~ 0.50	30 ~ 43 in·lb
6	5.9 ~ 7.8	0.60 ~ 0.80	52 ~ 69 in·lb
8	14 ~ 19	1.4 ~ 1.9	10.0 ~ 13.5
10	25 ~ 34	2.6 ~ 3.5	19.0 ~ 25
12	44 ~ 61	4.5 ~ 6.2	33 ~ 45
14	73 ~ 98	7.4 ~ 10.0	54 ~ 72
16	115 ~ 155	11.5 ~ 16.0	83 ~ 115
18	165 ~ 225	17.0 ~ 23.0	125 ~ 165
20	225 ~ 325	23 ~ 33	165 ~ 240

Fastener	Torque			Remarks
	N·m	kgf·m	ft·lb	
Fuel System (DFI)				
Fuel Level Sensor Bolts	6.9	0.70	61 in·lb	L
Fuel Pump Bolts	6.9	0.70	61 in·lb	L, S
Fuel Hose Clamp Bolts	1.5	0.15	13 in·lb	
Inlet Air Pressure Sensor Bolt	12	1.2	106 in·lb	
Inlet Air Pressure Sensor Bracket Nut	12	1.2	106 in·lb	
Inlet Air Temperature Sensor	7.8	0.80	69 in·lb	
Atmospheric Pressure Sensor Bolts	12	1.2	106 in·lb	
Gear Position Switch Screws	4.0	0.40	35 in·lb	L
Crankshaft Sensor Bolts	6.0	0.60	53 in·lb	
Camshaft Position Sensor Bolt	12	1.2	106 in·lb	
Crankshaft Position Sensor Rotor Bolt	12	1.2	106 in·lb	L
Delivery Pipe Screws (ZX1200-B1/B2)	5.0	0.50	44 in·lb	
Delivery Pipe Screws (ZX1200-B3)	3.4	0.35	30 in·lb	
Nipple Assy Screws	3.5	0.35	31 in·lb	
Cooling System				
Coolant Hose Clamp Screws	2.0	0.20	18 in·lb	

Torque and Locking Agent

Fastener	Torque			Remarks
	N·m	kgf·m	ft·lb	
Coolant Fitting Nozzle (ZX1200-B1/B2)	12	1.2	106 in·lb	L
Coolant Drain Plug (Water Pump)	12	1.2	106 in·lb	
Coolant Drain Plug (Cylinder)	10	1.0	89 in·lb	
Radiator Fan Switch	18	1.8	13	
Water Temperature Sensor	25	2.5	18	SS
Water Pump Impeller Bolt	10	1.0	89 in·lb	
Water Pump Cover Bolts	12	1.2	106 in·lb	
Coolant Pipe Bolt	12	1.2	106 in·lb	
Thermostat Housing Cover Bolts	8.0	0.80	71 in·lb	L
Fitting Bolts	12	1.2	106 in·lb	
Engine Top End				
Spark Plugs	13	1.3	115 in·lb	
Air Suction Valve Cover Bolts	12	1.2	106 in·lb	
Baffle Plate Bolts	10	1.0	89 in·lb	
Cylinder Head Cover Bolts	10	1.0	89 in·lb	
Crankshaft Sensor Cover Bolts	15	1.5	11	L
Camshaft Chain Tensioner Mounting Bolts	10	1.0	89 in·lb	L
Camshaft Cap Bolts	12	1.2	106 in·lb	
Upper Camshaft Chain Guide Bolts	12	1.2	106 in·lb	
Front Camshaft Chain Guide Bolt (Upper)	25	2.5	18	
Front Camshaft Chain Guide Bolt (Lower)	12	1.2	106 in·lb	
Rear Camshaft Chain Guide Bolt	25	2.5	18	
Camshaft Position Sensor Bolt	12	1.2	106 in·lb	
Camshaft Position Sensor Rotor Bolt	12	1.2	106 in·lb	L
Cylinder Head Bolts: M11 First Tighten	23	2.3	17	MO, S (Washer)
Cylinder Head Bolts: M11 Final Tighten	59	6.0	44	MO, S (Washer)
Cylinder Head Bolts: M7	20	2.0	15	S
Cylinder Head Jacket Plugs	22	2.2	16	L
Throttle Body Holder Bolts	12	1.2	106 in·lb	
Muffler Body Connection Nuts	34	3.5	25	
Guard Mounting Bolts	12	1.2	106 in·lb	
Exhaust Pipe Holder Studs	–	–	–	(Stopped)
Clutch				
Clutch Lever Clamp Bolts	7.8	0.80	69 in·lb	S
Clutch Cover Bolts	15	1.5	11	L (2)
Clutch Cover Damper Plate Bolts	7.0	0.70	62 in·lb	L
Clutch Spring Bolts	8.8	0.90	78 in·lb	
Clutch Hub Nut	135	14	100	R
Engine Lubrication System				
Oil Level Gauge Bolts	12	1.2	106 in·lb	

Torque and Locking Agent

Fastener	Torque			Remarks
	N·m	kgf·m	ft·lb	
Oil Filler Plug	1.5 or Hand -Tight	0.15 or Hand -Tight	13 in·lb or Hand -Tight	
Engine Oil Drain Plug	20	2.0	15	
Oil Filter (Cartridge Type)	31	3.2	23	EO, R
Oil Cooler Passage Bolt	78	7.8	58	EO
Oil Cooler Mounting Bolts	25	2.5	18	L
Oil Pan Bolts	15	1.5	11	L (1)
Oil Pipe Holder Bolts	12	1.2	106 in·lb	L
Oil Pressure Relief Valve	15	1.5	11	L
Oil Pressure Switch	15	1.5	11	SS
Oil Pressure Switch Terminal Screw	1.5	0.15	13 in·lb	
Water Pump Impeller Bolt	10	1.0	89 in·lb	
Engine Removal/Installation				
Engine Mounting Bolts and Nuts: M12	59	6.0	44	
Engine Mounting Bolts and Nuts: M8	25	2.5	18	
Upper Engine Mounting Bracket Bolt: M12	59	6.0	44	
Lower Engine Mounting Bracket Bolt: M10	44	4.5	32	
Adjusting Collars	25	2.5	18	
Crankshaft/Transmission				
Breather Plate Bolts	10	1.0	89 in·lb	L
Breather Tube Bracket Bolts	12	1.2	106 in·lb	
Crankcase Bolts: M10	50	5.0	37	MO, S
Upper Crankcase Bolts: M8, L85	28	2.8	21	S
Upper Crankcase Bolts: M7	25	2.5	18	S
Lower Crankcase Bolts: M8, L99	23	2.3	17	S
Lower Crankcase Bolts: M7	20	2.0	15	S
Oil Passage Plugs (Each Side)	20	2.0	15	L
Connecting Rod Big End Nuts	in the text	←	←	←
Timing Rotor Bolt	39	4.0	29	
Starter Torque Limiter Cover Bolts	12	1.2	106 in·lb	L
Oil Pressure Switch	15	1.5	11	SS
Gear Positioning Lever Bolt	10	1.0	89 in·lb	L
Shift Shaft Return Spring Pin (Bolt)	30	3.0	22	L
Speed Sensor Bolt	12	1.2	106 in·lb	L
Shift Drum Bearing Holder Bolt	12	1.2	106 in·lb	L
Shift Drum Bearing Holder Screw	5.4	0.55	48 in·lb	L
Shift Drum Cam Bolt	12	1.2	106 in·lb	L
Balancer Shaft Clamp Lever Bolt	25	2.5	18	L
Balancer Shaft Clamp Bolt	12	1.2	106 in·lb	
Oil Pipe Holder Bolts (Crankshaft Pipe)	12	1.2	106 in·lb	L
Oil Pipe Holder Bolt (Transmission Pipe)	12	1.2	106 in·lb	
Oil Nozzle	2.5	0.25	22 in·lb	St

Torque and Locking Agent

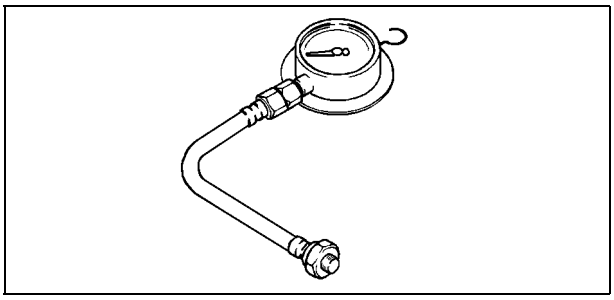
Fastener	Torque			Remarks
	N·m	kgf·m	ft·lb	
Starter Clutch Shaft Bolt	25	2.5	18	L
Starter Clutch Shaft Plate Bolt	12	1.2	106 in·lb	L
Wheels/Tires				
Front Axle Clamp Bolts	20	2.0	15	AL
Front Axle Nut	125	13	92	
Rear Axle Nut	125	13	92	
Rear Sprocket Nuts	59	6.0	44	
Air Valve Cap	0.15	0.015	1.3 in·lb	
Final Drive				
Engine Sprocket Nut	127	13	94	MO
Engine Sprocket Cover Bolts	12	1.2	106 in·lb	
Chain Guide Bolt	12	1.2	106 in·lb	L
Rear Sprocket Nuts	59	6.0	44	
Rear Axle Nut	125	13	92	
Brakes				
Bleed Valves	7.8	0.80	69 in·lb	
Brake Hose Banjo Bolts	25	2.5	18	
Brake Lever Pivot Bolt	1.2	0.12	11 in·lb	Si
Brake Lever Pivot Bolt Locknut	6.0	0.60	52 in·lb	
Front Reservoir Cap Screws	1.5	0.15	13 in·lb	
Front Brake Light Switch Screws	1.2	0.12	11 in·lb	
Front Master Cylinder Clamp Bolts	8.8	0.90	78 in·lb	S
Front Brake Pad Spring Bolts (ZX1200-B1/B2)	3.0	0.30	27 in·lb	
Front Caliper Mounting Bolts	34	3.5	25	
Front Caliper Assembly Bolts	21	2.1	15	
Brake Disc Mounting Bolts	27	2.8	20	L
Front Brake Pad Pins (ZX1200-B3)	15	1.5	11	
Rear Caliper Mounting Bolts	25	2.5	18	
Rear Caliper Assembly Bolts	30	3.0	22	
Brake Pedal Mounting Bolt	8.8	0.90	78 in·lb	
Rear Master Cylinder Mounting Bolts	25	2.5	18	
Rear Master Cylinder Push Rod Locknut	18	1.8	13	
Suspension				
Front Fork Clamp Bolts (Upper)	20	2.0	15	
Front Fork Clamp Bolts (Lower)	20	2.0	15	AL
Front Fork Top Plugs	23	2.3	17	
Piston Rod Nut	28	2.8	21	
Front Fork Bottom Allen Bolts	40	4.0	30	L
Front Axle Clamp Bolts	20	2.0	15	AL
Rear Shock Absorber Bracket Nut	59	6.0	44	
Rear Shock Absorber Nuts (Upper and Lower)	34	3.5	25	
Swingarm Pivot Shaft Nut	125	13	92	
Swingarm Pivot Shaft Lock Nut	98	10	72	

Torque and Locking Agent

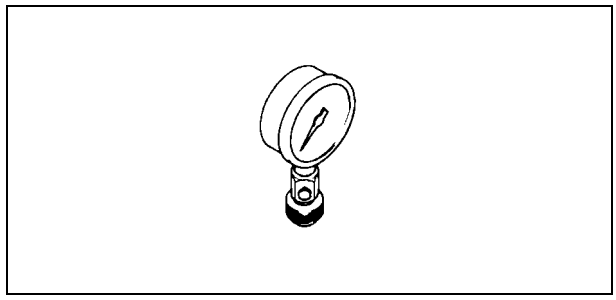
Fastener	Torque			Remarks
	N·m	kgf·m	ft·lb	
Uni-Track:				
Rocker Arm Nut	34	3.5	25	
Tie-rod Nuts	59	6.0	44	
Steering				
Steering Stem Head Nut (ZX1200-B1/B2)	54	5.5	40	
Steering Stem Head Nut (ZX1200-B3)	78	8.0	57	
Steering Stem Nut	20	2.0	15	
Handlebar Bolts	34	3.5	25	L
Handlebar Weight Bolts	–	–	–	L
Handlebar Switch Housing Screws	3.5	0.36	31 in·lb	
Frame				
Wind Shield Mounting Screws	0.40	0.040	3.5 in·lb	
Rear Frame Bolts and Nuts	44	4.5	32	
Front Footpeg Holder Bolts	25	2.5	18	
Rear Footpeg Holder Bolts	34	3.5	25	
Side Stand Bracket Bolts	49	5.0	36	
Side Stand Mounting Bolt and Nut	44	4.5	32	
Side Stand Switch Bolt	8.8	0.90	78 in·lb	L
Electrical System				
Spark Plugs	13	1.3	115 in·lb	
Alternator Rotor Bolt	110	11	81	
Stator Coil Bolts	22	2.2	16	L
Alternator Lead Holding Plate Bolts	8.5	0.87	75 in·lb	L
Engine Ground Lead Terminal Bolt	10	1.0	89 in·lb	
Alternator Cover Bolts	15	1.5	11	
Crankshaft Sensor Cover Bolts	15	1.5	11	L
Crankshaft Sensor Bolts	6.0	0.60	53 in·lb	
Camshaft Position Sensor Bolt	12	1.2	106 in·lb	
Timing Rotor Bolt	39	4.0	29	
Starter Motor Mounting Bolts	12	1.2	106 in·lb	
Handlebar Switch Housing Screws	3.5	0.36	31 in·lb	
Radiator Fan Switch	18	1.8	13	
Water Temperature Sensor	25	2.5	18	SS
Oil Pressure Switch	15	1.5	11	SS
Oil Pressure Switch Terminal Bolt	1.5	0.15	13 in·lb	
Gear Position Switch Screws	4.0	0.40	35 in·lb	L
Speed Sensor Bolt	10	1.0	89 in·lb	
Fuel Level Sensor Bolts	6.9	0.70	61 in·lb	
Front Brake Switch Light Screw	12	1.2	106 in·lb	
Tail/Brake Light Assy Mounting Nuts	6.0	0.60	53 in·lb	

Special Tools and Sealant

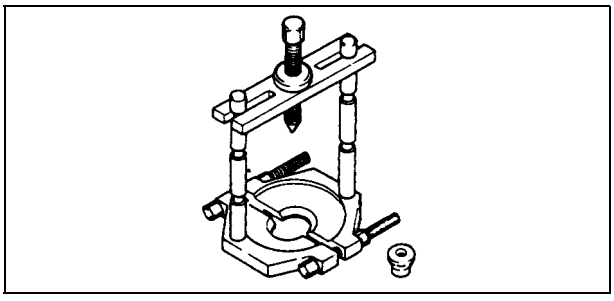
Oil Pressure Gauge, 5 kgf/cm²:
57001-125



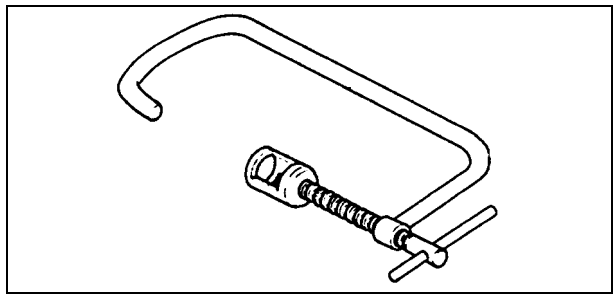
Compression Gauge, 20 kgf/cm²:
57001-221



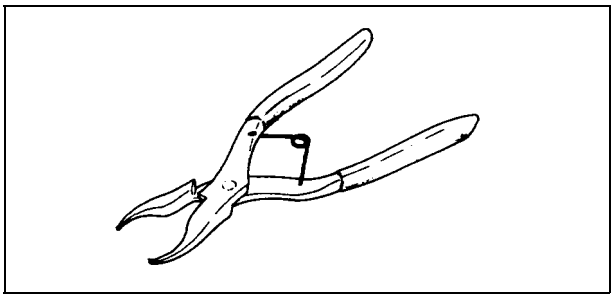
Bearing Puller:
57001-135



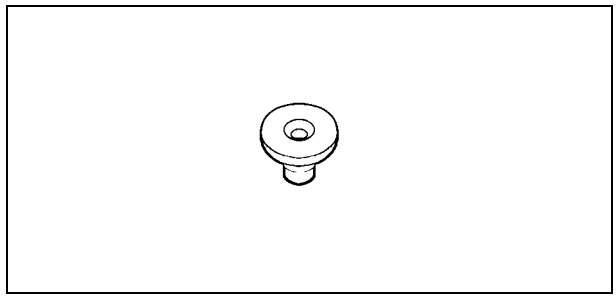
Valve Spring Compressor Assembly:
57001-241



Inside Circlip Pliers:
57001-143



Bearing Puller Adapter:
57001-317



Outside Circlip Pliers:
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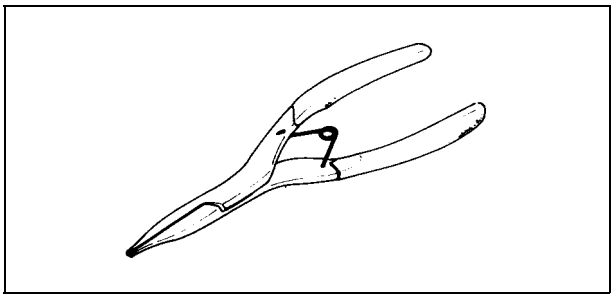
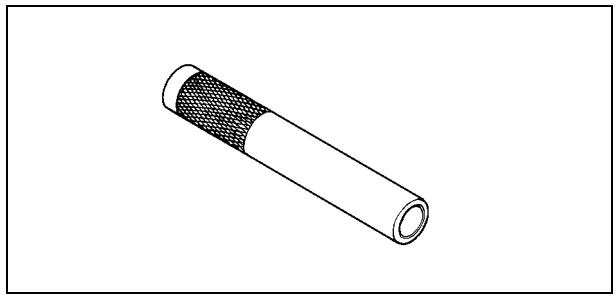
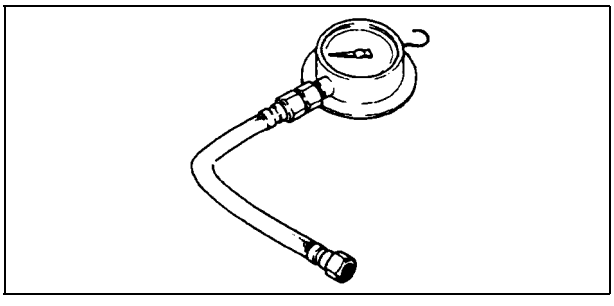


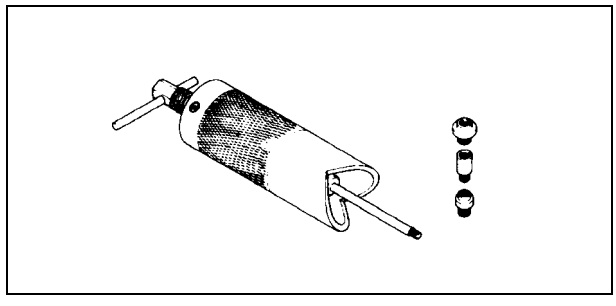
Bearing Driver:
57001-382



Oil Pressure Gauge, 10 kgf/cm²:
57001-164

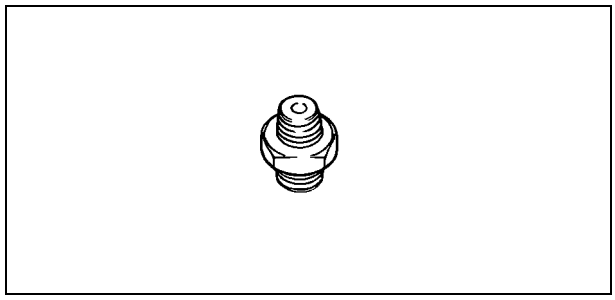


Piston Pin Puller Assembly:
57001-910

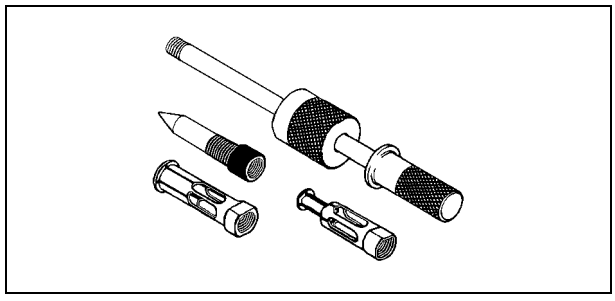


Special Tools and Sealant

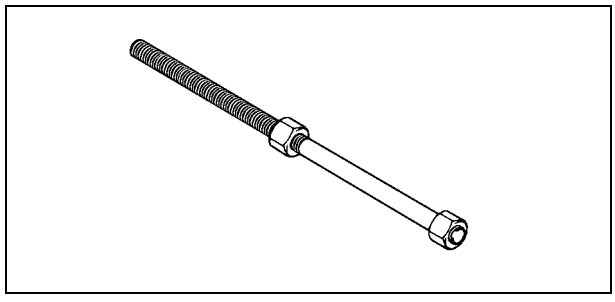
Oil Pressure Gauge Adapter, PT 1/8:
57001-1033



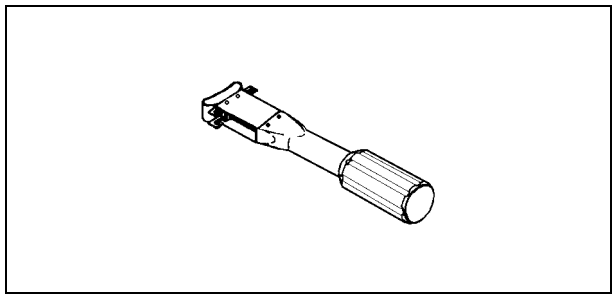
Oil Seal & Bearing Remover:
57001-1058



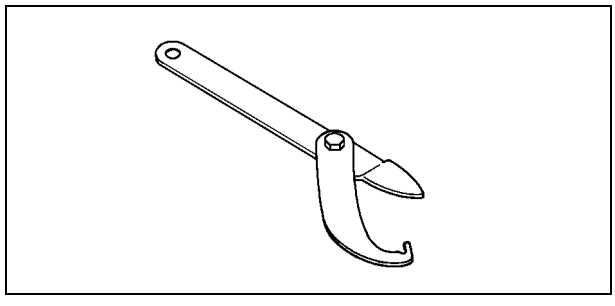
Head Pipe Outer Race Press Shaft:
57001-1075



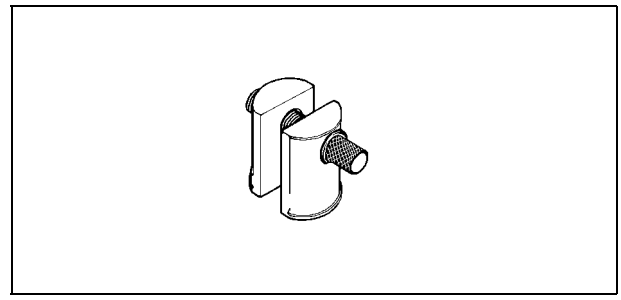
Piston Ring Compressor Grip:
57001-1095



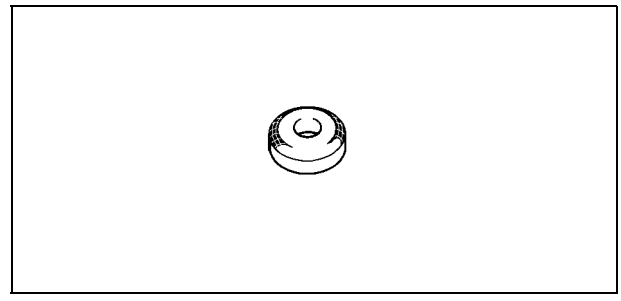
Steering Stem Nut Wrench:
57001-1100



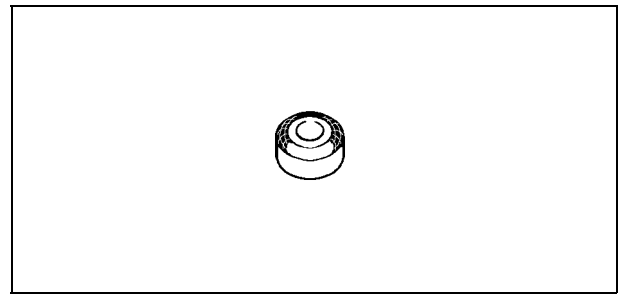
Head Pipe Outer Race Remover:
57001-1107



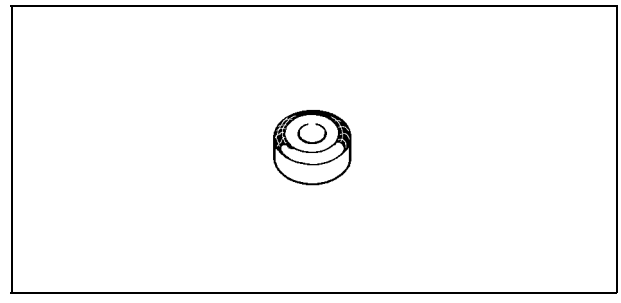
Valve Seat Cutter, 45° - ϕ35:
57001-1116



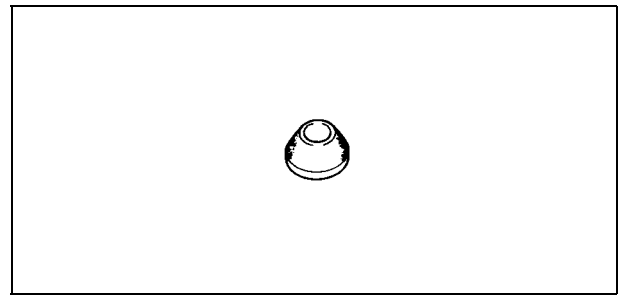
Valve Seat Cutter, 30° - ϕ30:
57001-1120



Valve Seat Cutter, 32° - ϕ35:
57001-1121

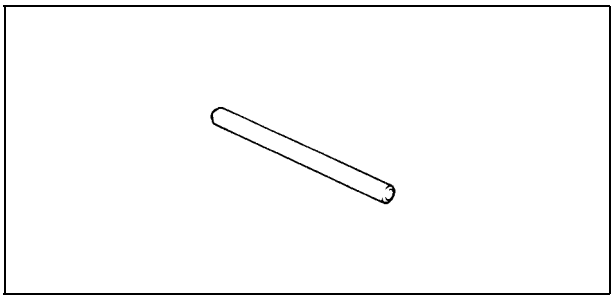


Valve Seat Cutter, 60° - ϕ30:
57001-1123

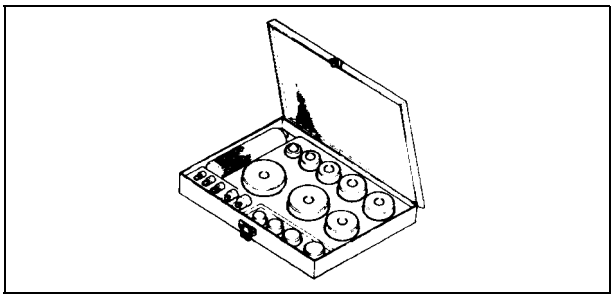


Special Tools and Sealant

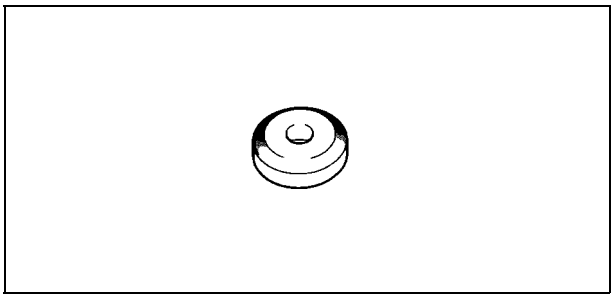
Valve Seat Cutter Holder Bar:
57001-1128



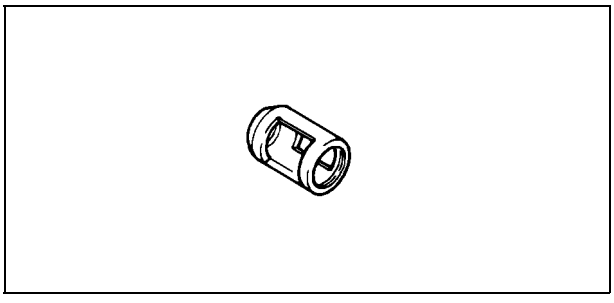
Bearing Driver Set:
57001-1129



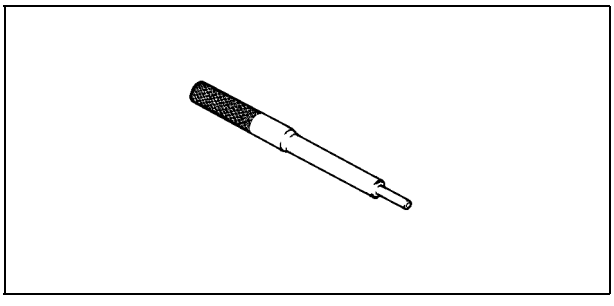
Valve Seat Cutter, 45° - ϕ30:
57001-1187



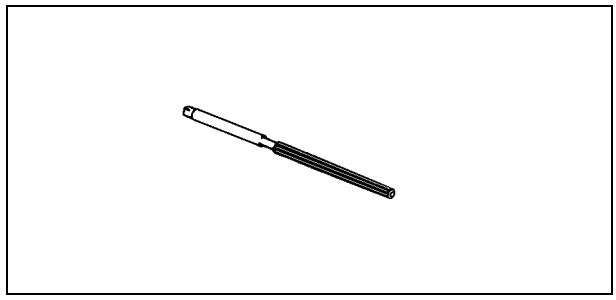
Valve Spring Compressor Adapter, ϕ22:
57001-1202



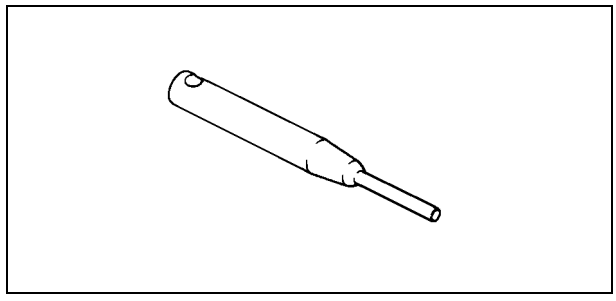
Valve Guide Arbor, ϕ5:
57001-1203



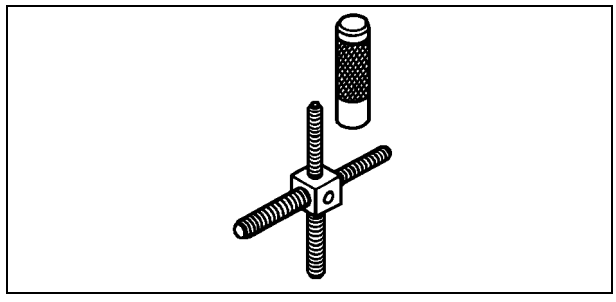
Valve Guide Reamer, ϕ5:
57001-1204



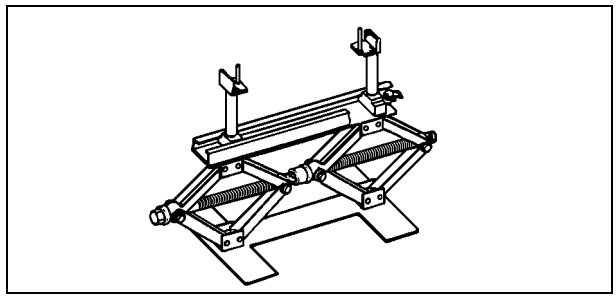
Valve Seat Cutter Holder, ϕ5:
57001-1208



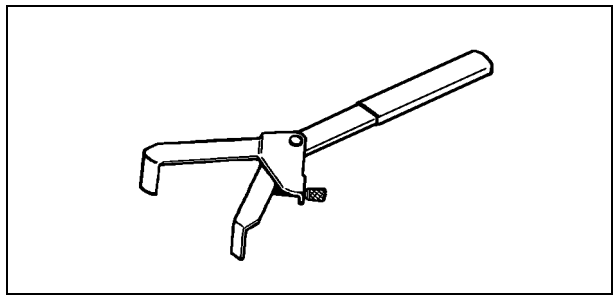
Rotor Puller, M16/M18/M20/M22 × 1.5:
57001-1216



Jack:
57001-1238

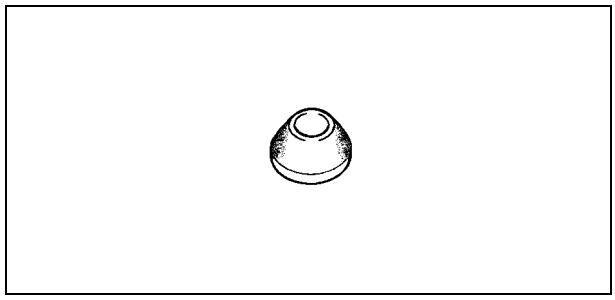


Clutch Holder:
57001-1243

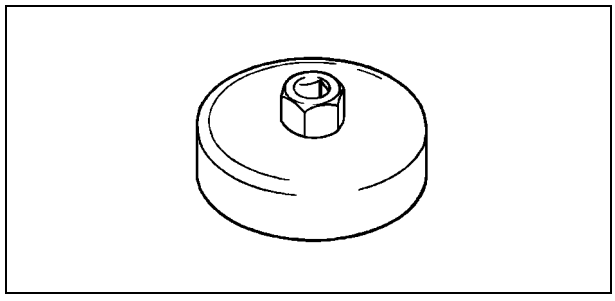


Special Tools and Sealant

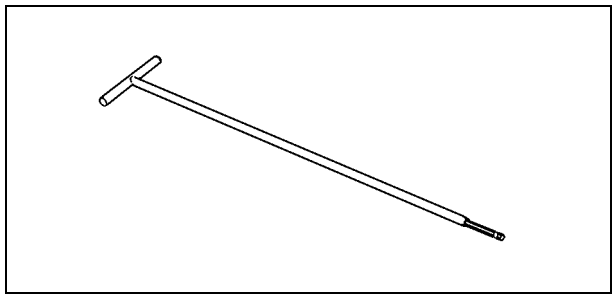
Valve Seat Cutter, 55° - ϕ35:
57001-1247



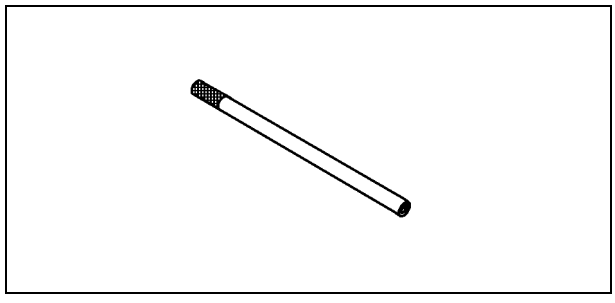
Oil Filter Wrench:
57001-1249



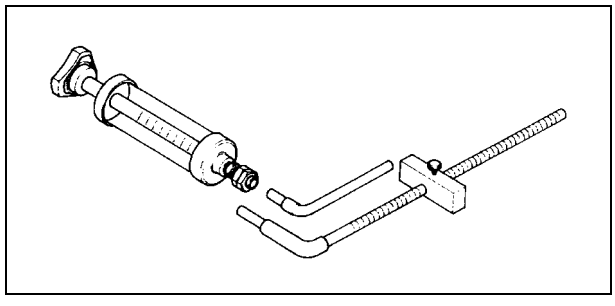
Carburetor Drain Plug Wrench, Hex 3:
57001-1269



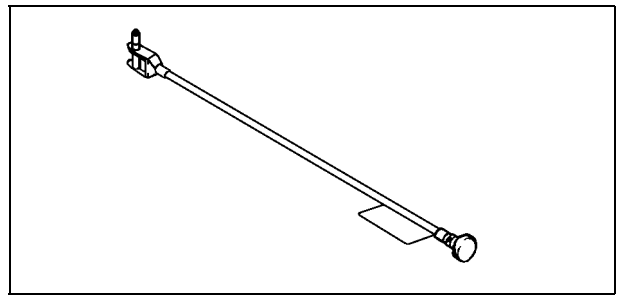
Fork Piston Rod Puller, M12 × 1.25:
57001-1289



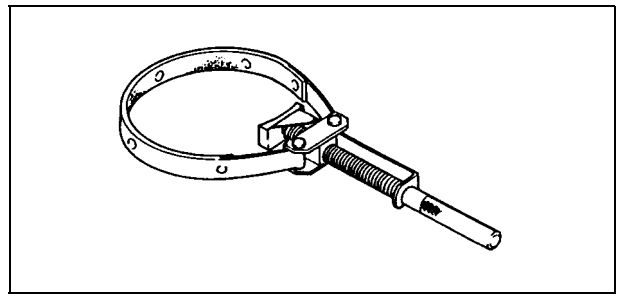
Fork Oil Level Gauge:
57001-1290



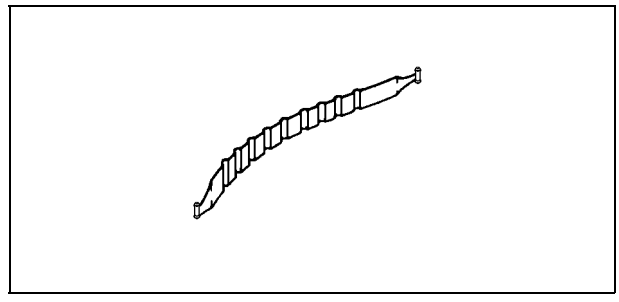
Pilot Screw Adjuster, C:
57001-1292



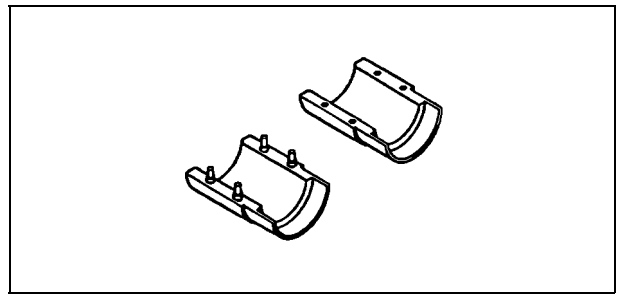
Flywheel Holder:
57001-1313



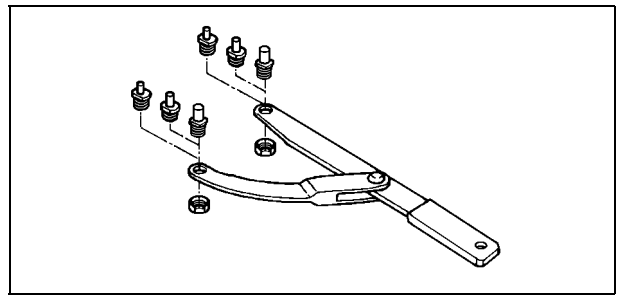
Piston Ring Compressor Belt, ϕ80 ~ ϕ91:
57001-1320



Fork Oil Seal Driver, ϕ43:
57001-1340

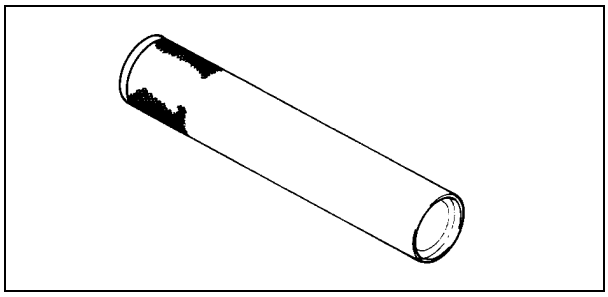


Flywheel & Pulley Holder:
57001-1343

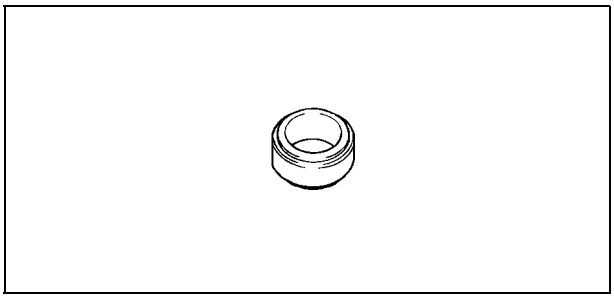


Special Tools and Sealant

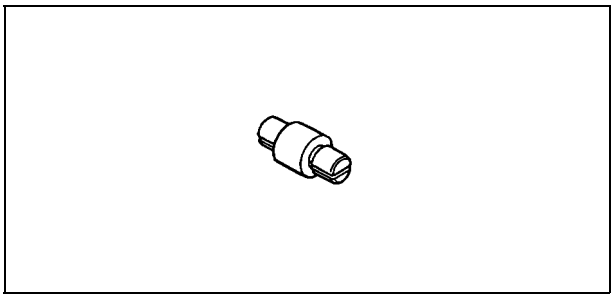
Steering Stem Bearing Driver:
57001-1344



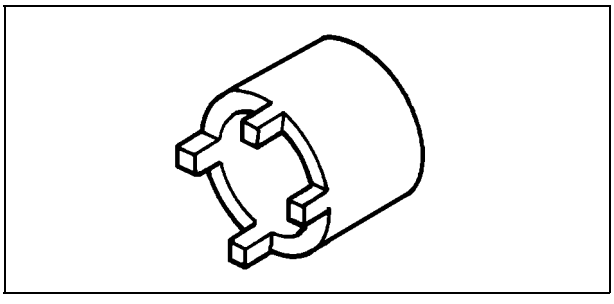
Steering Stem Bearing Driver Adapter:
57001-1345



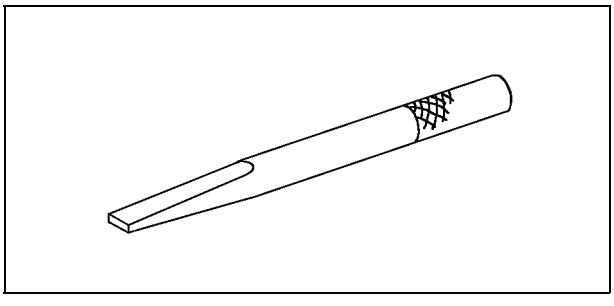
Bearing Remover Head, ϕ25 × ϕ28:
57001-1346



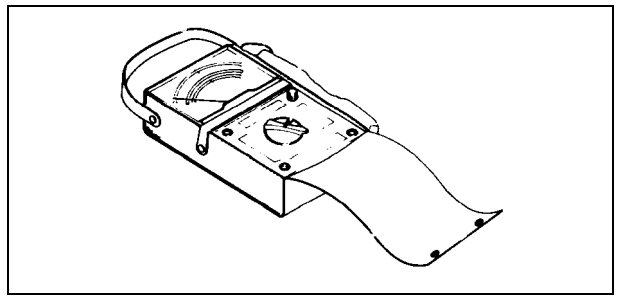
Socket Wrench:
57001-1370



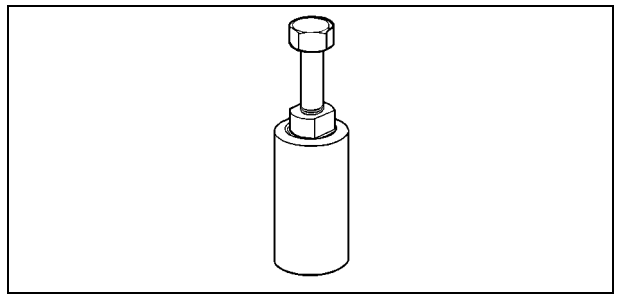
Bearing Remover Shaft, ϕ13:
57001-1377



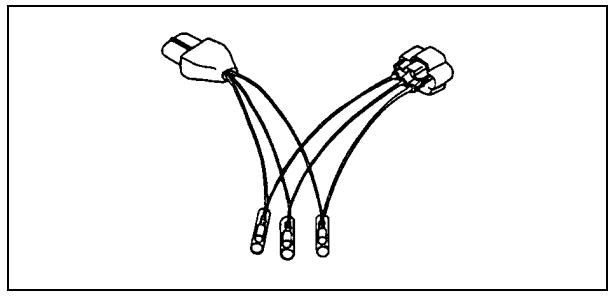
Hand Tester:
57001-1394



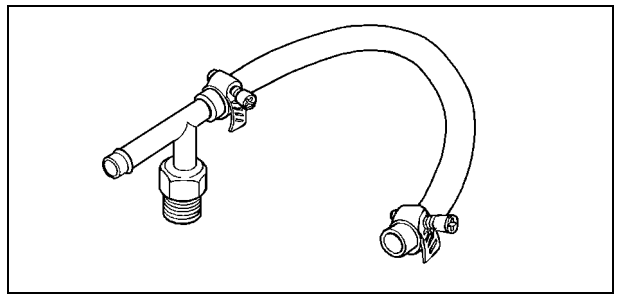
Flywheel Puller Assembly, M38 × 1.5/M35 × 1.5:
57001-1405



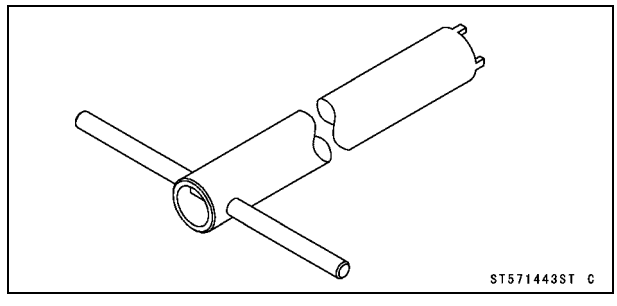
Throttle Sensor Setting Adapter #2:
57001-1408



Fuel Pressure Gauge Adapter:
57001-1417

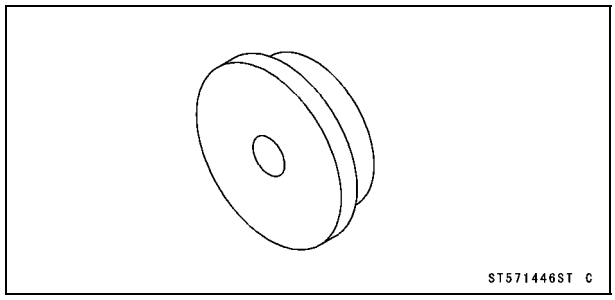


Fork Cylinder Holder:
57001-1443

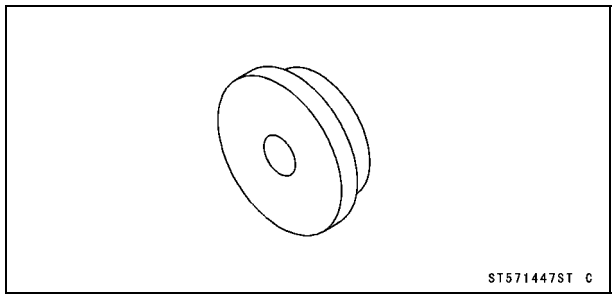


Special Tools and Sealant

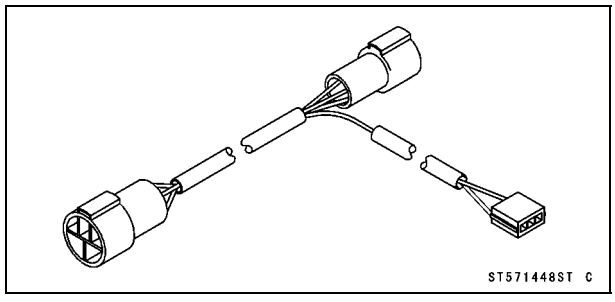
Head Pipe Outer Race Driver:
57001-1446



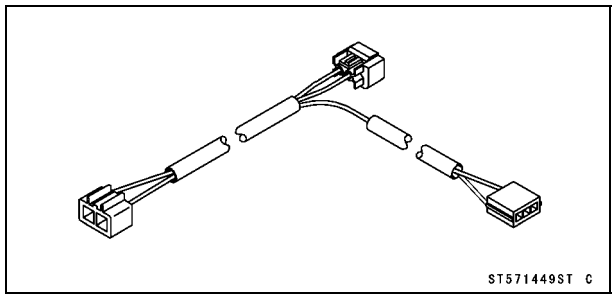
Head Pipe Outer Race Driver:
57001-1447



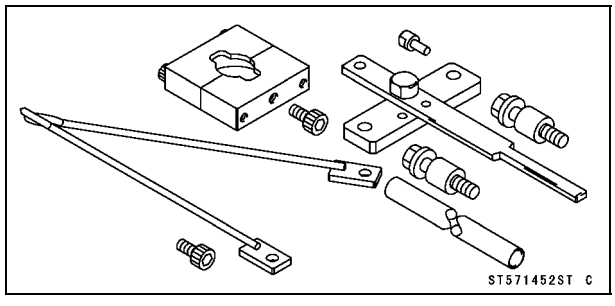
Lead Wire - Voltage Regulator Adapter:
57001-1448



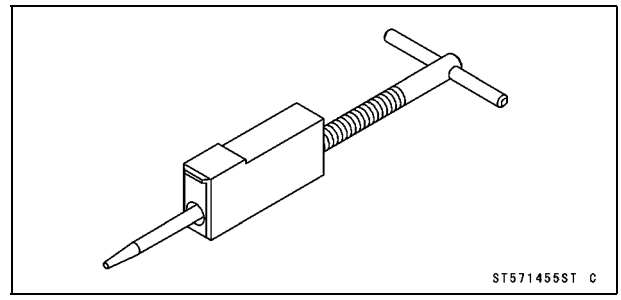
Lead Wire - Peak Voltage Adapter:
57001-1449



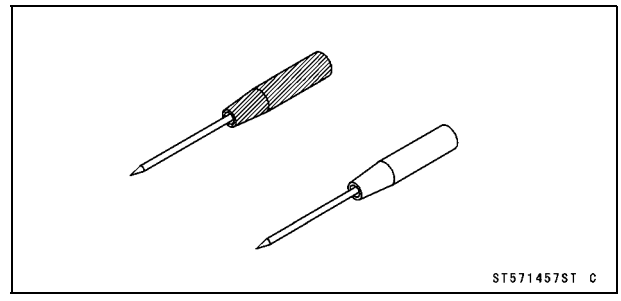
Fork Spring Compressor Set:
57001-1452



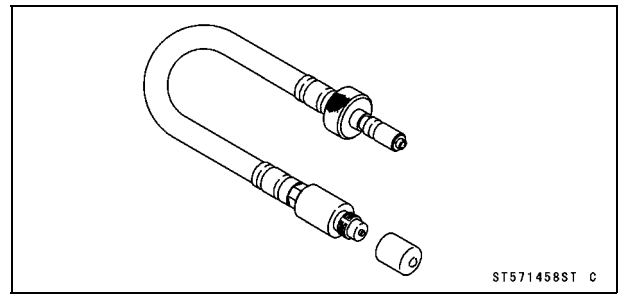
Clutch Gear Setting Screw:
57001-1455



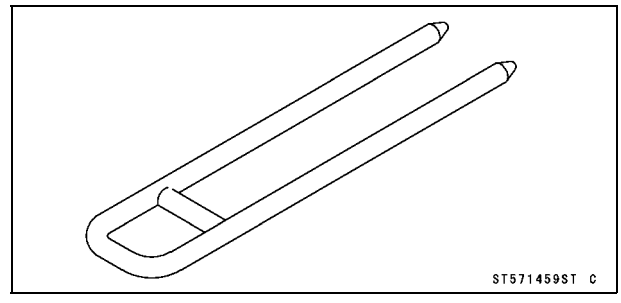
Needle Adapter Set:
57001-1457



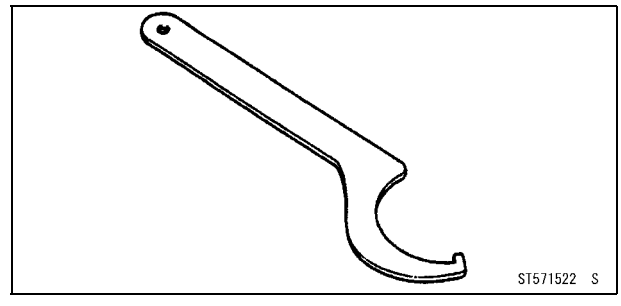
Compression Gauge Adapter, M10 × 1.0:
57001-1458



Piston Base, ϕ10:
57001-1459

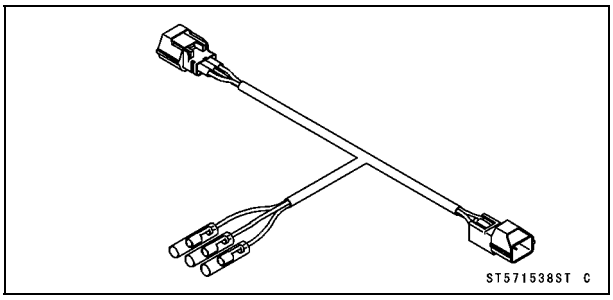


Hook Wrench:
57001-1522

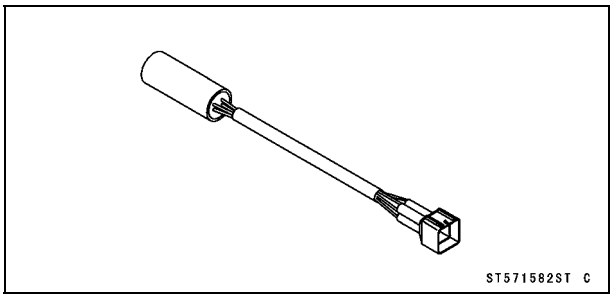


Special Tools and Sealant

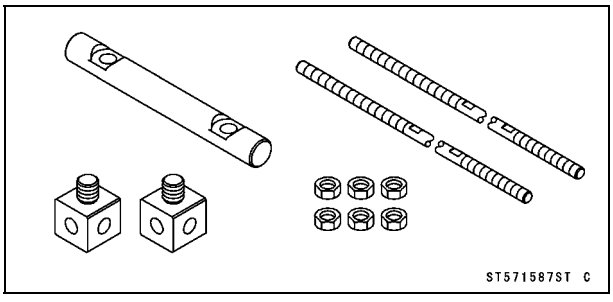
Throttle Sensor Setting Adapter:
57001-1538



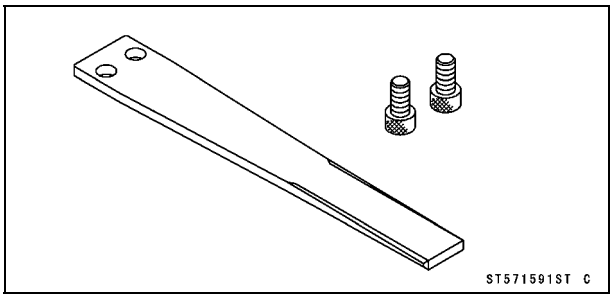
Key Registration Unit:
57001-1582



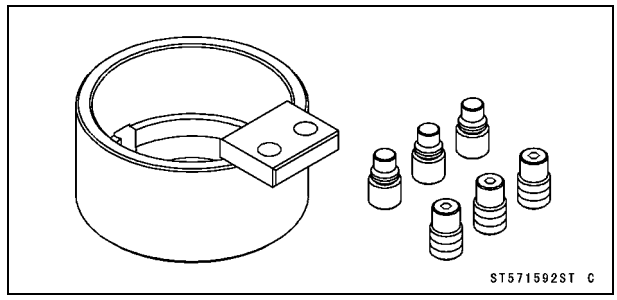
Fork Spring Compressor:
57001-1587



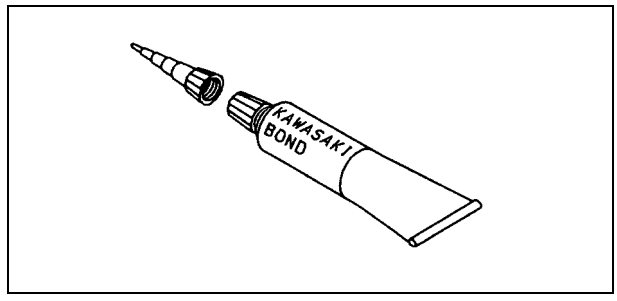
Pulley Holder, Grip:
57001-1591



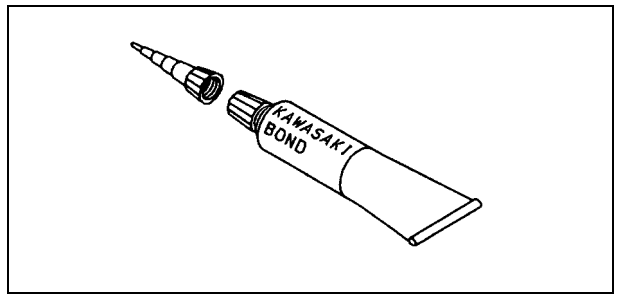
Rotor Holder:
57001-1592



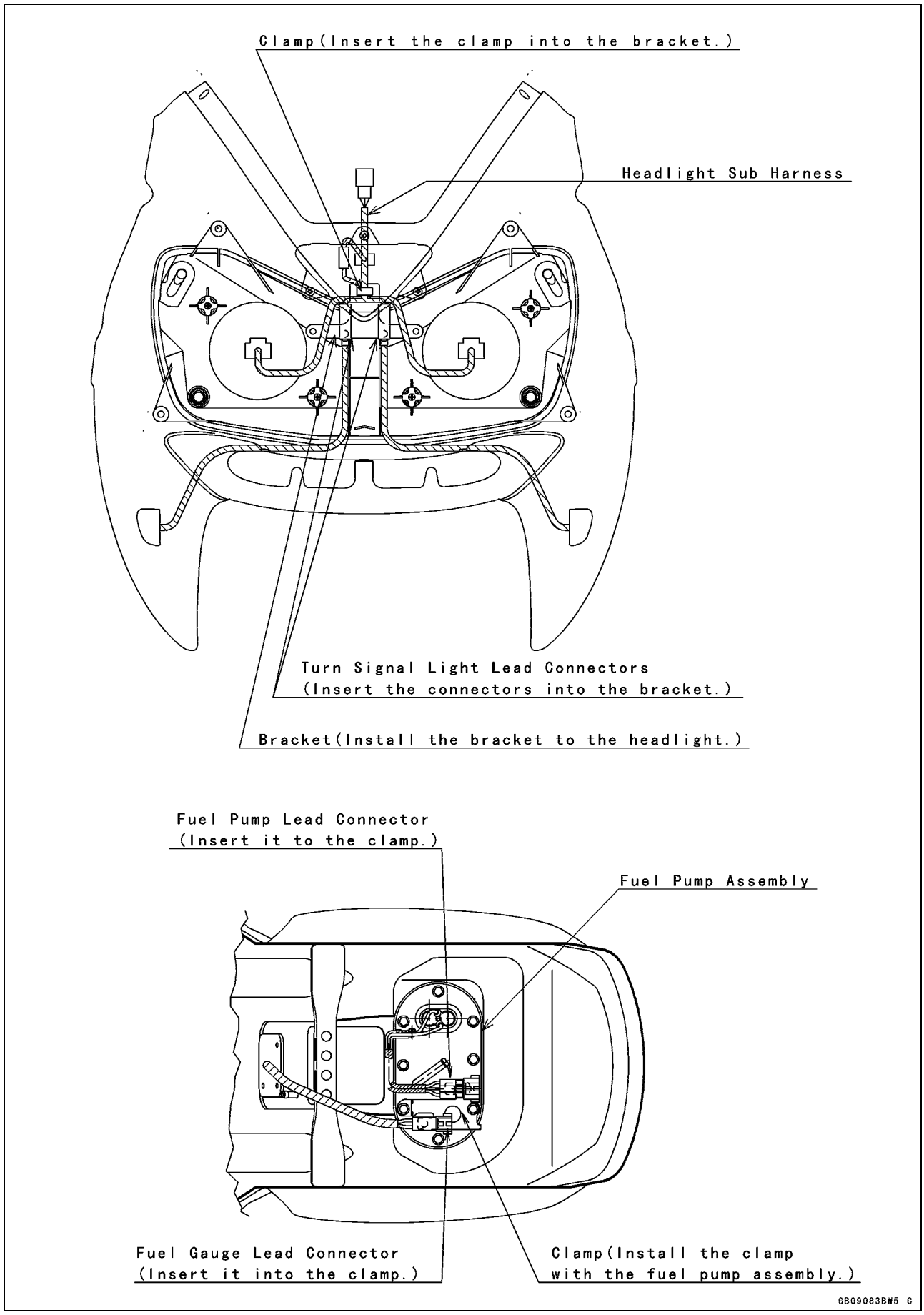
Kawasaki Bond (Silicone Sealant):
56019-120



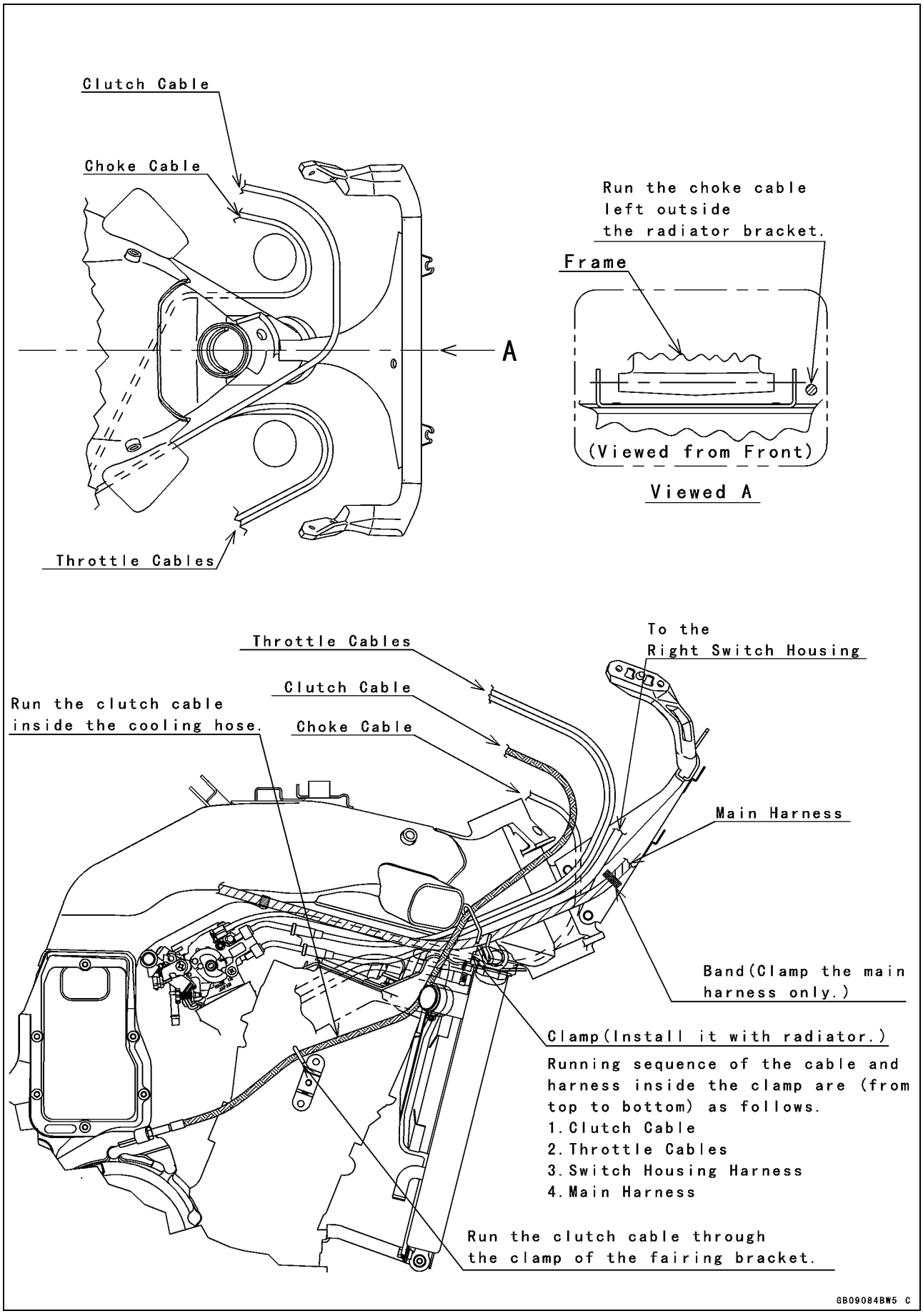
Kawasaki Bond (Liquid Gasket - Black):
92104-1062



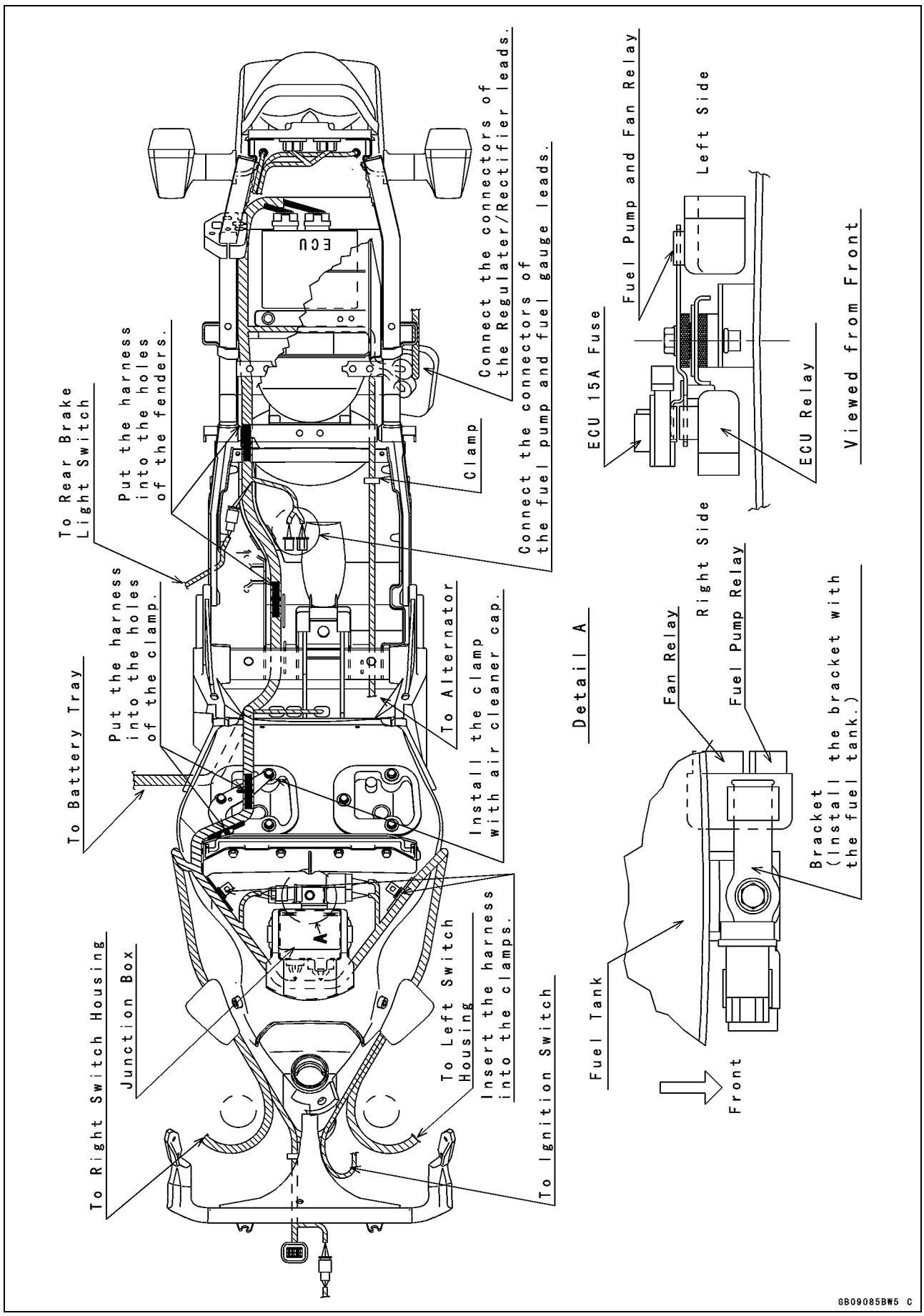
Cable, Wire, and Hose Routing (ZX1200-B1/B2)



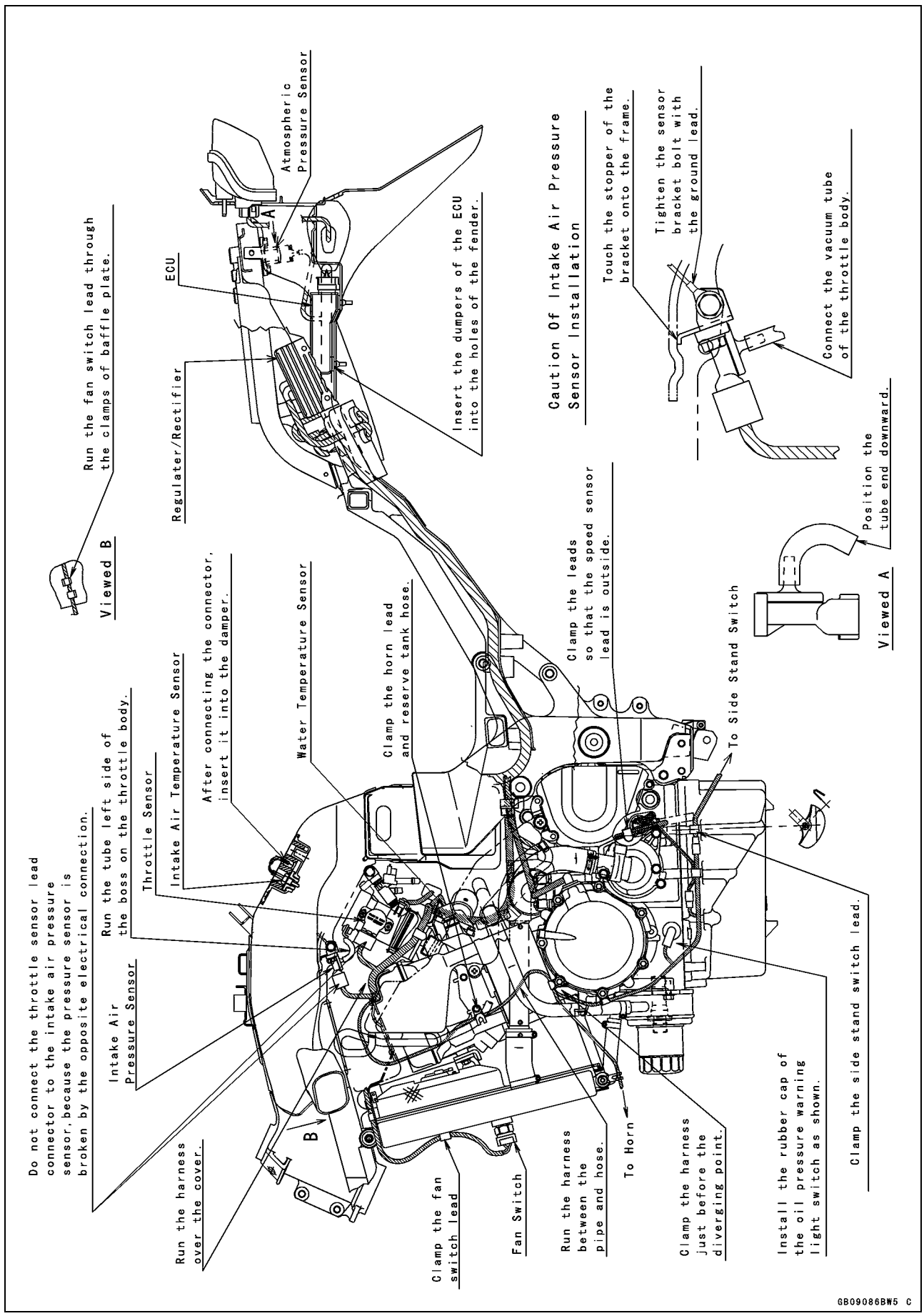
Cable, Wire, and Hose Routing (ZX1200-B1/B2)



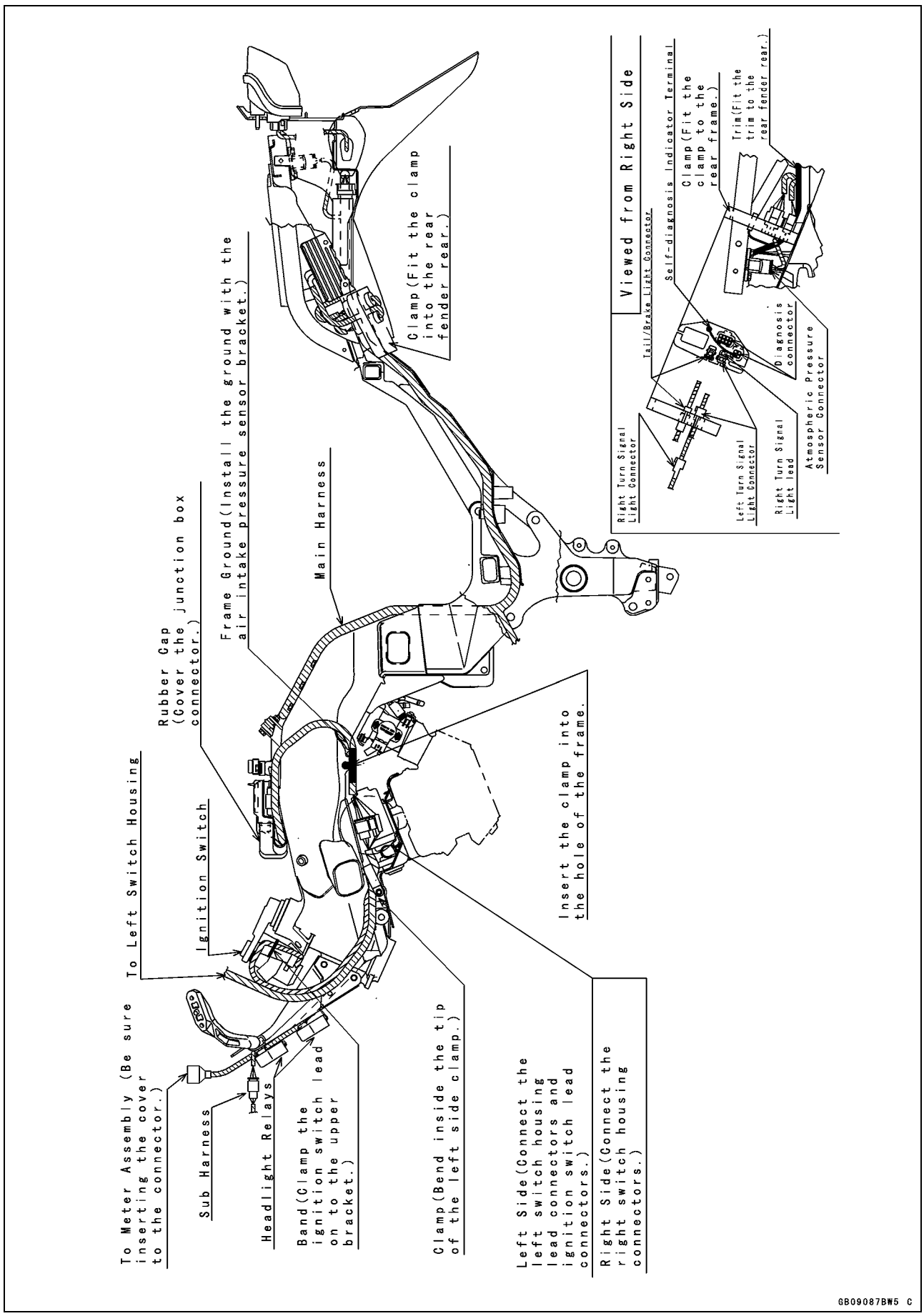
Cable, Wire, and Hose Routing (ZX1200-B1/B2)



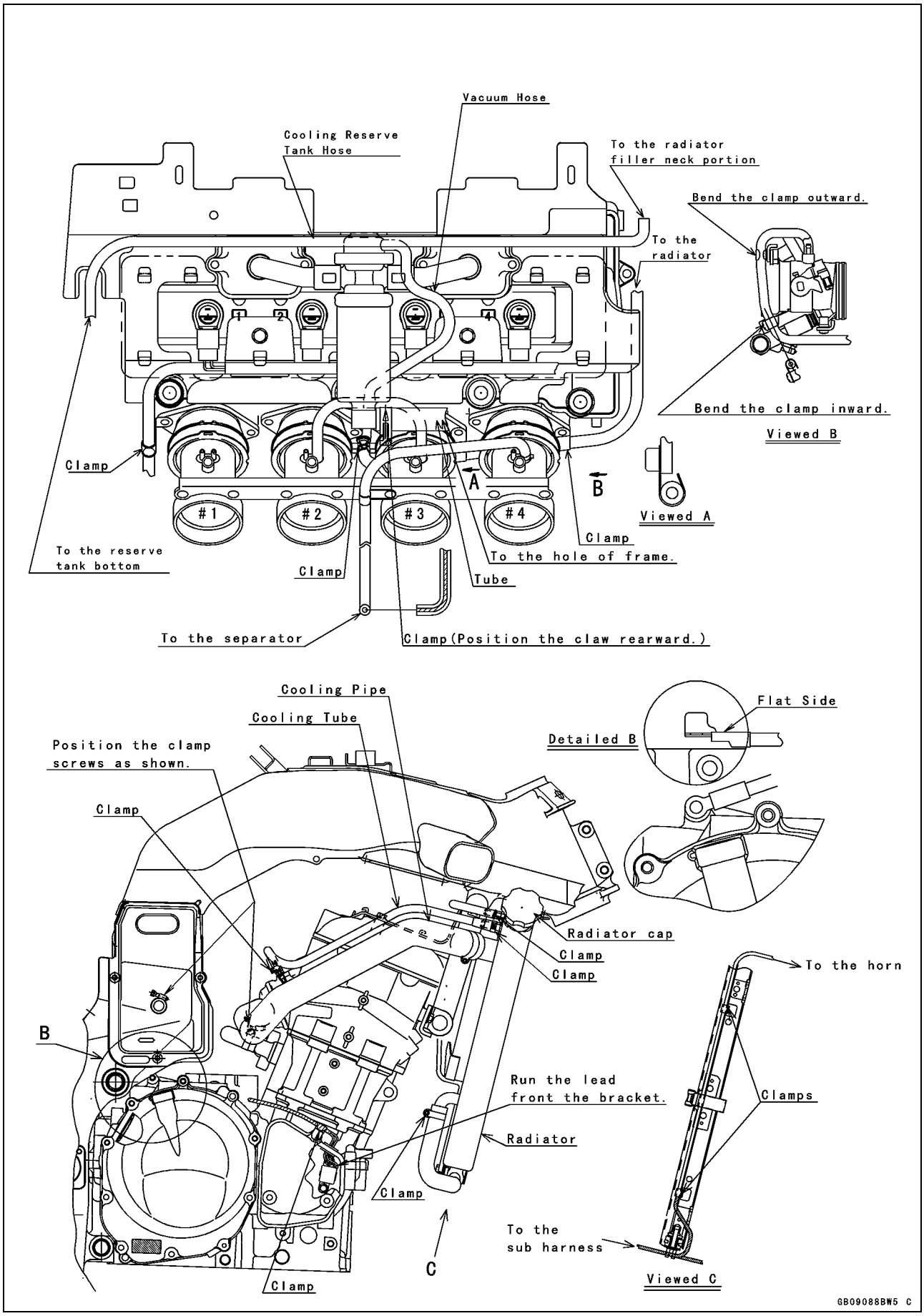
Cable, Wire, and Hose Routing (ZX1200-B1/B2)



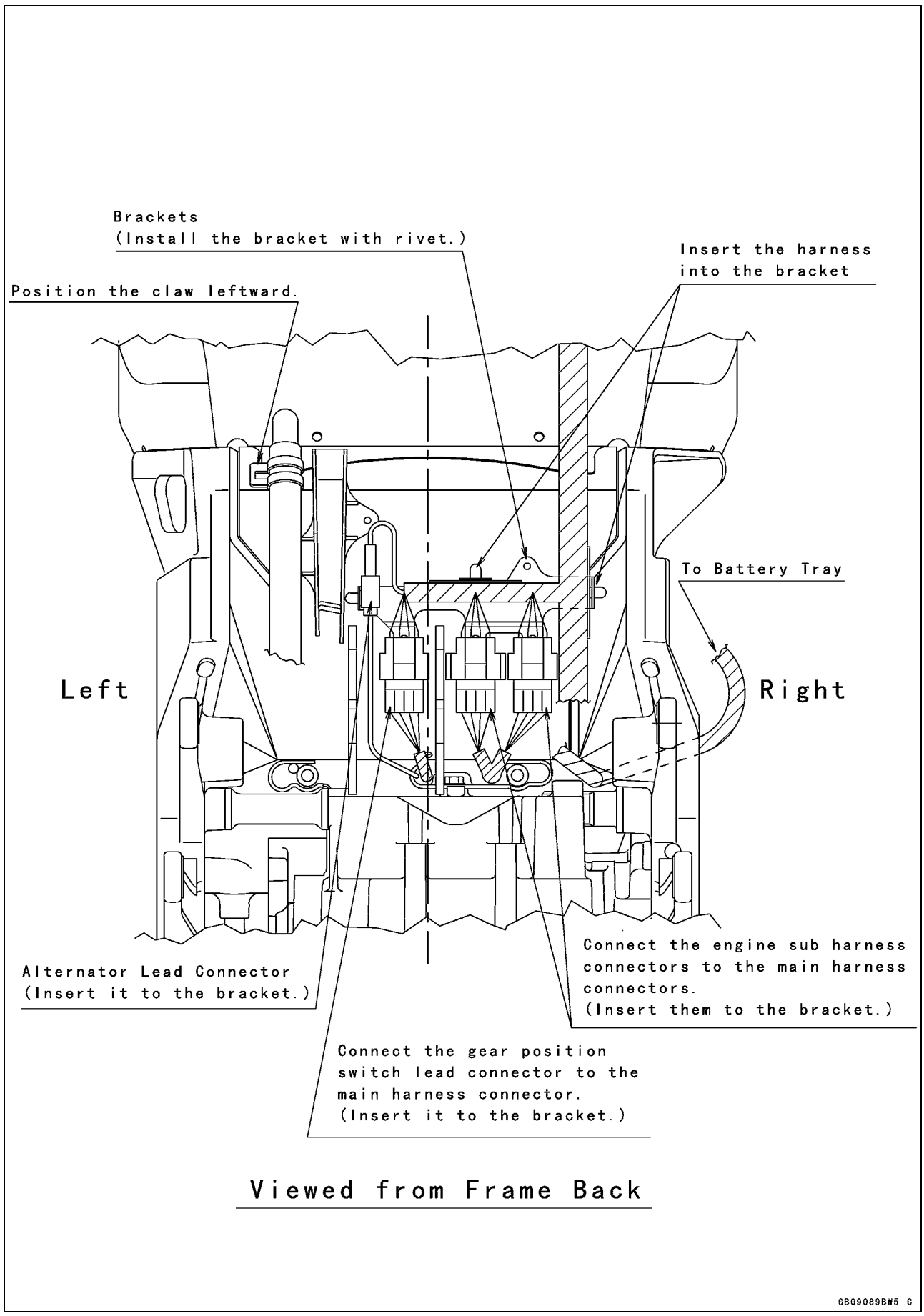
Cable, Wire, and Hose Routing (ZX1200-B1/B2)



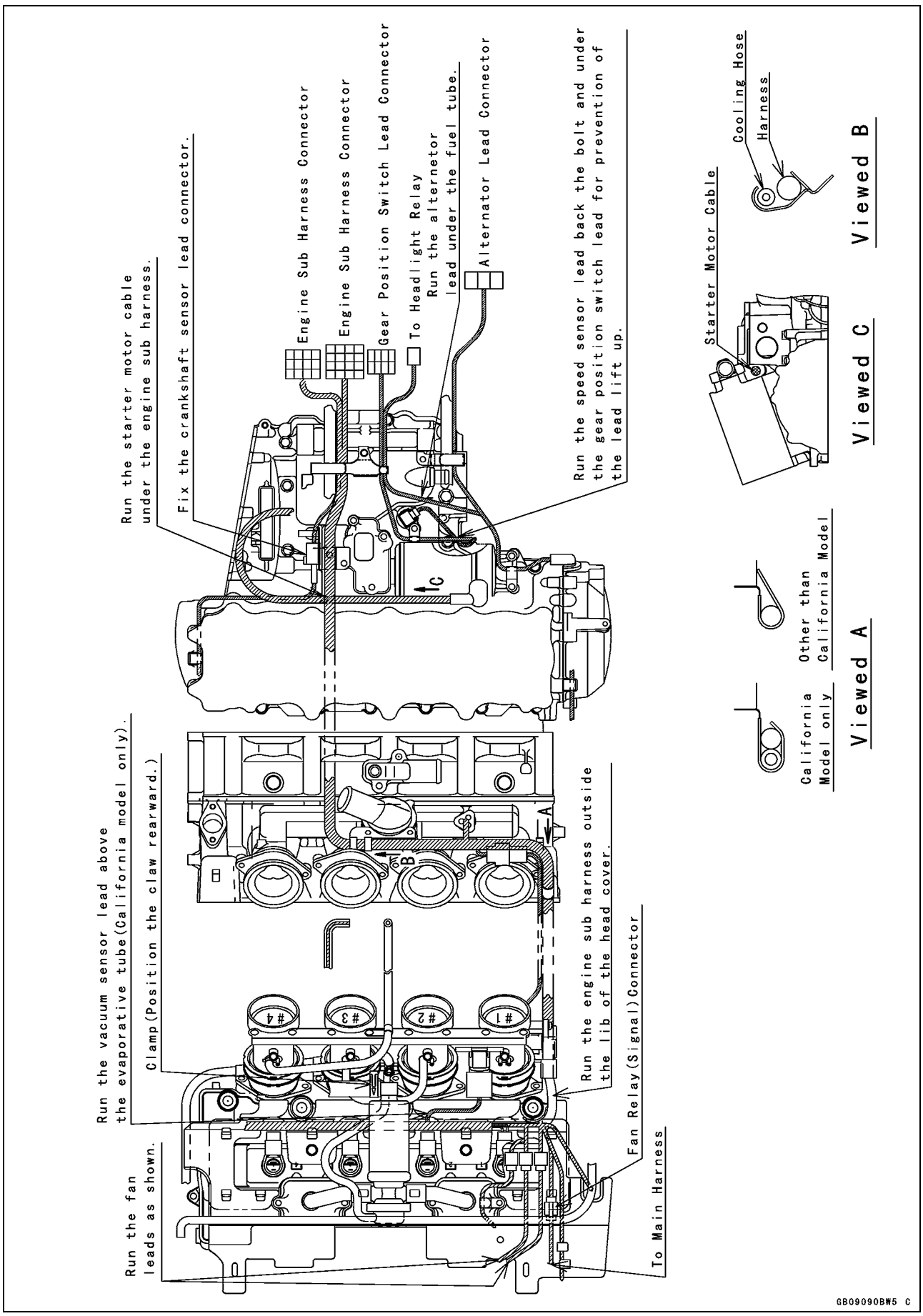
Cable, Wire, and Hose Routing (ZX1200-B1/B2)



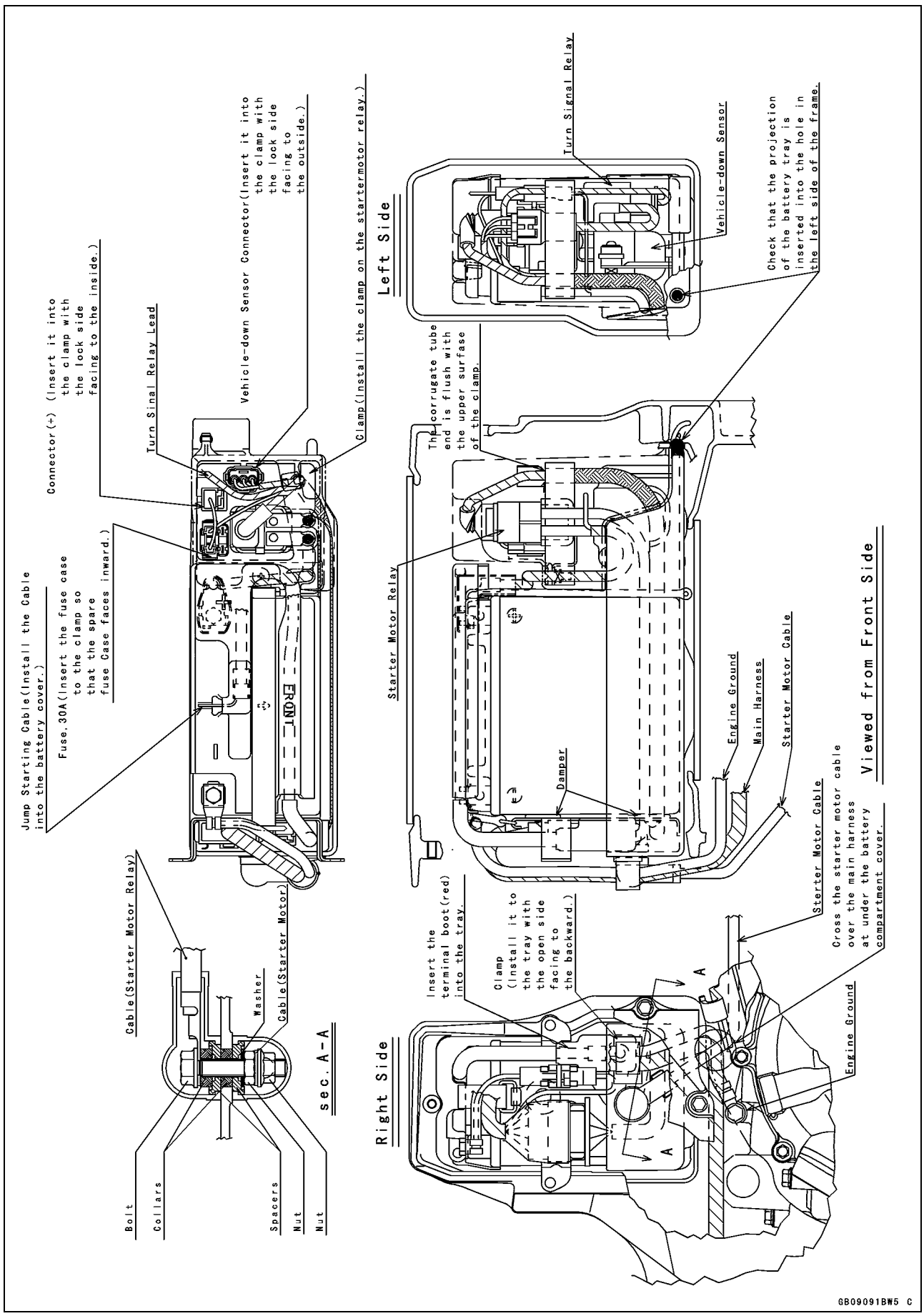
Cable, Wire, and Hose Routing (ZX1200-B1/B2)



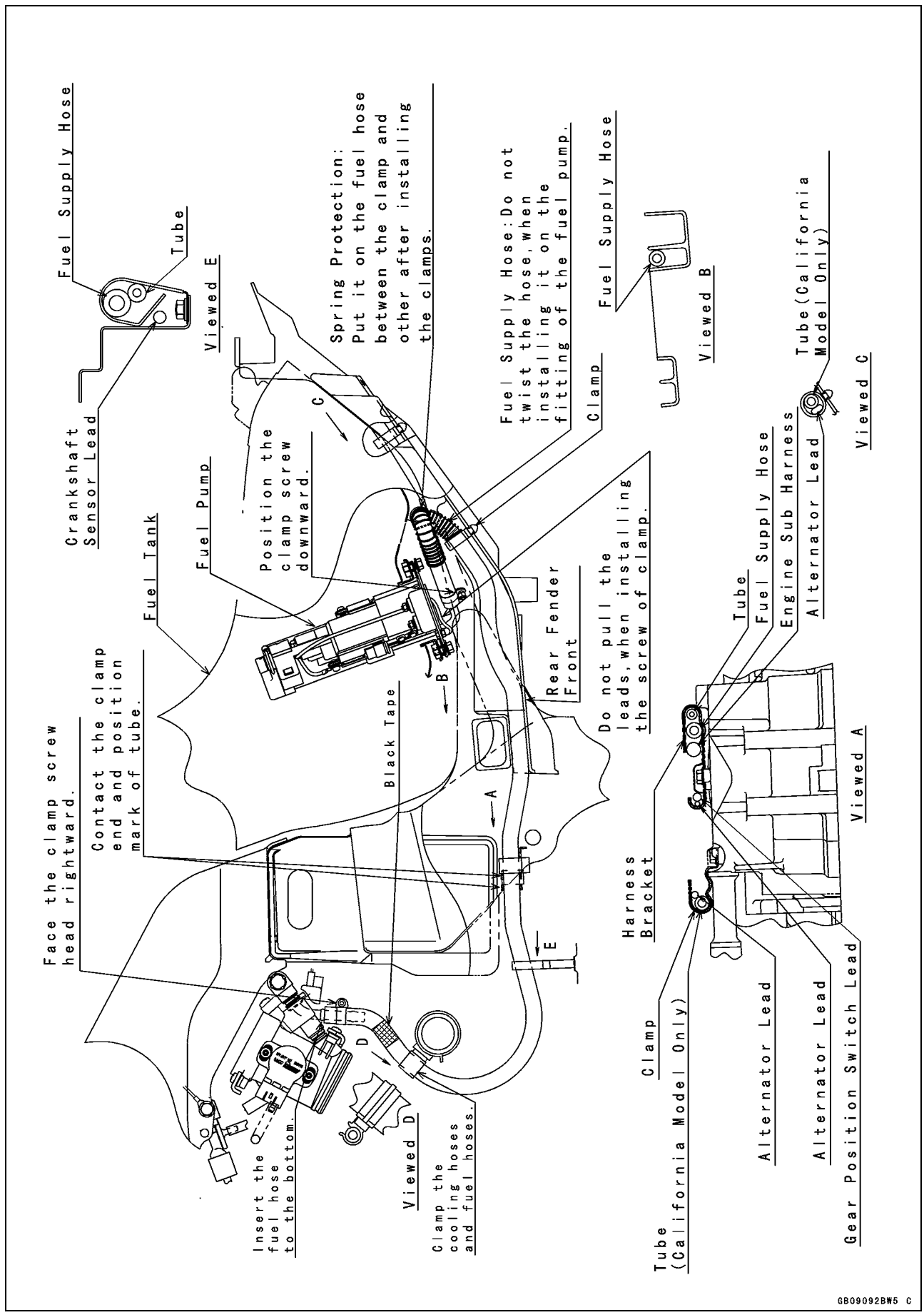
Cable, Wire, and Hose Routing (ZX1200-B1/B2)



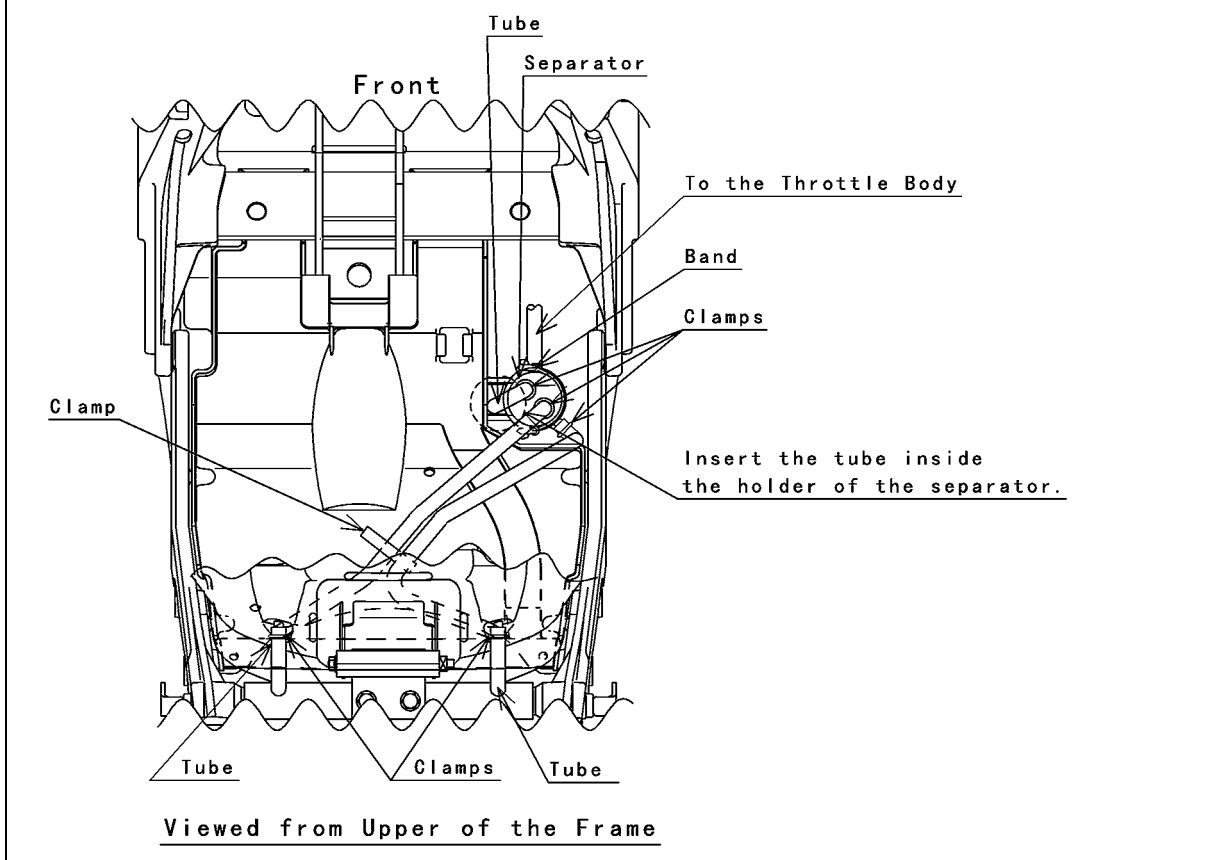
Cable, Wire, and Hose Routing (ZX1200-B1/B2)



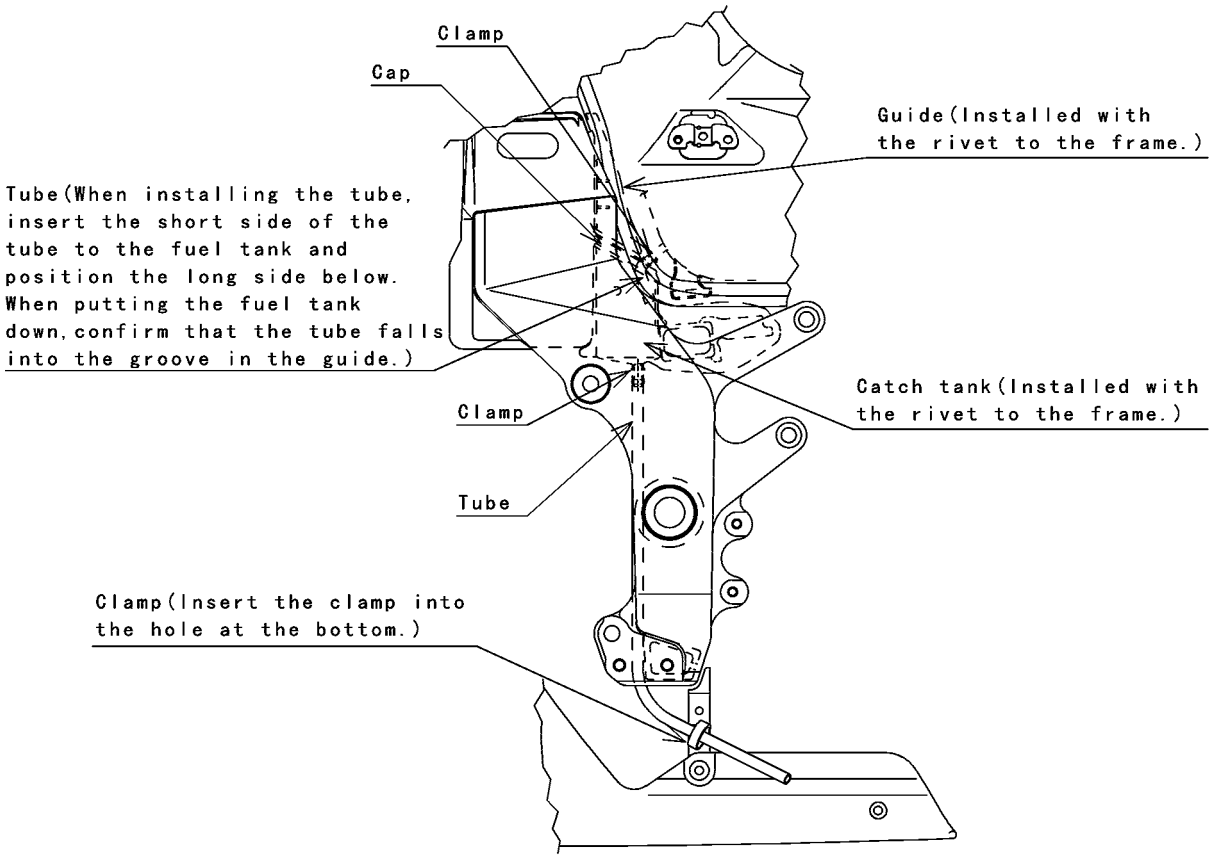
Cable, Wire, and Hose Routing (ZX1200-B1/B2)



Cable, Wire, and Hose Routing (ZX1200-B1/B2)



Viewed from Upper of the Frame



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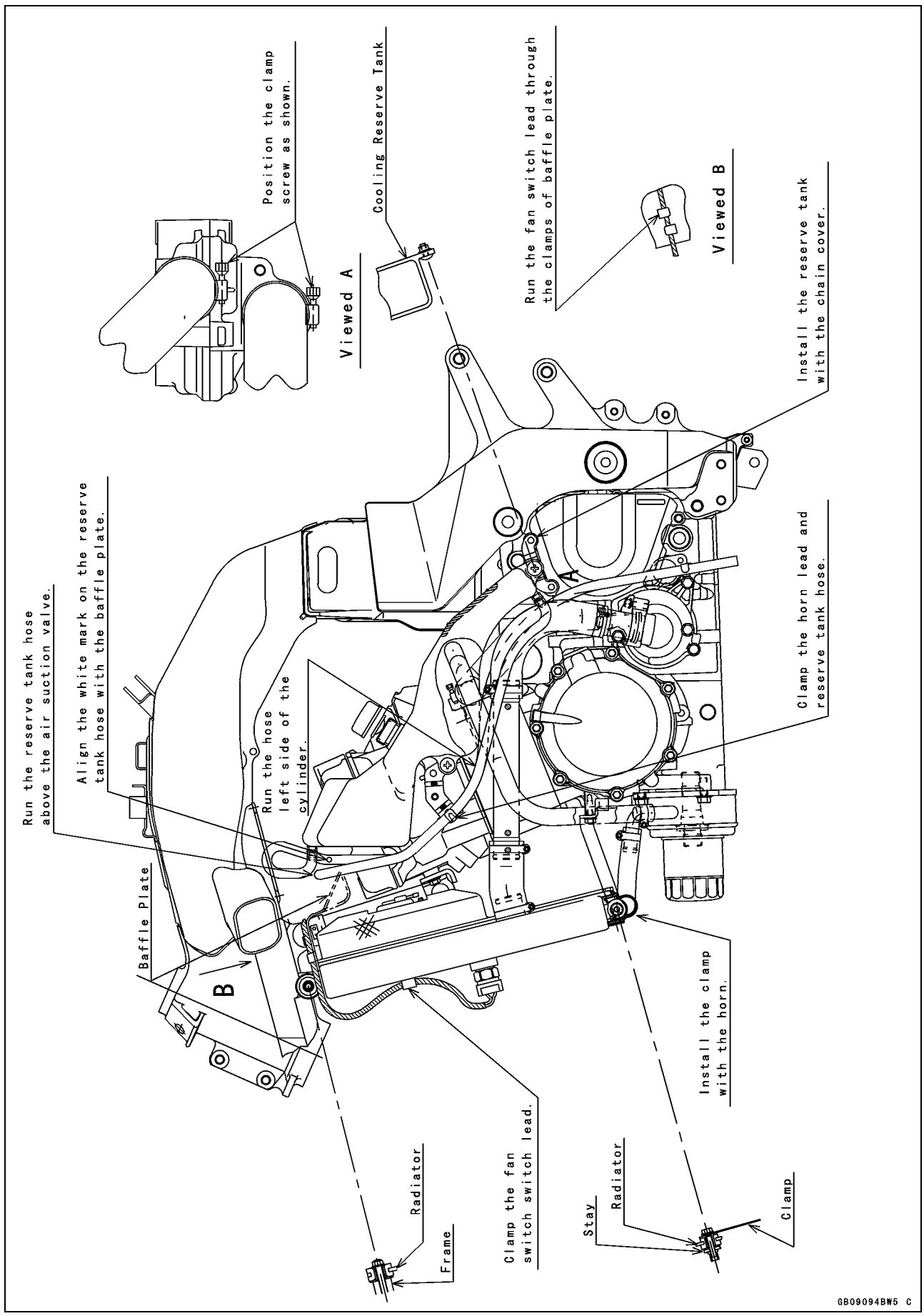
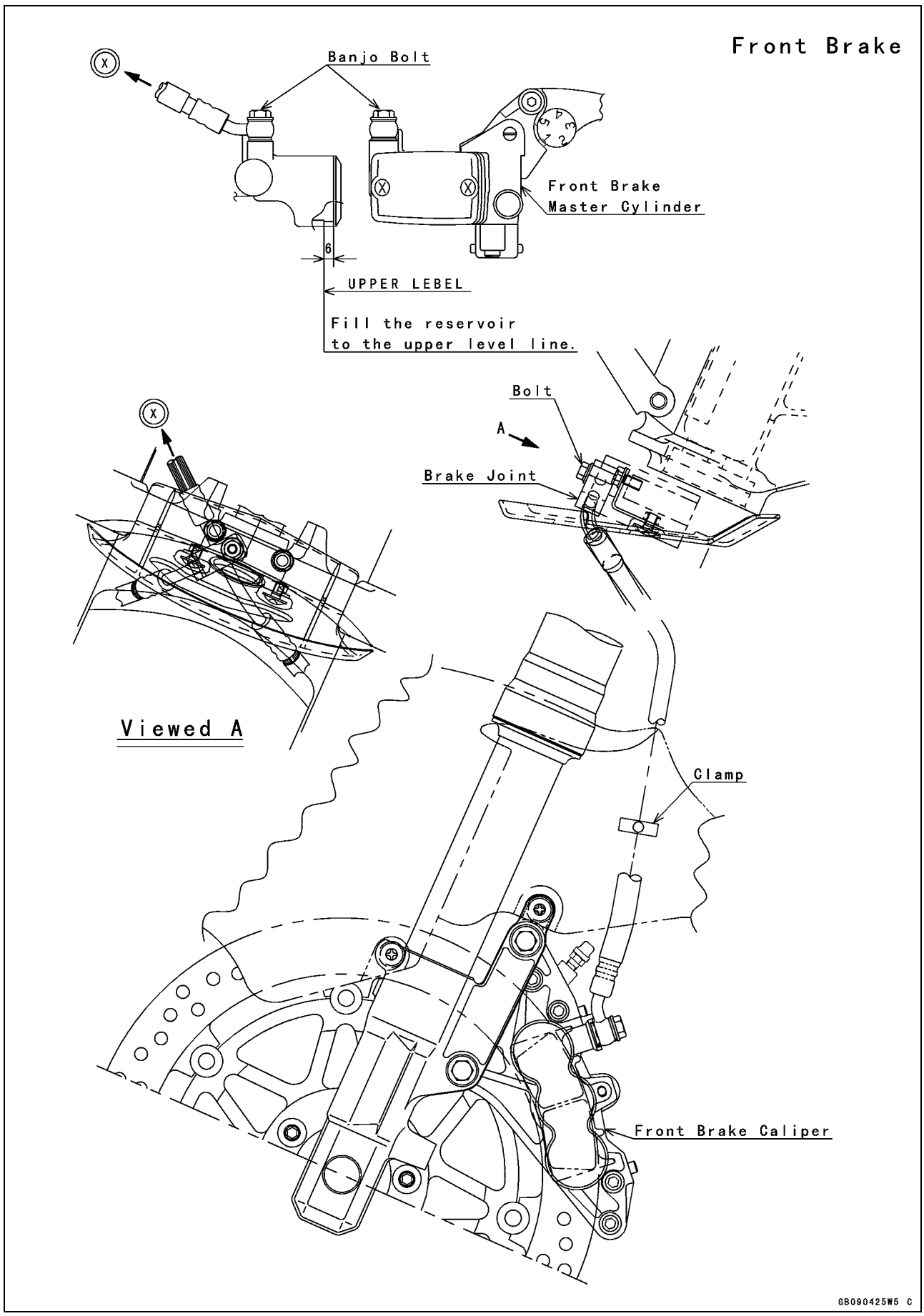
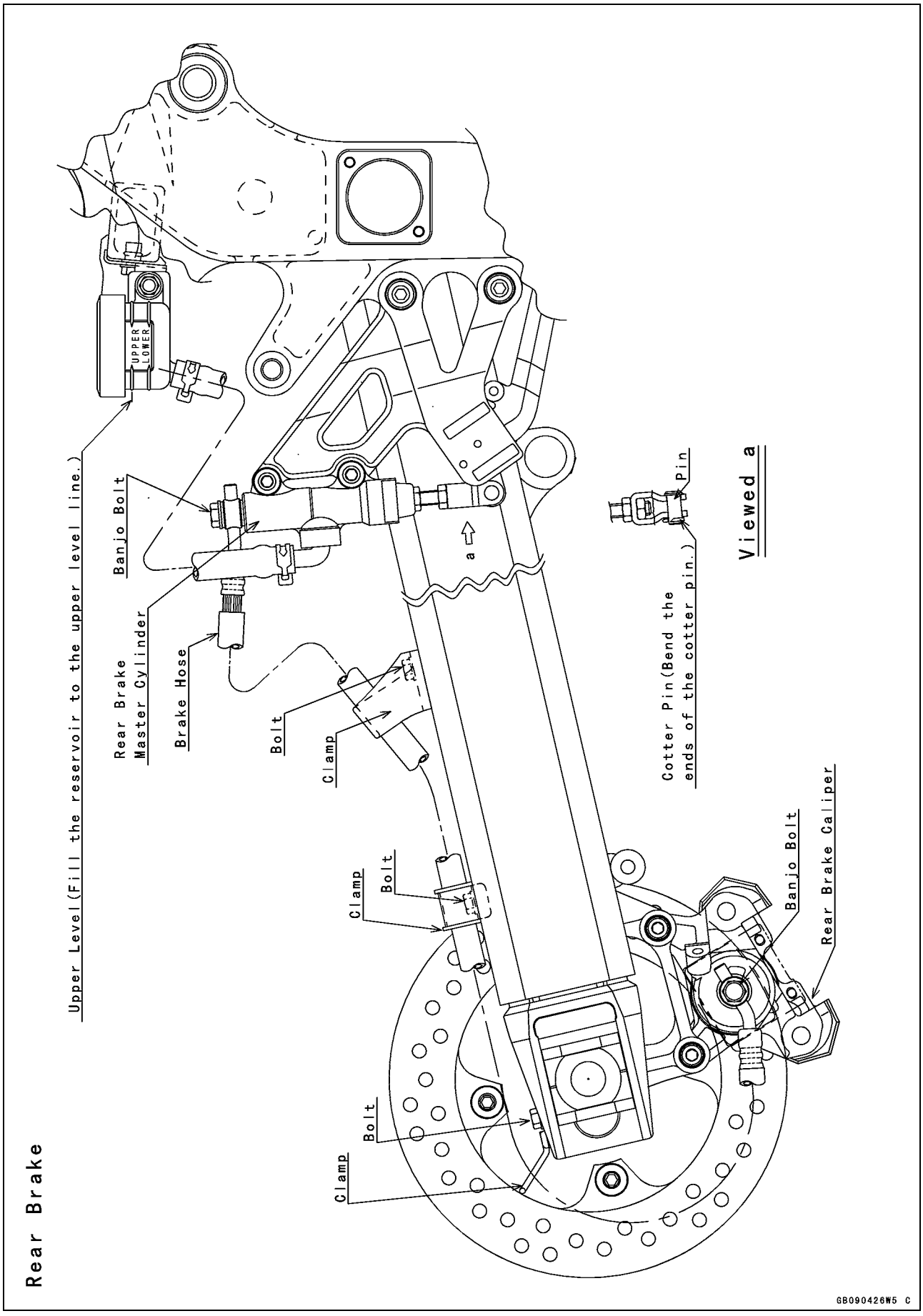
Cable, Wire, and Hose Routing (ZX1200-B1/B2)



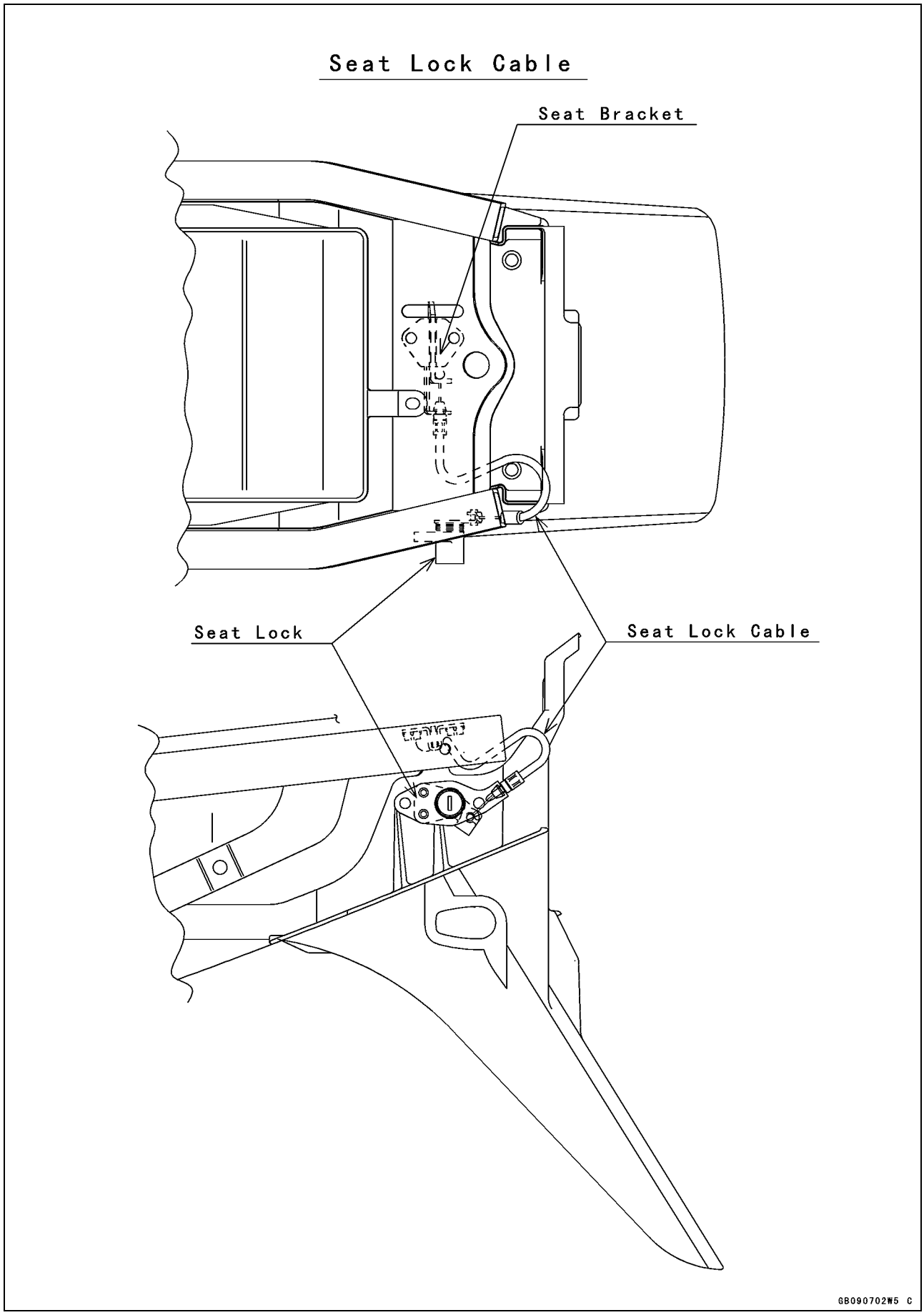
Cable, Wire, and Hose Routing (ZX1200-B1/B2)



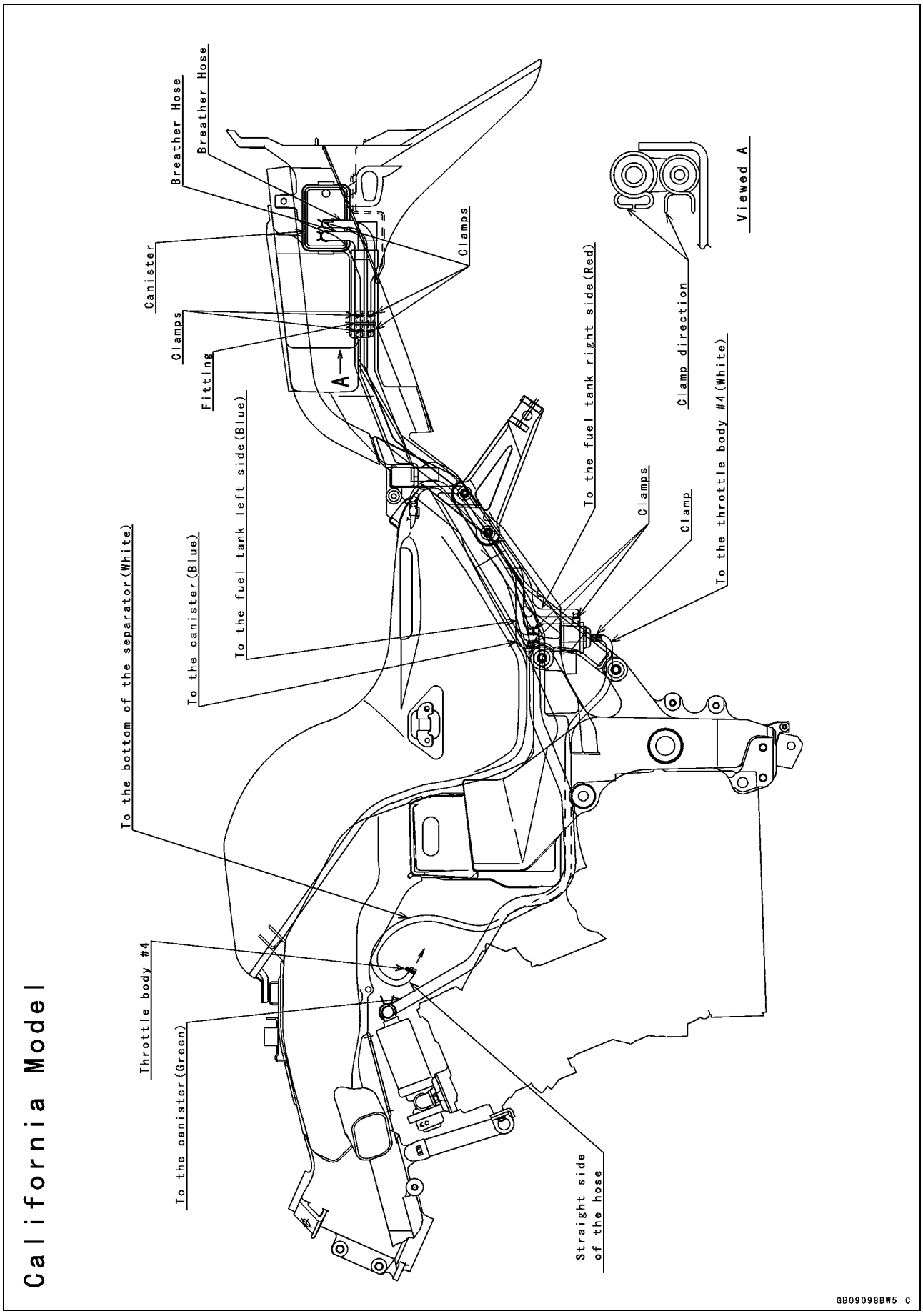
Cable, Wire, and Hose Routing (ZX1200-B1/B2)



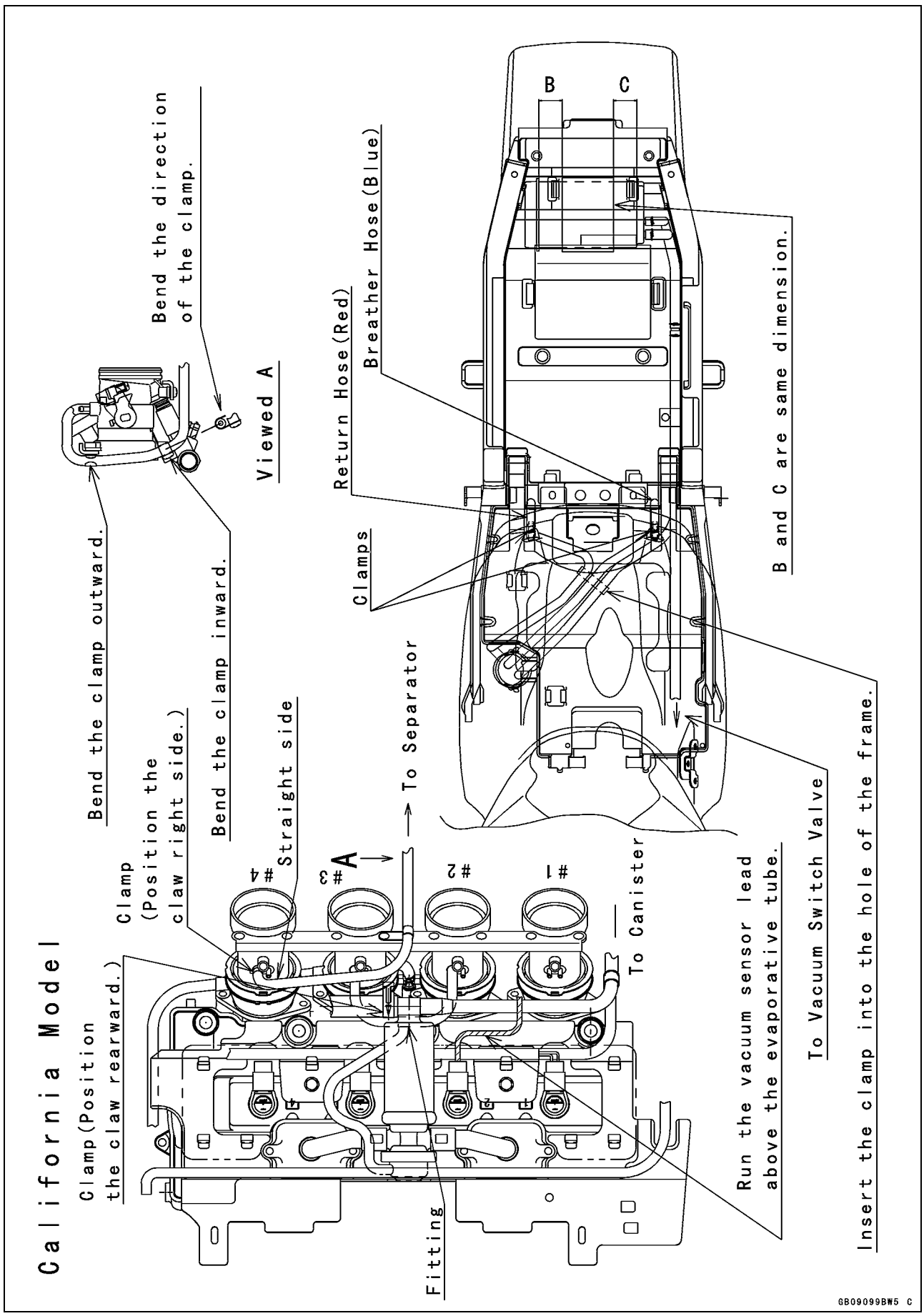
Cable, Wire, and Hose Routing (ZX1200-B1/B2)



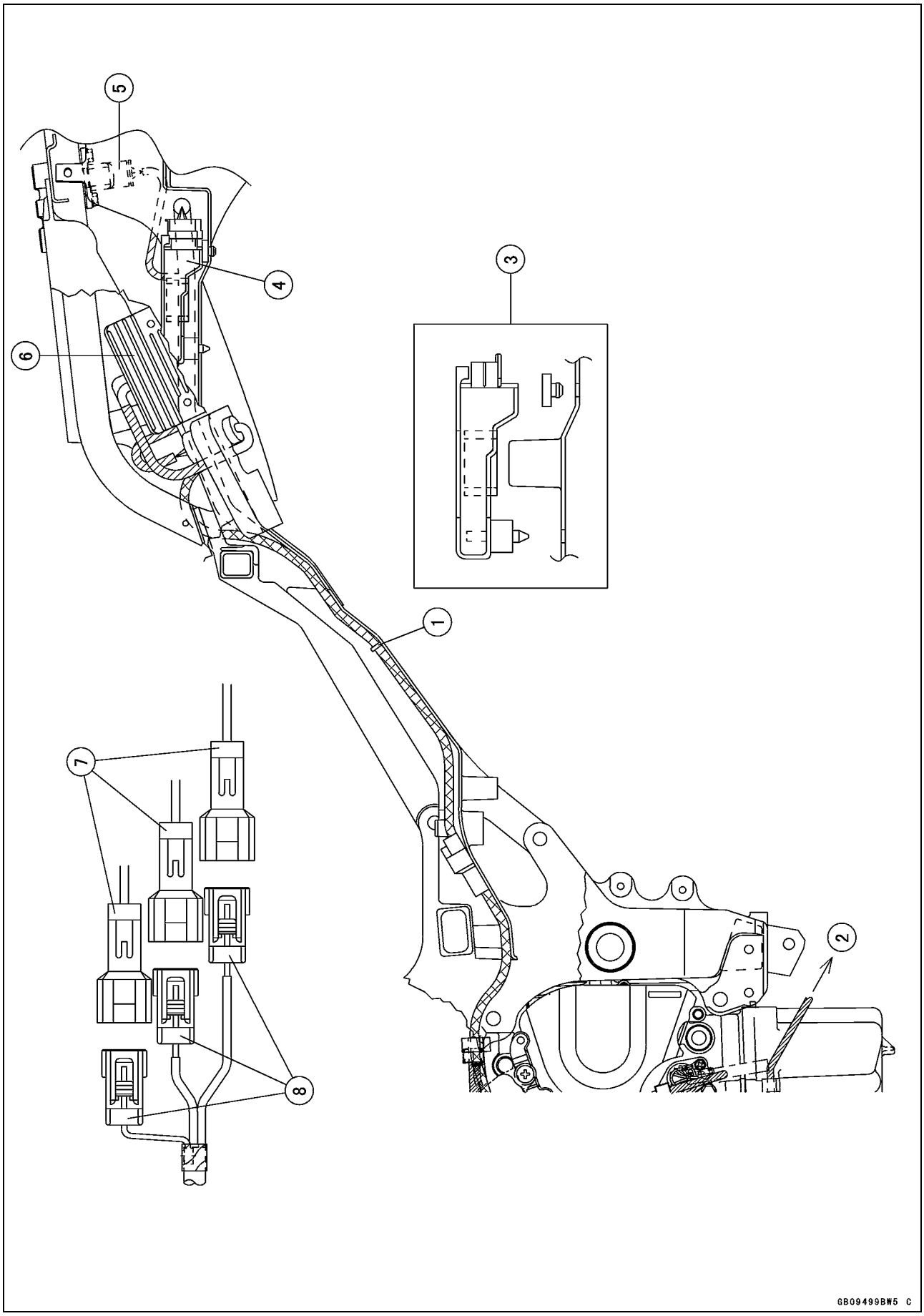
Cable, Wire, and Hose Routing (ZX1200-B1/B2)



Cable, Wire, and Hose Routing (ZX1200-B1/B2)



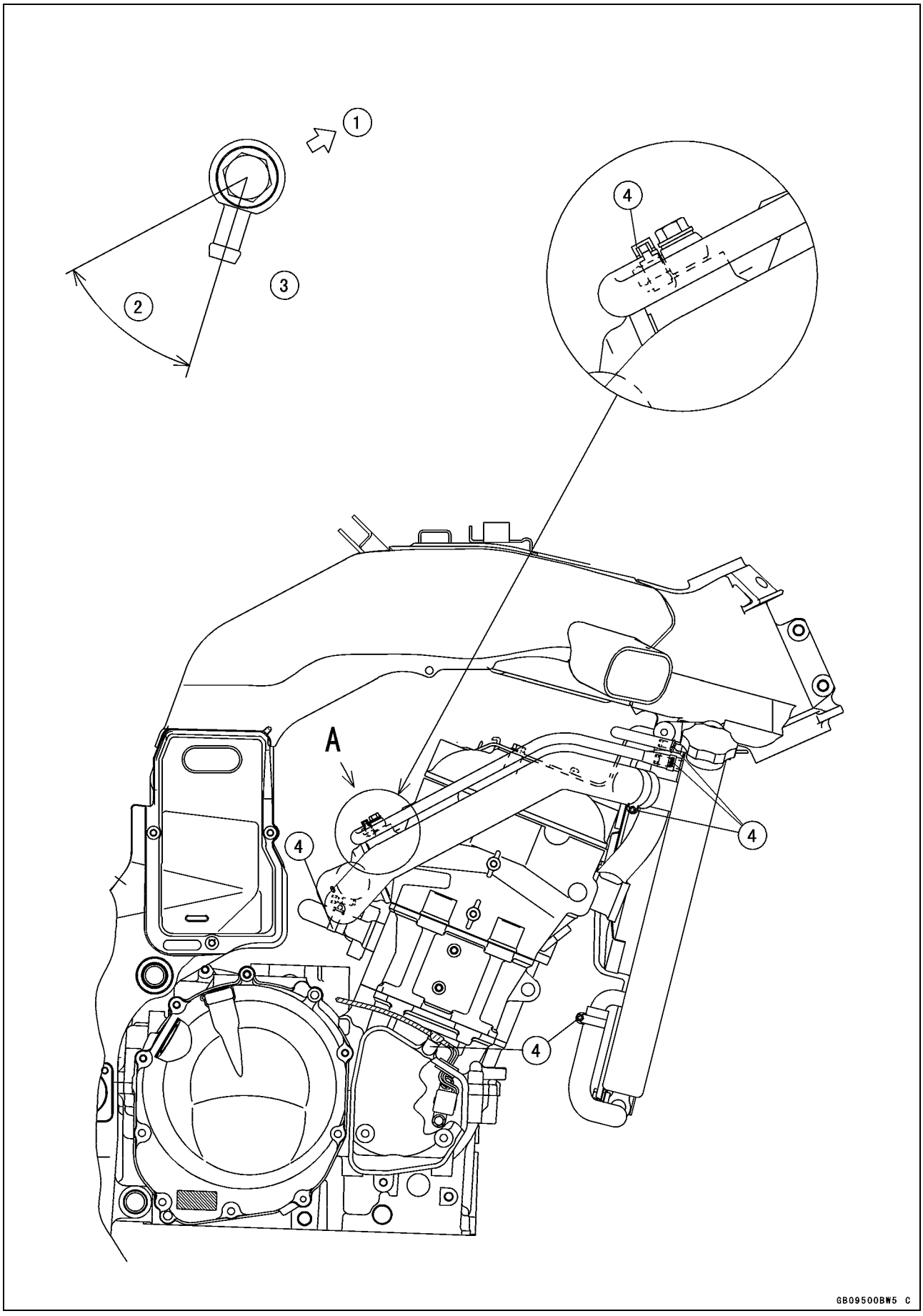
Cable, Wire, and Hose Routing (ZX1200-B3)



Cable, Wire, and Hose Routing (ZX1200-B3)

1. Clamp
2. To Side Stand Switch
3. Insert the dampers of the ECU into the holes of the fender.
4. ECU
5. Atmospheric Pressure Sensor
6. Regulator/rectifier
7. From Regulator/rectifier
8. From Alternator

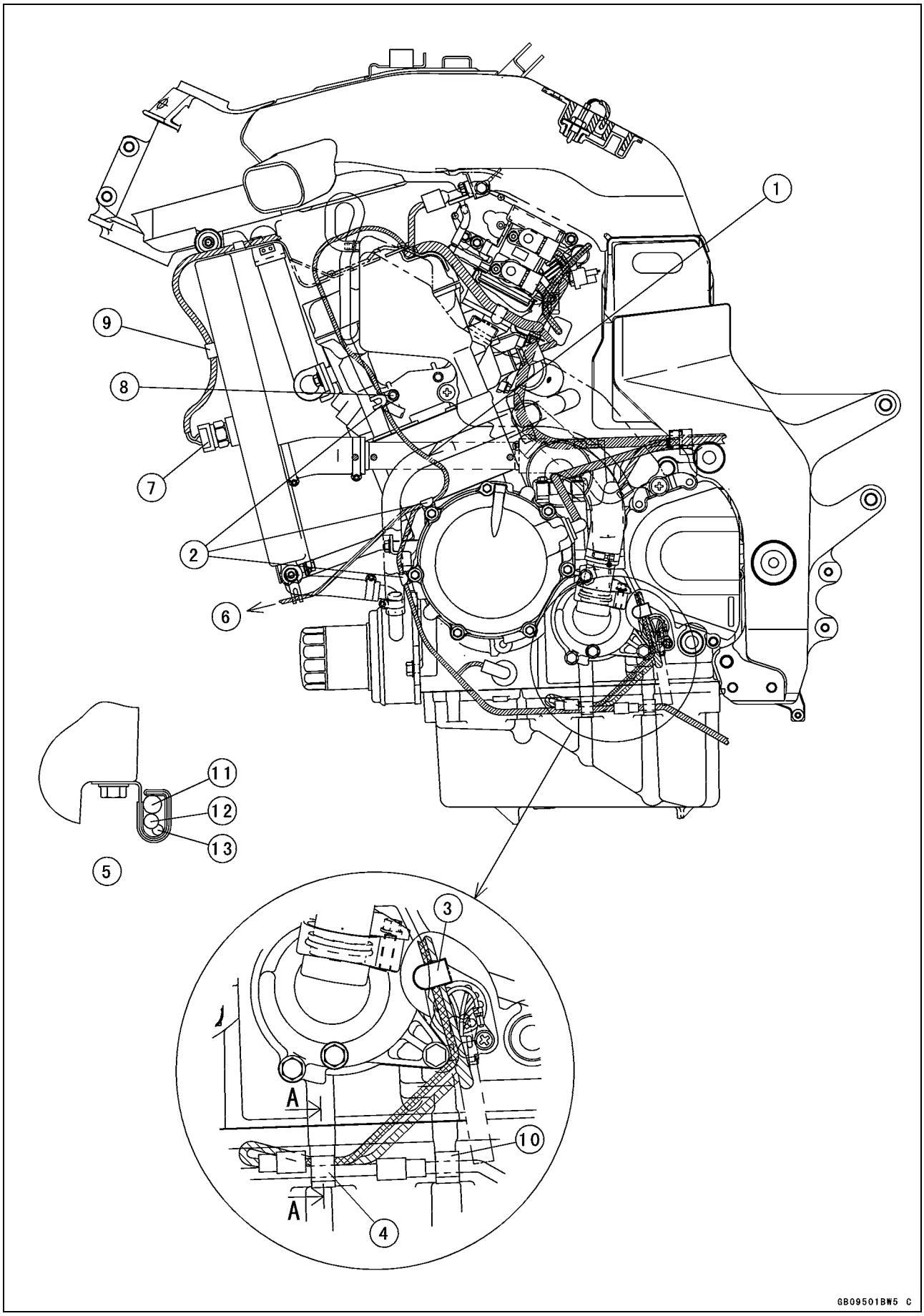
Cable, Wire, and Hose Routing (ZX1200-B3)



Cable, Wire, and Hose Routing (ZX1200-B3)

1. Front
2. About 45°
3. Viewed A
4. Clamp

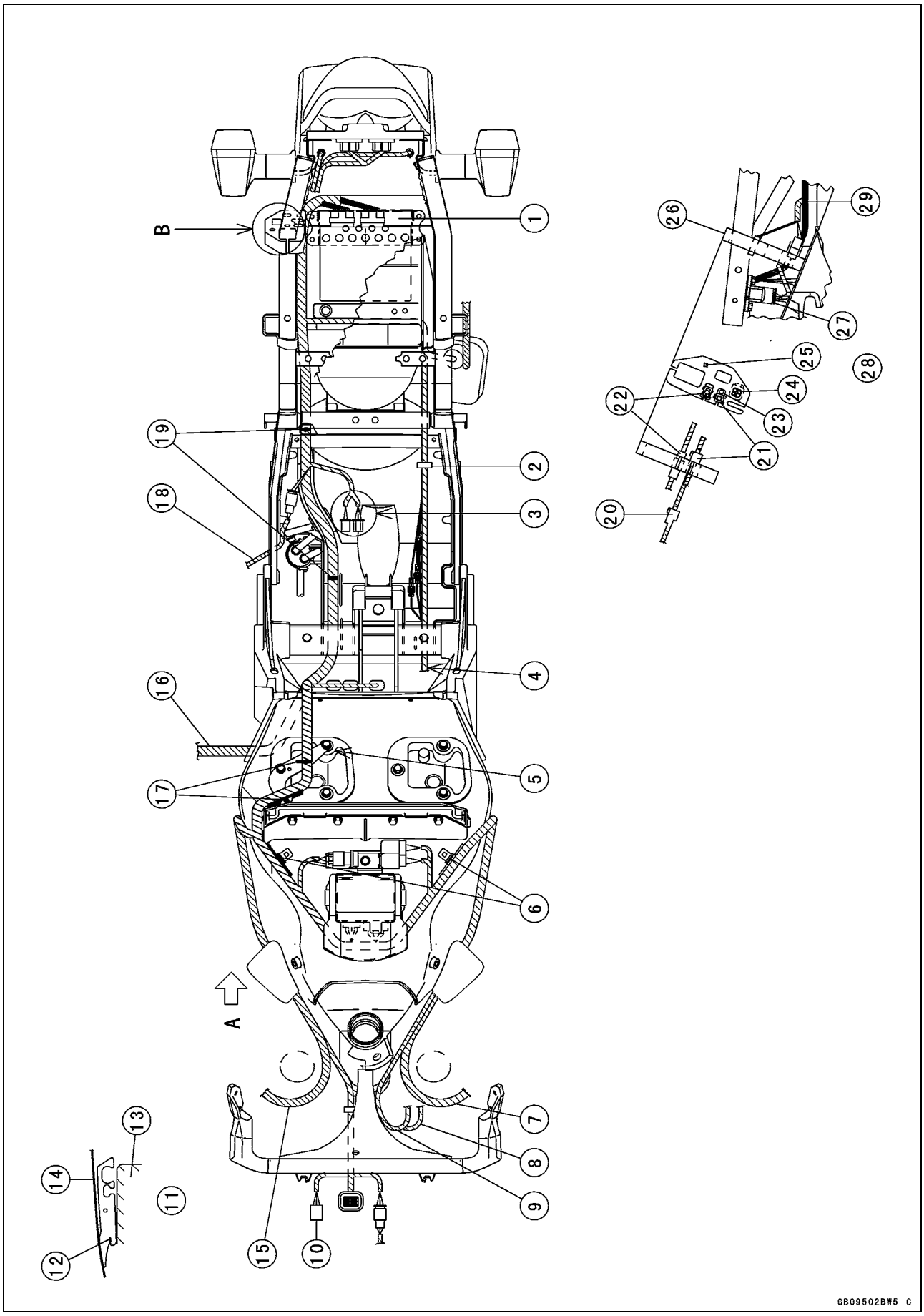
Cable, Wire, and Hose Routing (ZX1200-B3)



Cable, Wire, and Hose Routing (ZX1200-B3)

1. Run the horn lead between the water hose and water pipe.
2. Clamp
3. Clamp the leads so that the speed sensor lead is outside.
4. Clamp the speed sensor lead, gear position switch lead and sub harness.
5. Section A-A
6. To Horn
7. Radiator Fan Switch
8. Clamp the horn lead and reserve tank hose.
9. Clamp the fan switch lead.
10. Clamp the side stand switch lead.
11. Gear Position Switch Lead
12. Speed Sensor Lead
13. Sub Harness

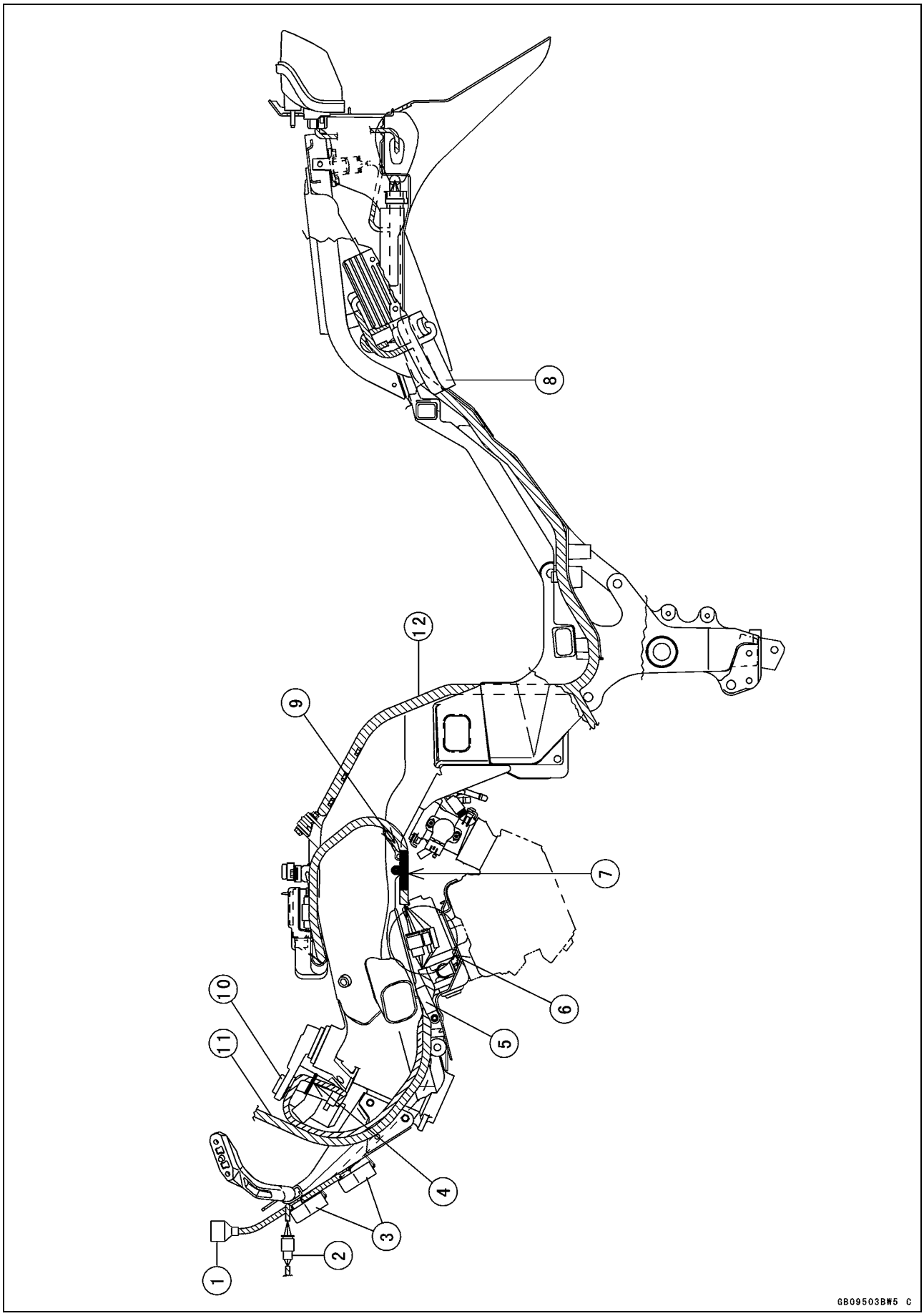
Cable, Wire, and Hose Routing (ZX1200-B3)



Cable, Wire, and Hose Routing (ZX1200-B3)

1. ECU Guard
2. Clamp
3. Connect the connectors of the fuel pump and fuel gauge leads.
4. To Alternator
5. Install the clamp with air cleaner cap.
6. Insert the harness into the clamps.
7. To Left Switch Housing
8. Immobilizer Antenna
9. Ignition Switch
10. Immobilizer Amplifier
11. Viewed A
12. Crankshaft Sensor Lead
13. Engine
14. Right Lower Fairing
15. To Right Switch Housing
16. To Battery Tray
17. Put the harness into the holes of the clamp.
18. To Rear Brake Light Switch
19. Put the harness into the holes of the fenders.
20. Right Turn Signal Light Connector
21. Left Turn Signal Light Connector
22. Tail/Brake Light Connector
23. Right Turn Signal Light Lead
24. Diagnosis Connector
25. Self-diagnosis Indicator Terminal
26. Clamp (Fit the clamp to the rear frame.)
27. Atmospheric Pressure Sensor Connector
28. Viewed B
29. Trim (Fit the trim to the rear fender rear.)

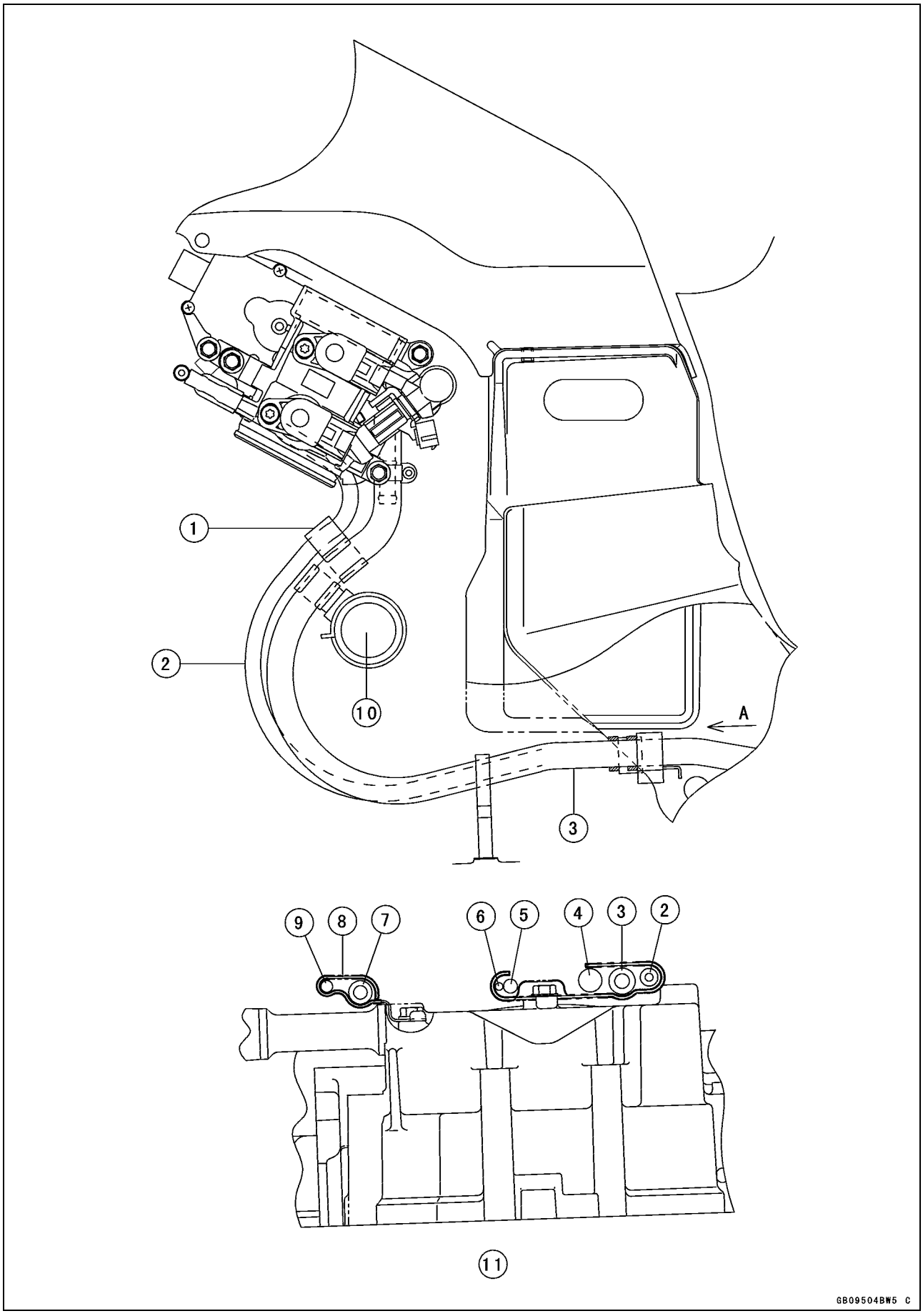
Cable, Wire, and Hose Routing (ZX1200-B3)



Cable, Wire, and Hose Routing (ZX1200-B3)

1. To Meter Assembly
2. Sub Harness
3. Headlight Relays
4. Band (Clamp the ignition switch lead on to the upper bracket.)
5. Clamp (Bend inside the tip of the left side clamp.)
6. Left Side (Connect the left switch housing lead connectors and ignition switch lead connectors.)
   Right Side (Connect the right switch housing connectors.)
7. Insert the clamp into the hole of the frame.
8. Clamp (Fit the clamp into the rear fender rear.)
9. Frame Ground (Install the ground with the air inlet pressure sensor bracket.)
10. Ignition Switch
11. To Left Switch Housing
12. Main Harness

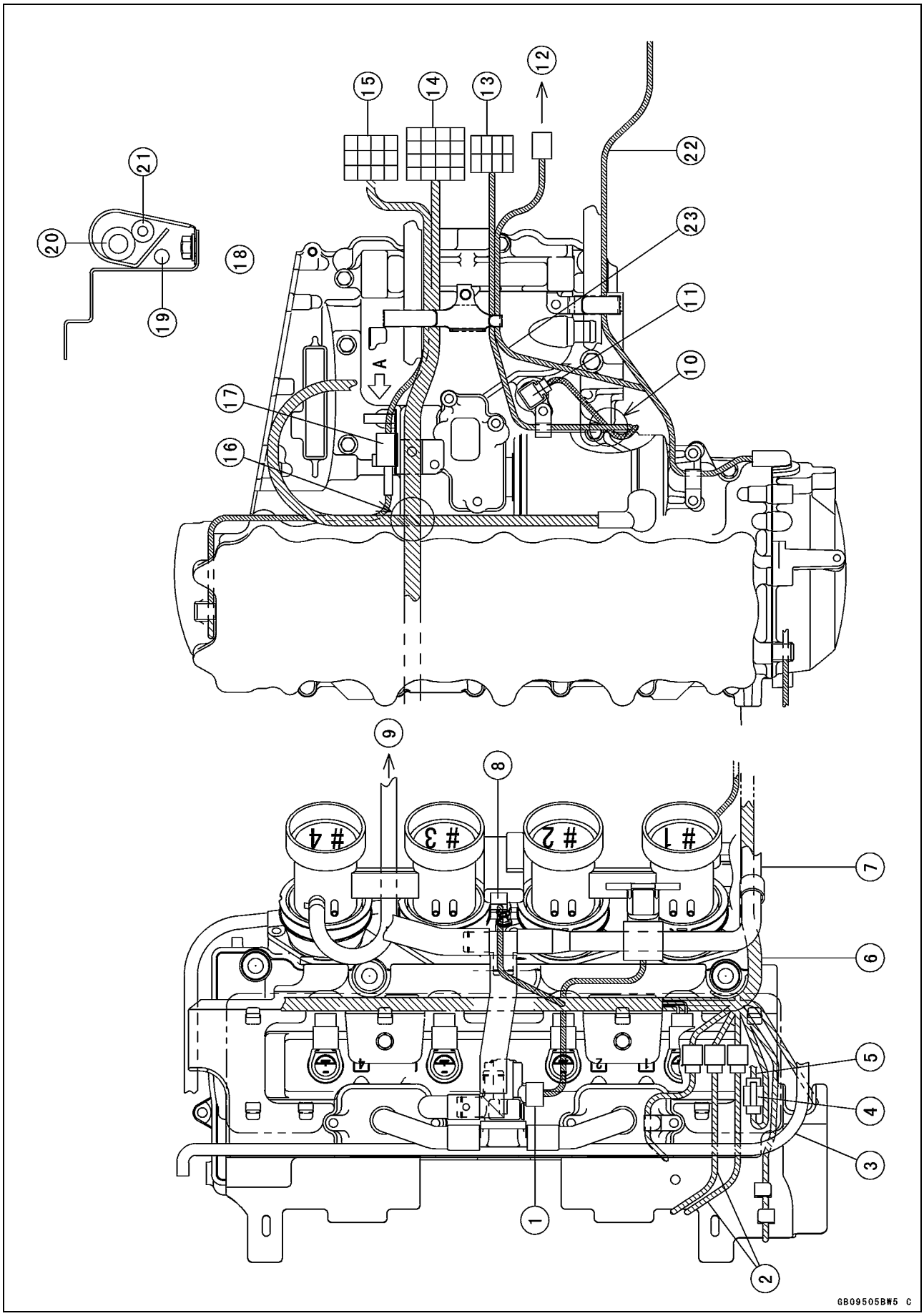
Cable, Wire, and Hose Routing (ZX1200-B3)



Cable, Wire, and Hose Routing (ZX1200-B3)

1. Clamp the vacuum hose and fuel hose.
2. Vacuum Hose
3. Fuel Hose
4. Engine Sub Harness
5. Gear Position Switch Lead
6. Alternator Lead
7. Tube (Air Switching Valve – Canister): California Model Only
8. Clamp
9. Alternator Lead
10. Water Hose
11. Viewed A

Cable, Wire, and Hose Routing (ZX1200-B3)



Cable, Wire, and Hose Routing (ZX1200-B3)

1. Air Switching Valve
2. Fan Leads
3. Run the water hose on the fan leads and fan switch lead.
4. Fan Relay (Signal) Connector
5. To Main Harness
6. Run the engine sub harness outside the lib of the head cover.
7. To Canister
8. Actuator
9. To Separator
10. Run the speed sensor lead back the bolt and under the gear position switch lead for prevention of the lead lift up.
11. Speed Sensor
12. To Headlight Relay
13. Gear Position Switch Lead Connector
14. Engine Sub Harness Connector
15. Engine Sub Harness Connector
16. Run the starter motor cable under the engine sub harness.
17. Fix the crankshaft sensor lead connector.
18. Viewed A
19. Crankshaft Sensor Lead
20. Fuel Hose
21. Tube (Throttle Body – Separator): California Model Only
22. Alternator Lead
23. Run the alternator lead under the fuel tube.

Unit Conversion Table

Prefixes for Units:

Prefix	Symbol	Power
mega	M	× 1 000 000
kilo	k	× 1 000
centi	c	× 0.01
milli	m	× 0.001
micro	μ	× 0.000001

Units of Mass:

kg	×	2.205	=	lb
g	×	0.03527	=	oz

Units of Volume:

L	×	0.2642	=	gal (US)
L	×	0.2200	=	gal (imp)
L	×	1.057	=	qt (US)
L	×	0.8799	=	qt (imp)
L	×	2.113	=	pint (US)
L	×	1.816	=	pint (imp)
mL	×	0.03381	=	oz (US)
mL	×	0.02816	=	oz (imp)
mL	×	0.06102	=	cu in

Units of Force:

N	×	0.1020	=	kg
N	×	0.2248	=	lb
kg	×	9.807	=	N
kg	×	2.205	=	lb

Units of Length:

km	×	0.6214	=	mile
m	×	3.281	=	ft
mm	×	0.03937	=	in

Units of Torque:

N·m	×	0.1020	=	kgf·m
N·m	×	0.7376	=	ft·lb
N·m	×	8.851	=	in·lb
kgf·m	×	9.807	=	N·m
kgf·m	×	7.233	=	ft·lb
kgf·m	×	86.80	=	in·lb

Units of Pressure:

kPa	×	0.01020	=	kgf/cm²
kPa	×	0.1450	=	psi
kPa	×	0.7501	=	cm Hg
kgf/cm²	×	98.07	=	kPa
kgf/cm²	×	14.22	=	psi
cm Hg	×	1.333	=	kPa

Units of Speed:

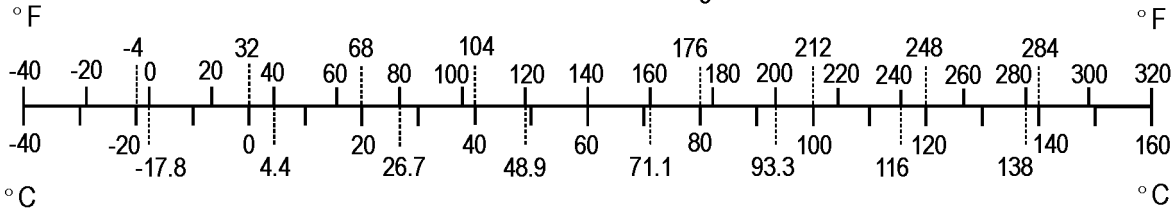
km/h	×	0.6214	=	mph

Units of Power:

kW	×	1.360	=	PS
kW	×	1.341	=	HP
PS	×	0.7355	=	kW
PS	×	0.9863	=	HP

Units of Temperature:

$$\frac{9(^\circ C + 40)}{5} - 40 = {}^\circ F \qquad \frac{5(^\circ F + 40)}{9} - 40 = {}^\circ C$$



Periodic Maintenance

Table of Contents

2-2 PERIODIC MAINTENANCE

Periodic Maintenance Chart

The scheduled maintenance must be done in accordance with this chart to keep the motorcycle in good running condition. **The initial maintenance is vitally important and must not be neglected.**

FREQUENCY / OPERATION	Whichever comes first ⬇ Every	*Odometer Reading × 1000 km (× 1000 mile) ➡ 1 (0.6)	6 (4)	12 (7.5)	18 (12)	24 (15)	30 (20)	36 (24)	Reference
Steering - inspect †		●	●	●	●	●	●	●	2-43
Steering stem bearing - lubricate	2 years					●			2-45
Brake hoses, connections - inspect †			●	●	●	●	●	●	2-28
Brake fluid level - inspect †	month	●	●	●	●	●	●	●	2-29
Brake fluid - change	2 years					●			2-29
Brake pad wear - inspect † #			●	●	●	●	●	●	2-30
Brake master cylinder cup and dust seal - replace	4 years								2-31
Caliper piston seal and dust seal - replace	4 years								2-31
Brake light switches - inspect †		●	●	●	●	●	●	●	2-31
Tire wear - inspect †			●	●	●	●	●	●	2-24
Front fork oil - change	2 years					●			2-32
Front fork oil leak - inspect †				●		●		●	2-42
Rear shock absorber oil leak - inspect †				●		●		●	2-42
Swingarm pivot, Unit-track linkage - lubricate				●		●		●	2-42
Clutch adjust - inspect †		●	●	●	●	●	●	●	2-22
Drive chain slack - inspect † #	1 000 km								2-25
Drive chain wear - inspect † #			●	●	●	●	●	●	2-26
Drive chain roller wear - inspect † #			●	●	●	●	●	●	2-27
Drive chain - lubricate #	600 km								2-28
Spark plug (e) - clean and gap †			●	●	●	●	●	●	2-45
Fuel hoses, connections - inspect †			●	●	●	●	●	●	2-6
Throttle control system (e) - inspect †		●	●	●	●	●	●	●	2-7
Idle speed (e) - inspect †		●		●		●		●	2-8
Engine vacuum sychronization (e) - inspect †				●		●		●	2-9
Air cleaner element (e) - clean † # (ZX1200-B1/B2)				●		●		●	2-13
Air cleaner element (e) - replace † # (ZX1200-B3)					●				2-13
Evaporative emission control system (e) (CAL) - inspect †		●	●	●	●	●	●	●	2-14
Air suction valve (e) - inspect †			●	●	●	●	●	●	2-17
Valve clearance (e) - inspect †				●		●		●	2-18
Cooling hoses, connections - inspect †		●							2-15
Coolant - change	2 years					●			2-15

Periodic Maintenance Chart

FREQUENCY / OPERATION	Whichever comes first ➡ / Every ⬇	*Odometer Reading × 1000 km (× 1000 mile) 1 (0.6)	6 (4)	12 (7.5)	18 (12)	24 (15)	30 (20)	36 (24)	Reference
Engine oil - change #	6 months	●	●	●	●	●	●	●	2-23
Oil filter - replace		●		●		●		●	2-23
General lubrication - perform				●		●		●	2-45
Nuts, bolts, and fasteners tightness - inspect †		●		●		●		●	2-47

#: Service more frequently when operating in severe conditions; dusty, wet, muddy, high speed, or frequent starting/stopping.
*: For higher odometer readings, repeat at the frequency interval established here.
†: Replace, add, adjust, clean, or torque if necessary.
CAL: California model only
e: Emission Related Items

Specifications

Item	Standard	Service Limit
Fuel System (DFI)		
Throttle Grip Free Play	2 ~ 3 mm (0.08 ~ 0.12 in.)	– – –
Idle Speed	1 000 ±50 r/min (rpm)	– – –
Throttle Body Vacuum	26 ±1.333 kPa (195 ±10 mmHg)	– – –
Air Cleaner Element:		
ZX1200-B1/B2	Polyurethane foam	– – –
ZX1200-B3	Filter paper	– – –
Air Cleaner Element Oil	SE, SF or SG SAE 30, or High-quality air filter oil	– – –
Cooling System		
Coolant:		
Type (Recommended)	Permanent type antifreeze	– – –
Color	Green	– – –
Mixed Ratio	Soft water 50%, Coolant 50%	– – –
Freezing Point	– 35°C (– 31°F)	– – –
Total Amount	3.6 L (3.8 US qt)	– – –
Engine Top End		
Valve Clearance:		
Exhaust	0.22 ~ 0.31 mm (0.0087 ~ 0.0122 in.)	– – –
Inlet	0.15 ~ 0.24 mm (0.0059 ~ 0.0094 in.)	– – –
Clutch		
Clutch Lever Free Play	2 ~ 3 mm (0.08 ~ 0.12 in.)	– – –
Engine Lubrication System		
Engine Oil:		
Type	API SE, SF or SG	– – –
	API SH or SJ with JASO MA	
Viscosity	SAE 10W-40	– – –
Capacity	2.5 L (2.6 US qt, when filter is not removed)	– – –
	2.8 L (3.0 US qt, when filter is removed)	– – –
	3.6 L (3.8 US qt, when engine is completely disassembled and dry)	– – –
Level	Between upper and lower level lines (after idling or running)	– – –
Tires		
Tread Depth:		
Front: DUNLOP D208FJ	4.0 mm (0.16 in.)	1 mm (0.04 in.) (AT, CH, DE): 1.6 mm (0.063 in.) Up to 130 km/h (80 mph)
Rear: DUNLOP D208J	5.4 mm (0.21 in.)	2 mm (0.08 in.) Over 130 km/h (80 mph) 3 mm (0.12 in.)

Specifications

Item	Standard	Service Limit
Air Pressure: (when Cold)		
Front	Up to 182 kg (401 lb) load: 290 kPa (2.9 kgf/cm², 42 psi)	– – –
Rear	Up to 182 kg (401 lb) load: 290 kPa (2.9 kgf/cm², 42 psi)	– – –
Final Drive		
Drive Chain Slack	25 ~ 35 mm (0.98 ~ 1.4 in.)	– – –
Drive Chain Roller Distance	Less than 6 mm (0.236 in.)	6.2 mm (0.244 in.)
Drive Chain 20-link Length	317.5 ~ 318.2 mm (12.50 ~ 12.53 in.)	323 mm (12.7 in.)
Brakes		
Brake Fuid:		
Grade	DOT4	– – –
Brake Pad Lining Thickness:		
Front and Rear	4 mm (0.12 in.)	1 mm (0.04 in.)
Brake Light Timing:		
Front	Pulled ON	– – –
Rear	ON after about 10 mm (0.39 in.) of pedal travel	– – –
Suspension		
Fork Oil:		
Viscosity	KAYABA KHL15-10 (SAE 0 W)	– – –
Amount (per Side):		
When Changing Oil	approx. 420 mL (14.2 US oz)	– – –
After Disassembly and Completely Dry	490 ±4 mL (16.6 ±0.1 US oz)	– – –
Fork Oil Level:	93 ±2 mm (3.66 ±0.08 in.)	– – –
(Fully Compressed, without Spring)	(from the top of the outer tube)	
Electrical System		
Spark Plug Gap	0.7 ~ 0.9 mm (0.028 ~ 0.035 in.)	– – –

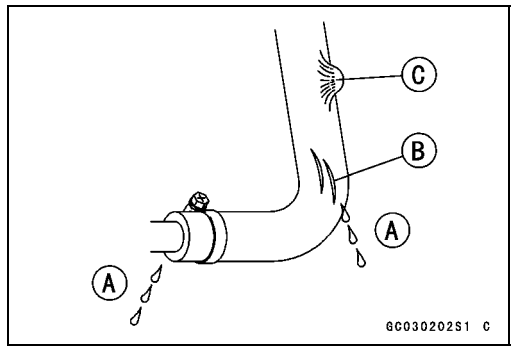
AT: Republic of Austria
CH: Swiss Confederation
DE: Federal Republic of Germany

Special Tools - Steering Stem Nut Wrench: 57001-1100
Jack: 57001-1238
Oil Filter Wrench: 57001-1249
Fork Piston Rod Puller, M12 × 1.25: 57001-1289
Fork Oil Level Gauge: 57001-1290
Pilot Screws Adjuster, C: 57001-1292
Fork Spring Compressor Set: 57001-1452
Fork Spring Compressor: 57001-1587

Periodic Maintenance Procedures

Fuel System (DFI)

Fuel Hose and Connection Inspection

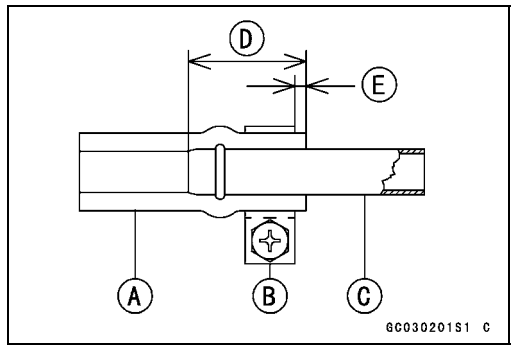


○The fuel hoses are designed to be used throughout the motorcycle's life without any maintenance, however, if the motorcycle is not properly handled, the high pressure inside the fuel line can cause fuel to leak [A] or the hose to burst. Remove the fuel tank (see Fuel System (DFI) chapter) and check the fuel hose.

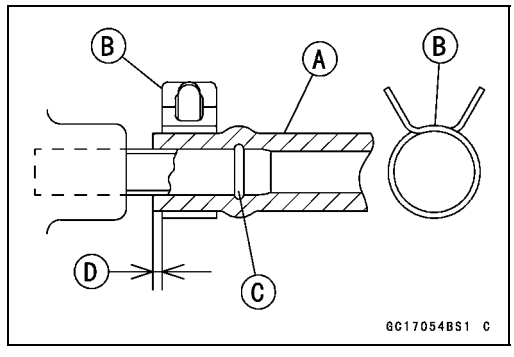
★Replace the fuel hose if any fraying, cracks [B] or bulges [C] are noticed.

- Check that the hoses are securely connected and clamps are tightened correctly.
- When installing, route the hoses according to Cable, Wire, and Hose Routing section in the General Information chapter.
- When installing the fuel hoses, avoid sharp bending, kinking, flattening or twisting, and route the fuel hoses with a minimum of bending so that the fuel flow will not be obstructed.

★Replace the hose if it has been sharply bent or kinked.



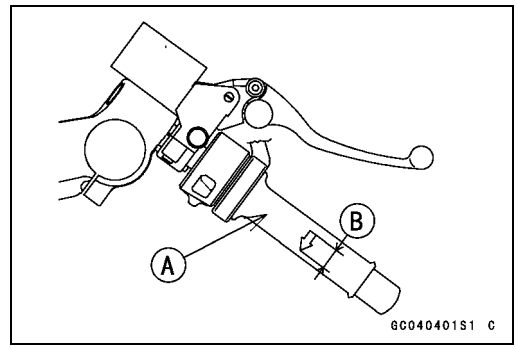
- Install the hose clamps in the position shown, and securely tighten the clamp screws to the specified torque. Check the fuel system for leaks after hose installation.
  Fuel Hose [A]
  Clamp [B]
  Fuel Pipe [C]
  18 ~ 22 mm (0.70 ~ 0.87 in.) [D]
  2 ~ 3 mm (0.08 ~ 0.12 in.) [E]



- Fit the fuel hose [A] onto the pipe fully and install the plate clamp [B] beyond the raised rib [C].
  1 ~ 2 mm (0.04 ~ 0.08 in.)

Periodic Maintenance Procedures

Throttle Control System Inspection



- Check the throttle grip free play [B].

★If the free play is incorrect, adjust the throttle cables.

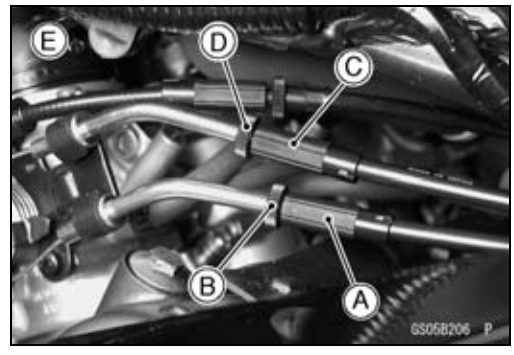
Throttle Grip Free Play
Standard: 2 ~ 3 mm (0.08 ~ 0.12 in.)

- Check that the throttle grip [A] moves smoothly from full open to close, and the throttle closes quickly and completely in all steering position by the return spring.

★If the throttle grip does not return properly, check the throttle cables routing, grip free play, and cable damage. Then lubricate the throttle cable.

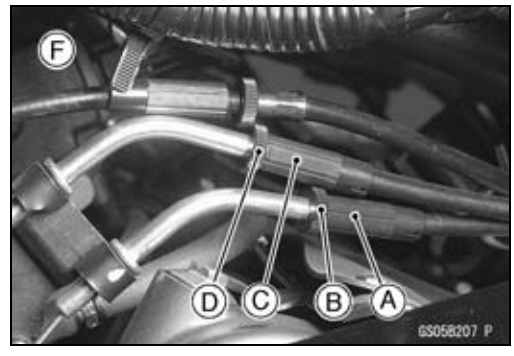
- Run the engine at the idle speed, and turn the handlebar all the way to the right and left to ensure that the idle speed does not change.

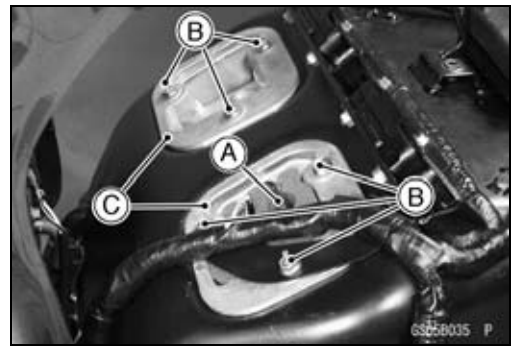
★If the idle speed increase, check the throttle cable free play and the cables routing.



- Remove the right lower inner cover (see Frame chapter).
- Loosen the locknuts.
- Screw both throttle cable adjuster to give the throttle grip plenty of play.
- Completely close the throttle grip, turn the accelerator cable adjuster [A] to eliminate any cable free play, and tighten the adjuster locknut [B].
- Turn the decelerator cable adjuster [C] to adjust the throttle grip free paly to 2 ~ 3 mm (0.08 ~ 0.12 in.).
- Tighten the deaccelerator cable locknut [D] securely.

★If the free paly cannot be adjusted with the adjusters, replace the cable.
ZX1200-B1/B2 [E]
ZX1200-B3 [F]



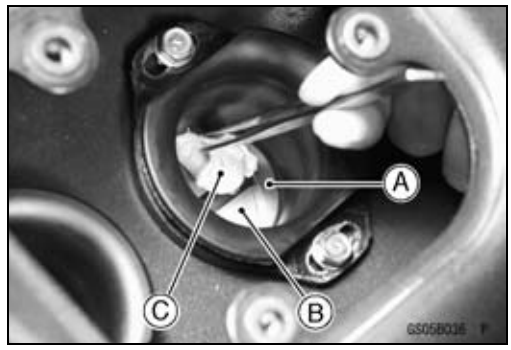


- Check the throttle bore for cleanliness as follows:

○Set up the fuel tank (see Fuel System (DFI) chapter).
○Disconnect the inlet air temperature sensor connector [A].
○Remove:
Air Cleaner Cap Bolts [B]
Right and Left Air Cleaner Caps [C]

Periodic Maintenance Procedures

○In accordance with the Periodic Maintenance Chart, check the throttle bores [A] at the butterfly valves [B] and around them for carbon deposits by opening the valves.
★If any carbon accumulates, wipe the carbon off the throttle bores around the butterfly valves, using a lint-free cloth [C] penetrated with high-flash point solvent.



Idle Speed Inspection

- Start the engine and warm it up thoroughly.
- With the engine idling, turn the handlebar to both sides [A].

★If handlebar movement changes the idle speed, the throttle cables may be improperly adjusted or incorrectly routed, or damaged. Be sure to correct any of these conditions before riding (see Cable Routing Section in General Information chapter).

⚠ WARNING

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

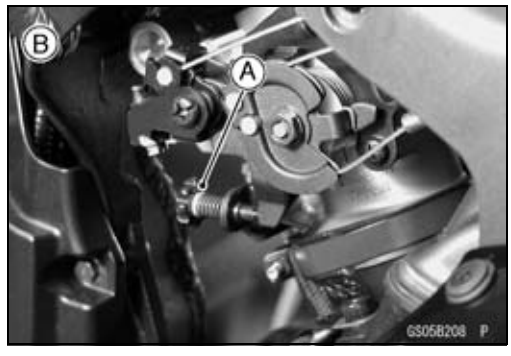
- Check the idle speed.

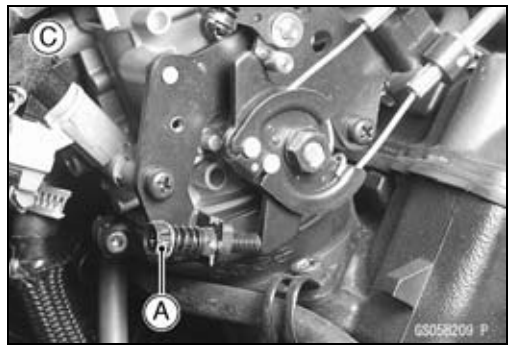
★If the idle speed is out of specified range, adjust it.

Idle Speed
Standard: 1 000 ±50 r/min (rpm)

- Start the engine and warm it up thoroughly.
- Turn the adjusting screw [A] until the idle speed is correct.

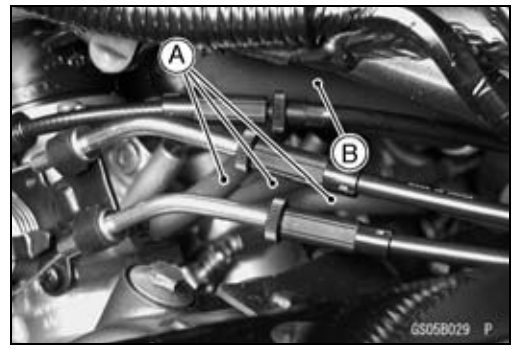
○Open and close the throttle a few times to make sure that the idle speed is within the specified range. Readjust if necessary.
ZX1200-B1/B2 [B]
ZX1200-B3 [C]





Periodic Maintenance Procedures

Engine Vacuum Synchronization Inspection
ZX1200-B1/B2

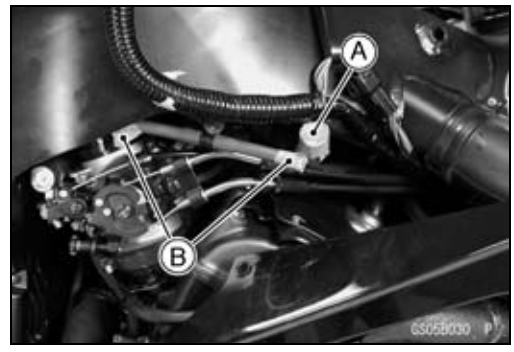


NOTE

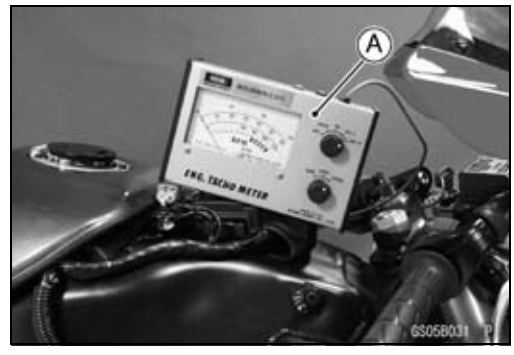
○*These procedures are explained on the assumption that the inlet and exhaust system of the engine are in good condition.*

- Remove the lower inner covers (see Frame chapter).
- Set up the fuel tank (see Fuel System (DFI) chapter).
- Pull out the vacuum switch valve hose [B] from the air cleaner.
- Pull off the three vacuum hoses [A] and rubber cap from the right fittings on the throttle bodies.

CAUTION
Do not remove the atmospheric pressure hose.



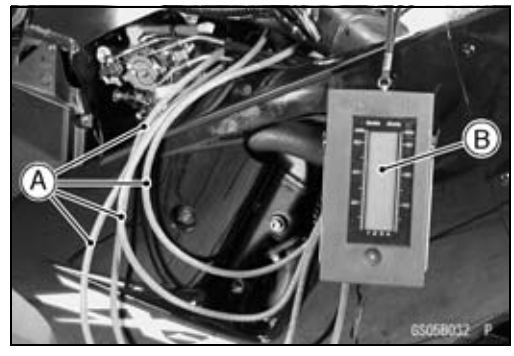
- Completely close the removed hoses [A] and [B] of the clean air system with the proper plugs.
- Completely close the clean air system hole of the air cleaner with the proper plug.



- Start the engine and warm it up thoroughly.
- Check the engine speed, using the engine revolution tester [A] for high accuracy.

★If the engine speed is out of 1 000 rpm, set the engine speed to
1 000 rpm.

CAUTION
Do not adjust the engine speed by the tachometer in the meter unit.



- Connect the vacuum gauge hoses [A] to the right fittings on the throttle bodies.
- Connect the vacuum gauge hoses to the vacuum gauge [B].
- Start the engine and left it idle to measure the inlet vacuum.

★If the vacuum is incorrect, adjust the synchronization.

Engine Vacuum
Standard: 26 ±1.333 kPa (195 ±10 mmHg) at Idle Speed 1 000 ±50 r/min (rpm)

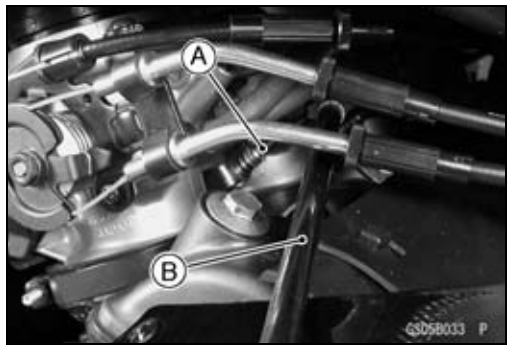
Periodic Maintenance Procedures

● Turn the adjusting screw [A] to synchronize the throttle valves.

○First synchronize the left two or the right two throttle valves by means of the left and right adjusting screws. Then synchronize the left two throttle valves and the right two throttle valves using the center adjusting screw.

★If the throttle valves synchronization cannot be obtained by using the adjusting screws, check for dirt or blockage, and then check the inlet parts connection.

Special Tool - Pilot Screw Adjuster, C: 57001-1292 [B]



● Check the throttle valve synchronization again

NOTE

○*Do not turn the bypass screws [A] carelessly during throttle valve synchronization. You may cause poor running at low engine speed or irregular throttle sensor output voltage.*

● Remove the vacuum gauge hoses and install the removed parts.

● Check the idle speed.

ZX1200-B3

NOTE

○*These procedures are explained on the assumption that the inlet and exhaust systems of the engine are in good condition.*

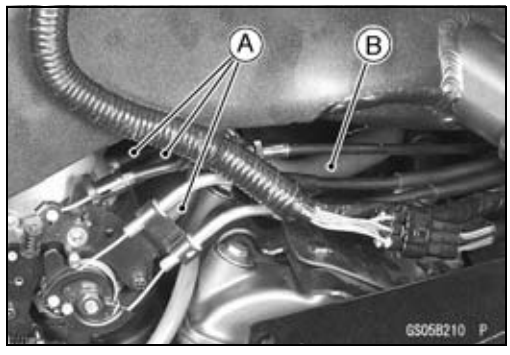
● Situate the motorcycle so that it is vertical.

● Remove the lower inner covers (see Frame chapter).

● Set up the fuel tank (see Fuel System (DFI) chapter).

● Pull off the vacuum hoses [A] and rubber cap(s) from the right fittings of each throttle body.

● Pull off the air switching valve hose [B] from the air cleaner housing.



CAUTION
Do not remove the atmospheric pressure hose.

● Plug:
Air Switching Valve Hose [A] and its Air Cleaner Housing Hole