YAMAHA 2004

MOTOMATRIX

# YZF-R6(S)

5SL1-AE2

# SUPPLEMENTARY SERVICE MANUAL

# FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and data for the YZF-R6 (S) 2004. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

**YZF-R6 (R) 2003 SERVICE MANUAL: 5SL1-AE1**

**YZF-R6 (S) 2004**
**SUPPLEMENTARY**
**SERVICE MANUAL**

EAS00002

# NOTICE

This manual was produced by the Yamaha Motor Company, Ltd. primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to include all the knowledge of a mechanic in one manual. Therefore, anyone who uses this book to perform maintenance and repairs on Yamaha vehicles should have a basic understanding of mechanics and the techniques to repair these types of vehicles. Repair and maintenance work attempted by anyone without this knowledge is likely to render the vehicle unsafe and unfit for use.

Yamaha Motor Company, Ltd. is continually striving to improve all of its models. Modifications and significant changes in specifications or procedures will be forwarded to all authorized Yamaha dealers and will appear in future editions of this manual where applicable.

**NOTE:**

Designs and specifications are subject to change without notice.

EAS00004

## IMPORTANT MANUAL INFORMATION

Particularly important information is distinguished in this manual by the following.

⚠ The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

**⚠ WARNING** Failure to follow WARNING instructions could result in severe injury or death to the motorcycle operator, a bystander or a person checking or repairing the motorcycle.

**CAUTION:** A CAUTION indicates special precautions that must be taken to avoid damage to the motorcycle.

**NOTE:** A NOTE provides key information to make procedures easier or clearer.

EAS00007

# HOW TO USE THIS MANUAL

This manual is intended as a handy, easy-to-read reference book for the mechanic. Comprehensive explanations of all installation, removal, disassembly, assembly, repair and check procedures are laid out with the individual steps in sequential order.

① The manual is divided into chapters. An abbreviation and symbol in the upper right corner of each page indicate the current chapter.
Refer to “SYMBOLS”.

② Each chapter is divided into sections. The current section title is shown at the top of each page, except in Chapter 3 (“PERIODIC CHECKS AND ADJUSTMENTS”), where the sub-section title(s) appears.

③ Sub-section titles appear in smaller print than the section title.

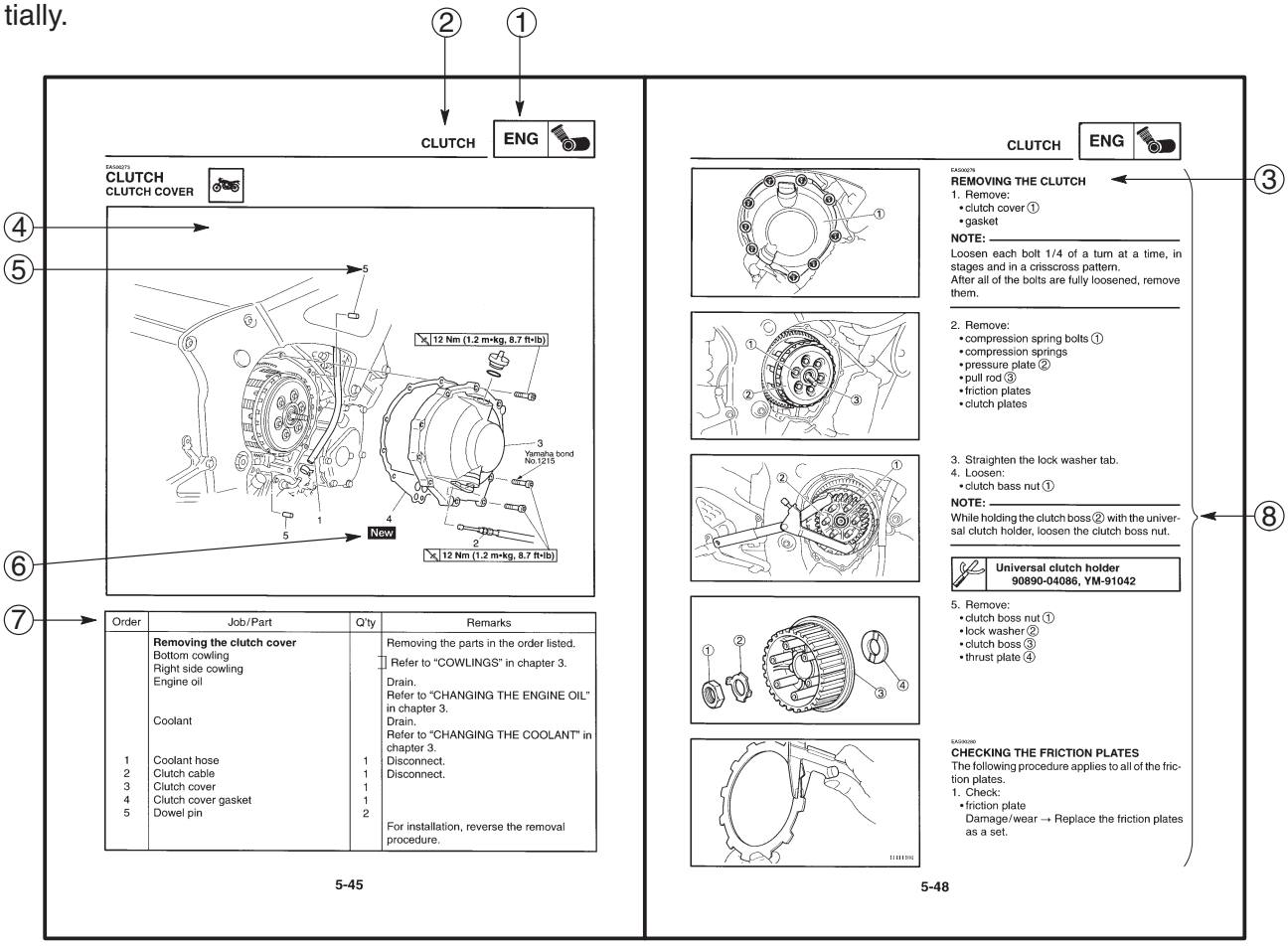
④ To help identify parts and clarify procedure steps, there are exploded diagrams at the start of each removal and disassembly section.

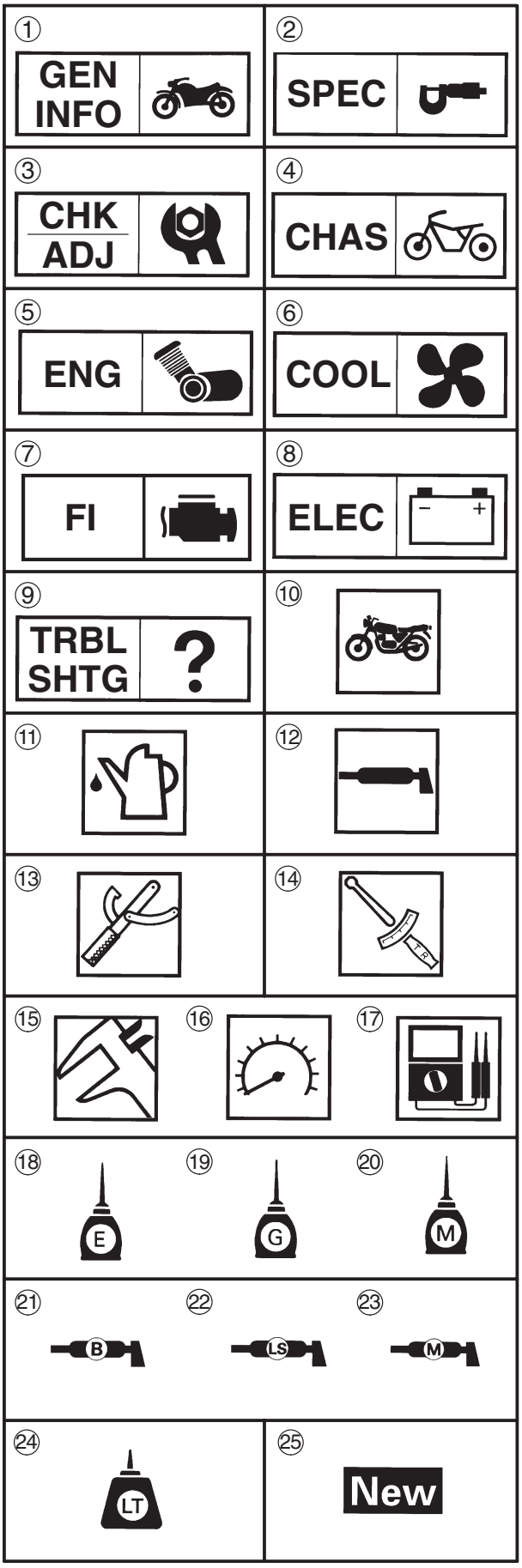
⑤ Numbers are given in the order of the jobs in the exploded diagram. A circled number indicates a disassembly step.

⑥ Symbols indicate parts to be lubricated or replaced.
Refer to “SYMBOLS”.

⑦ A job instruction chart accompanies the exploded diagram, providing the order of jobs, names of parts, notes in jobs, etc.

⑧ Jobs requiring more information (such as special tools and technical data) are described sequentially.






EAS00008

## SYMBOLS

The following symbols are not relevant to every vehicle.

Symbols ① to ⑨ indicate the subject of each chapter.

① General information
② Specifications
③ Periodic checks and adjustments
④ Chassis
⑤ Engine
⑥ Cooling system
⑦ Fuel injection system
⑧ Electrical system
⑨ Troubleshooting

Symbols ⑩ to ⑰ indicate the following.

⑩ Serviceable with engine mounted
⑪ Filling fluid
⑫ Lubricant
⑬ Special tool
⑭ Tightening torque
⑮ Wear limit, clearance
⑯ Engine speed
⑰ Electrical data

Symbols ⑱ to ㉓ in the exploded diagrams indicate the types of lubricants and lubrication points.

⑱ Engine oil
⑲ Gear oil
⑳ Molybdenum-disulfide oil
㉑ Wheel-bearing grease
㉒ Lithium-soap- based grease
㉓ Molybdenum-disulfide grease

Symbols ㉔ to ㉕ in the exploded diagrams indicate the following.

㉔ Apply locking agent (LOCTITE®)
㉕ Replace the part

# CONTENTS

# SPECIFICATIONS

## GENERAL SPECIFICATIONS

| Item | Standard | Limit |
|---|---|---|
| **Model code** | 5SLB (EUR), 5SLC (F), 5SLG/5SLL (AUS) | ••• |

## ENGINE SPECIFICATIONS

| Item | Standard | Limit |
|---|---|---|
| **Throttle bodies** | | |
| ID mark | 5SL1 00 (5SLB/5SLG/5SLL),<br>5SL2 20 (5SLC) | ••• |
| Throttle valve size | #100 | ••• |

## CHASSIS SPECIFICATIONS

| Item | Standard | Limit |
|---|---|---|
| **Front tire** | | |
| Model (manufacturer) | Pilot SPORT N (MICHELIN)<br>D208 FJ (DUNLOP) | ••• |
| **Rear tire** | | |
| Model (manufacturer) | Pilot SPORT B (MICHELIN)<br>D208 AJ (DUNLOP) | ••• |

## ELECTRICAL SPECIFICATIONS

| Item | Standard | Limit |
|---|---|---|
| **Ignition system** | | |
| CDI unit model (manufacturer) | F8T814 (MITSUBISHI)<br>(5SLB/5SLG/5SLL)<br>F8T815 (MITSUBISHI) (5SLC) | •••<br><br>••• |
| **Ignition coils** | | |
| Model (manufacturer) | F6T549 (MITSUBISHI) | ••• |
| Primary coil resistance | 0.24 ~ 0.32 Ω at 20°C (68°F) | ••• |
| Secondary coil resistance | 5.0 ~ 6.8 kΩ at 20°C (68°F) | ••• |

# TIGHTENING TORQUES

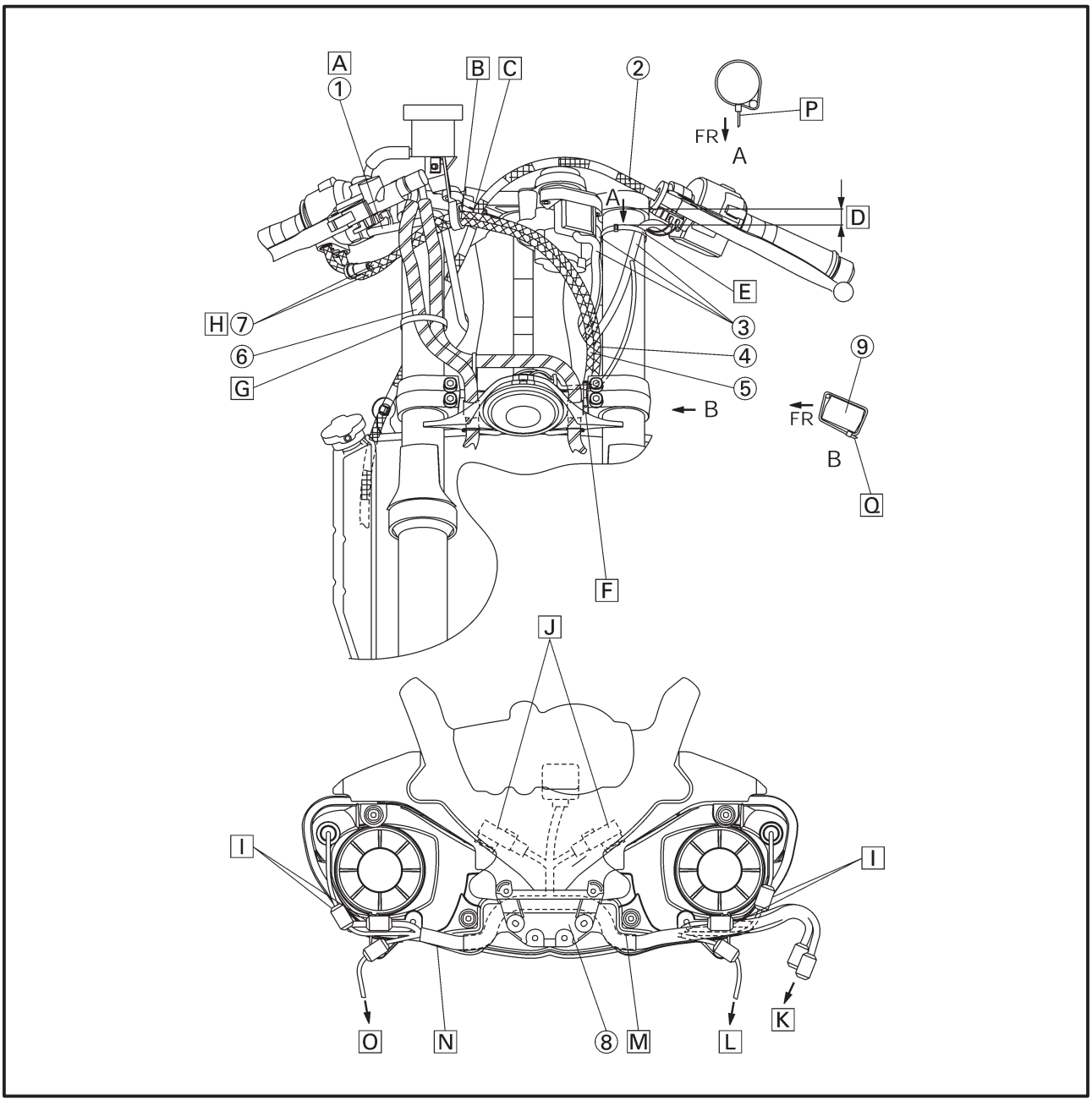
## ENGINE TIGHTENING TORQUES

| Item | Fastener | Thread size | Q'ty | Tightening torque | | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | | Nm | m•kg | ft•lb | |
| Oil cooler | Bolt | M20 | 1 | 63 | 6.3 | 46 | E Yamaha bond No.1215 |
| Cylinder identification sensor | Bolt | M6 | 1 | 6.0 | 0.6 | 4.3 | |

## CABLE ROUTING

① Right handlebar switch lead
② Clutch cable
③ Immobilizer unit lead, main switch lead and left handlebar switch lead
④ Throttle cable (return side)
⑤ Throttle cable (pull side)
⑥ Front brake hoses
⑦ Throttle cables
⑧ Joint
⑨ Under bracket

[A] Pass the right handlebar switch lead inside the front brake hoses and over the throttle cables.
[B] Install the throttle cables to the hook so that the pulling side of the throttle cables is routed downward.
[C] Pass the clutch cable through the guide.
[D] Plastic locking tie shall be positioned at 10 mm (0.39 in.) below from the upper bracket.
[E] Clamp the left handlebar switch lead to the front fork with the plastic locking tie and cut the tip of the tie. Clamp it to the protector section.



F Pass the horn lead by the outside of the throttle cable and clamp it to the forefront of upper face of the under bracket. Next, route it under the front brake hose and clamp it to the pawl of the under cover.

G Clamp it at the position of 40 (1.57 in.) to 60 mm (2.36 in.) from the upper face of the under bracket with the plastic locking tie. Cut the surplus part of the clamp tip leaving 2 (0.08 in.) to 4 mm (0.16 in.). Point the tip of the clamp to the outside of vehicle.

H Pass the throttle cables inside the front brake hoses.

I Set in the coupler between the head light's hollow section and the duct.

J Install the relay to the rib of the head light. (Location for the left and right relays is alternative.)

K To the wire harness

L To the front turn signal light (right)

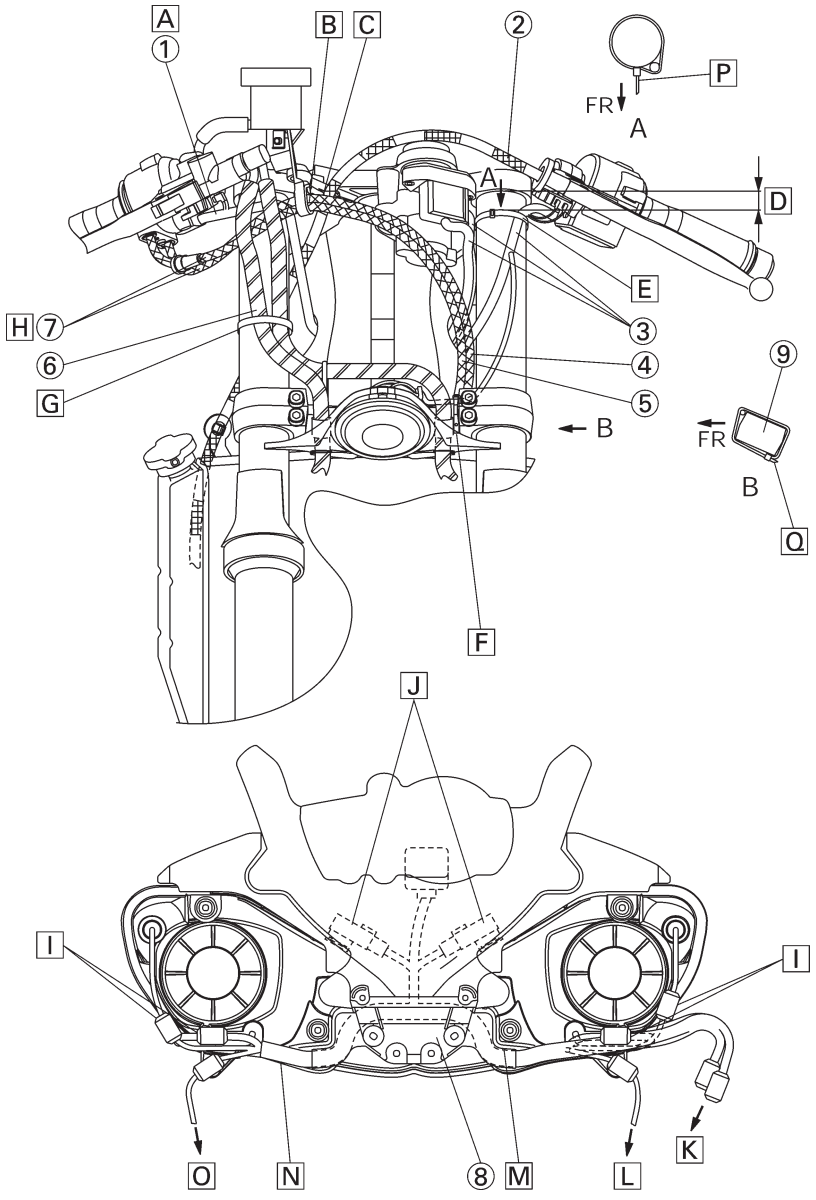
M Set the sub wire harness in the joint.

N Do not catch the sub wire harness when the duct is assembled.

O To the front turn signal light (left)

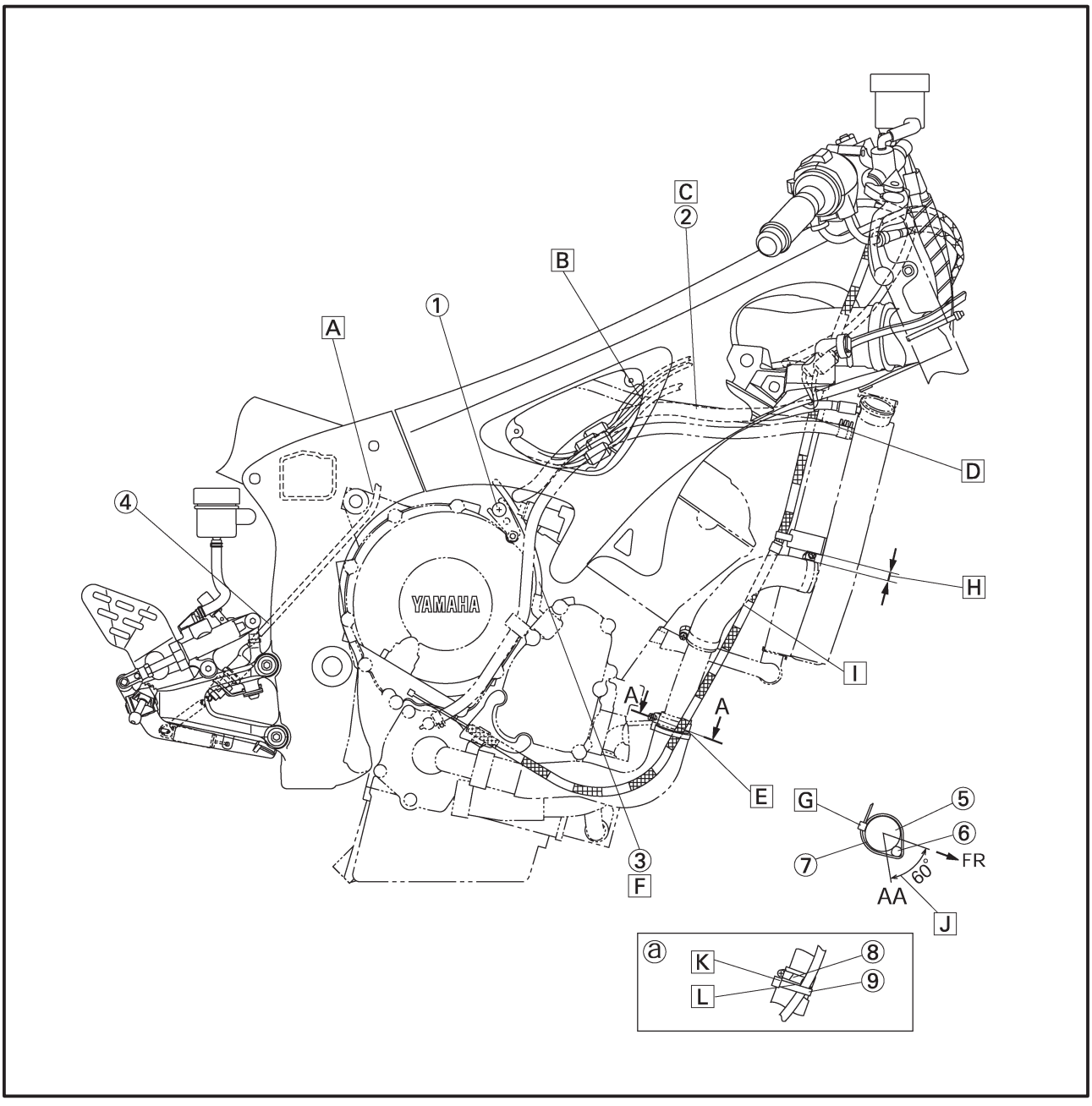
P Point the tip of the plastic locking tie to the front side of the vehicle. Cut the tip leaving 2 ~ 10 mm (0.08 ~ 0.39 in).

Q Point the tip of the plastic locking tie under the under bracket and rear side of the vehicle. Cut the tip leaving 2 ~ 10 mm (0.08 ~ 0.39 in).

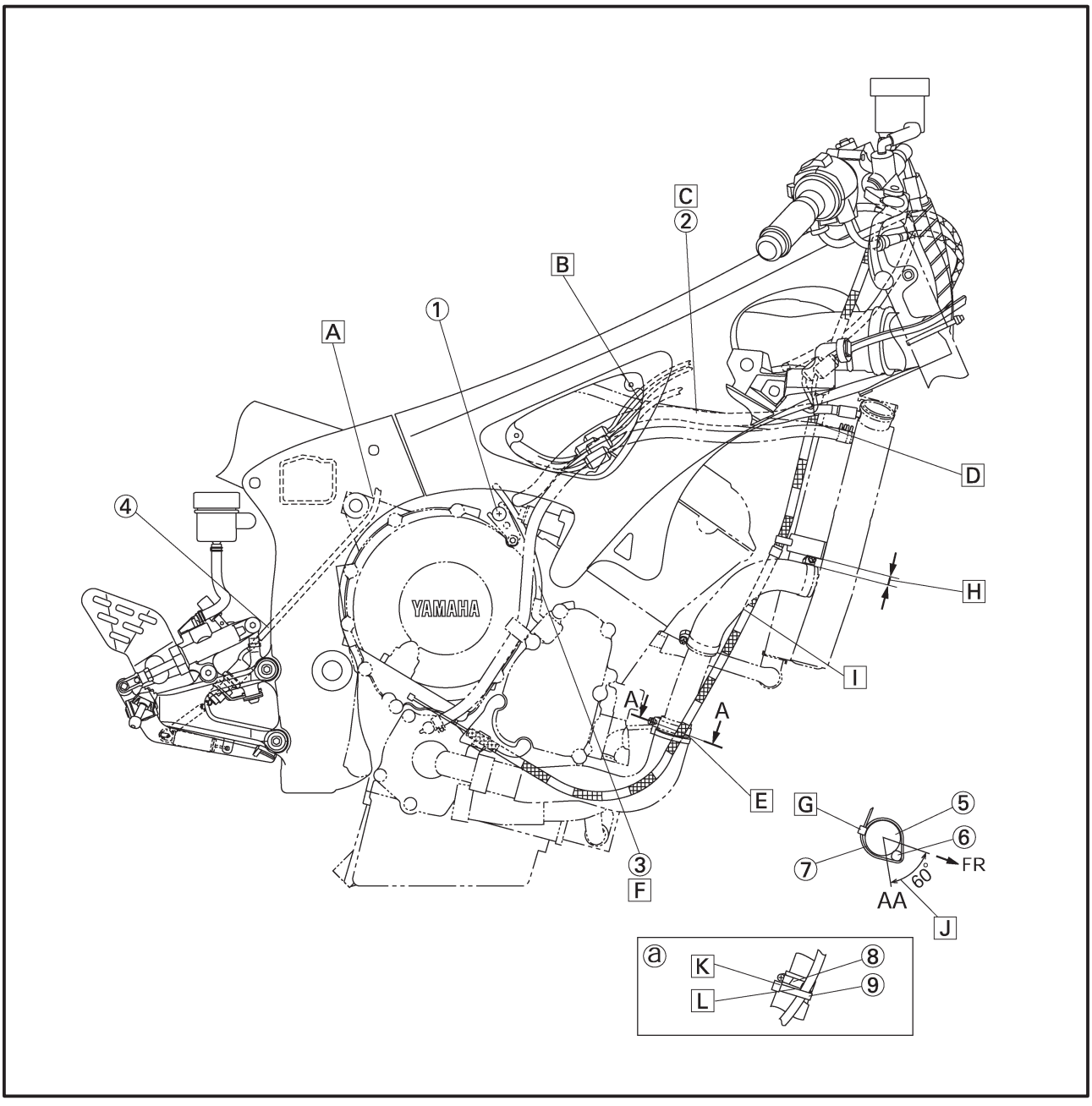


① Throttle stop screw
② Coolant reservoir tank hose
③ Pickup coil lead
④ Rear brake light switch lead
⑤ Coolant hose
⑥ Clutch cable
⑦ Coolant hose protector
⑧ Hose clamp assembly
⑨ Hose clamp

A Pass the rear brake light switch lead outside of rear engine mount bolt.
B Pass the ignition coil lead outside of the radiator hose.
C Pass the coolant reservoir tank hose under the frame and right side of the throttle body.
D Pass the clutch cable inside of the coolant reservoir tank hose and radiator return hoses.
E Assemble as "ⓐ" shown below when clamping.
F Pass the pickup coil lead over the throttle stop cable.
G Tip of the plastic locking tie shall be pointed to the inner side at the rear part of the vehicle.
H The punch mark starting point should be lower than the clamp's top end.
However, the aiming position of the punch mark starting point should be 5 mm (0.20 in) below the clamp's bottom end.
I Pass the clutch cable inside of the radiator hose.
J Clamp the clutch cable so that it is positioned in this range.
K Put and apply the hose clamp to it.



L Clamp the clutch cable by routing the upper end of the clamp along with the bottom end of the hose clamp assembly.

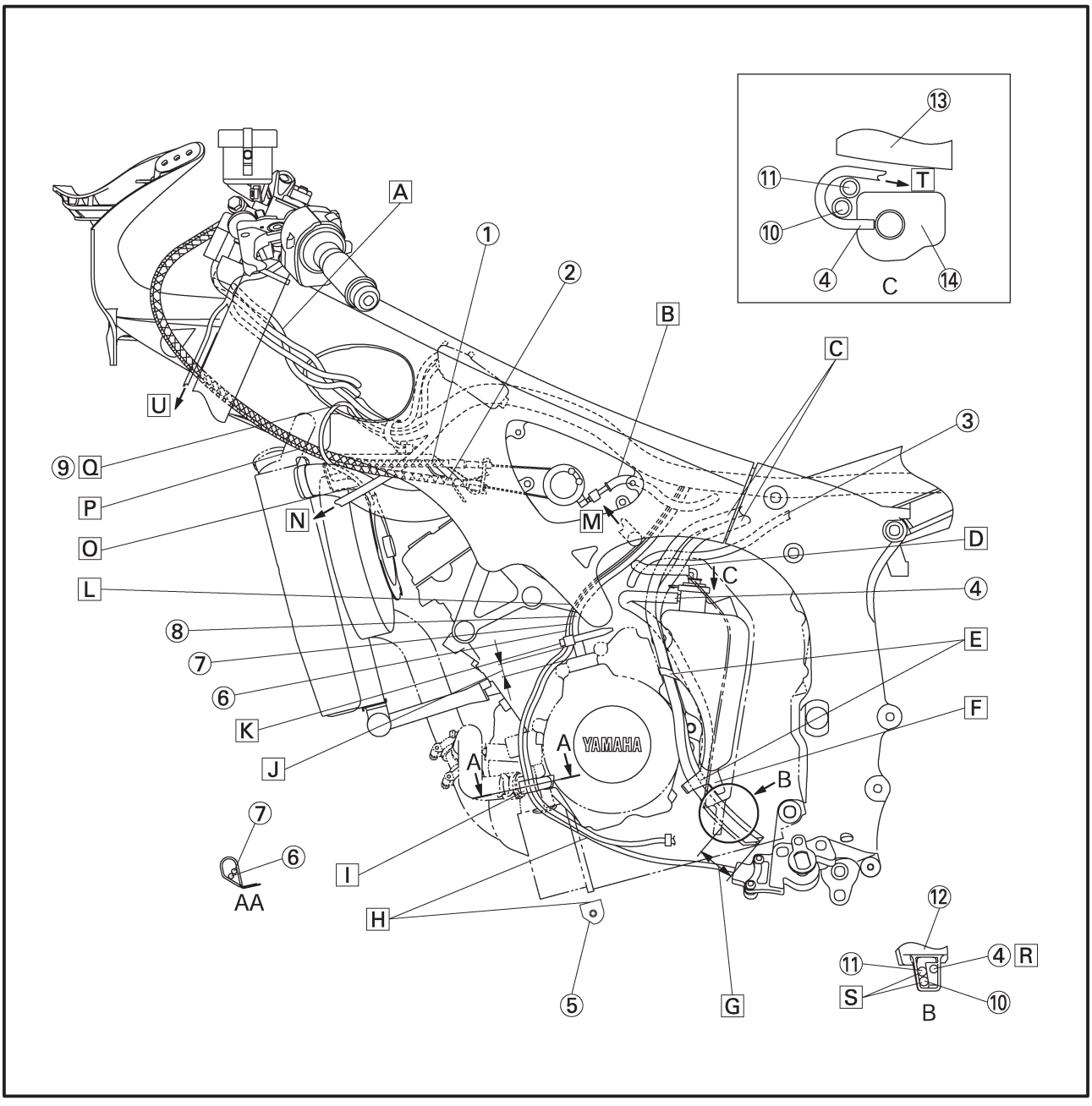


## CABLE ROUTING

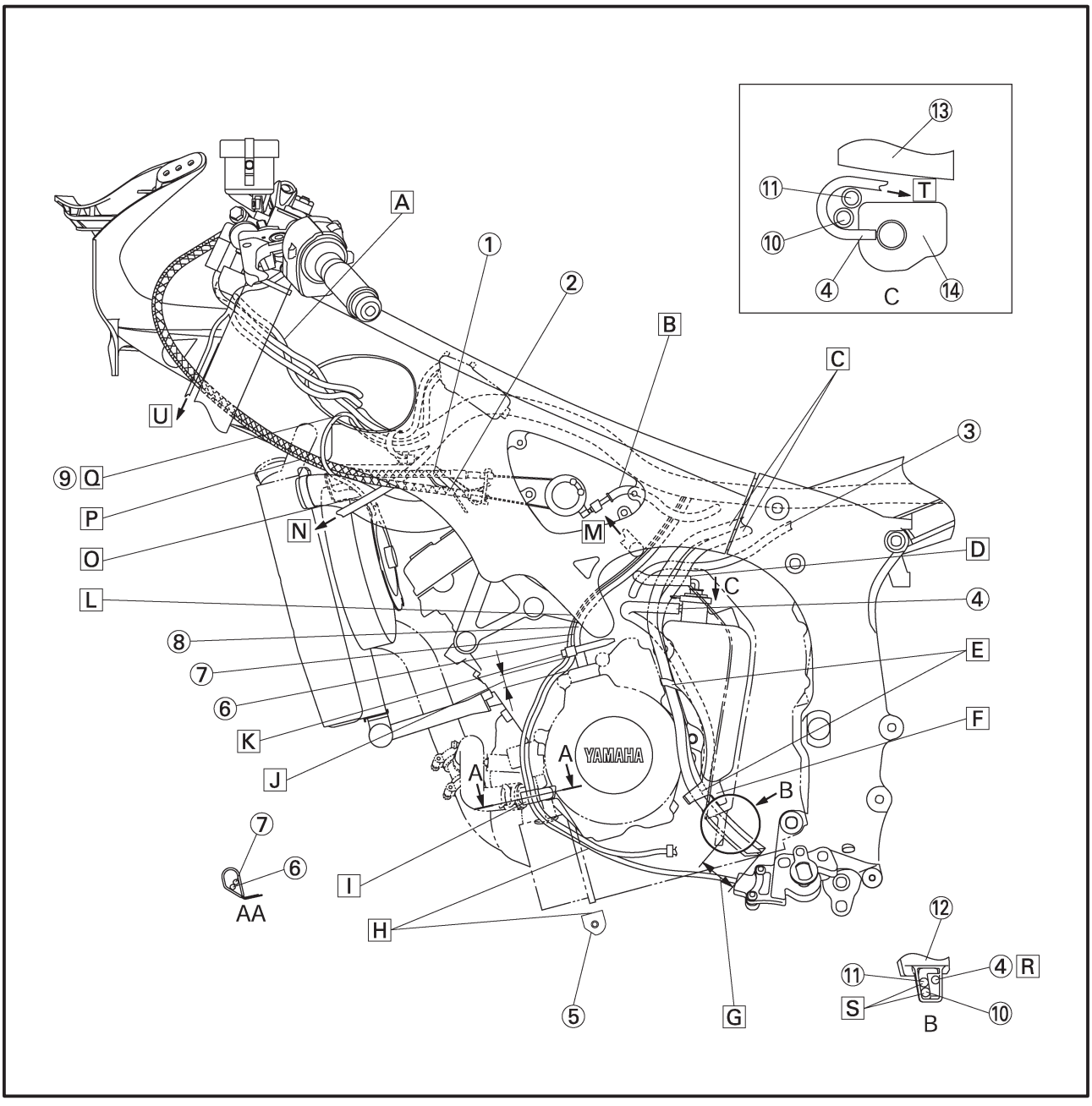
SPEC

① Throttle cable (return side)
② Throttle cable (pull side)
③ Starter motor lead
④ Coolant reservoir tank breather hose
⑤ Bracket 2
⑥ Sidestand switch lead
⑦ Oil level switch lead
⑧ A.C. magneto lead
⑨ Radiator fan motor lead
⑩ Fuel tank breather hose
⑪ Fuel tank drain hose
⑫ Coolant reservoir tank cover
⑬ Drive sprocket cover
⑭ Coolant reservoir tank

[A] Pass the main switch lead under the left handlebar switch lead and immobilizer unit lead and then to the right side of the vehicle.
[B] Pass the throttle stop cable by the left side of the side stand switch lead, oil level switch lead, A.C. magneto lead and then to the right side of the vehicle.
[C] Pass the fuel tank drain hose and fuel tank breather hose inside of the reservoir tank breather hose, reservoir tank hose and wire harness and then route it by the out side of the starter motor lead.
[D] Pass the coolant reservoir tank hose outside of the fuel tank drain hose and fuel tank breather hose.



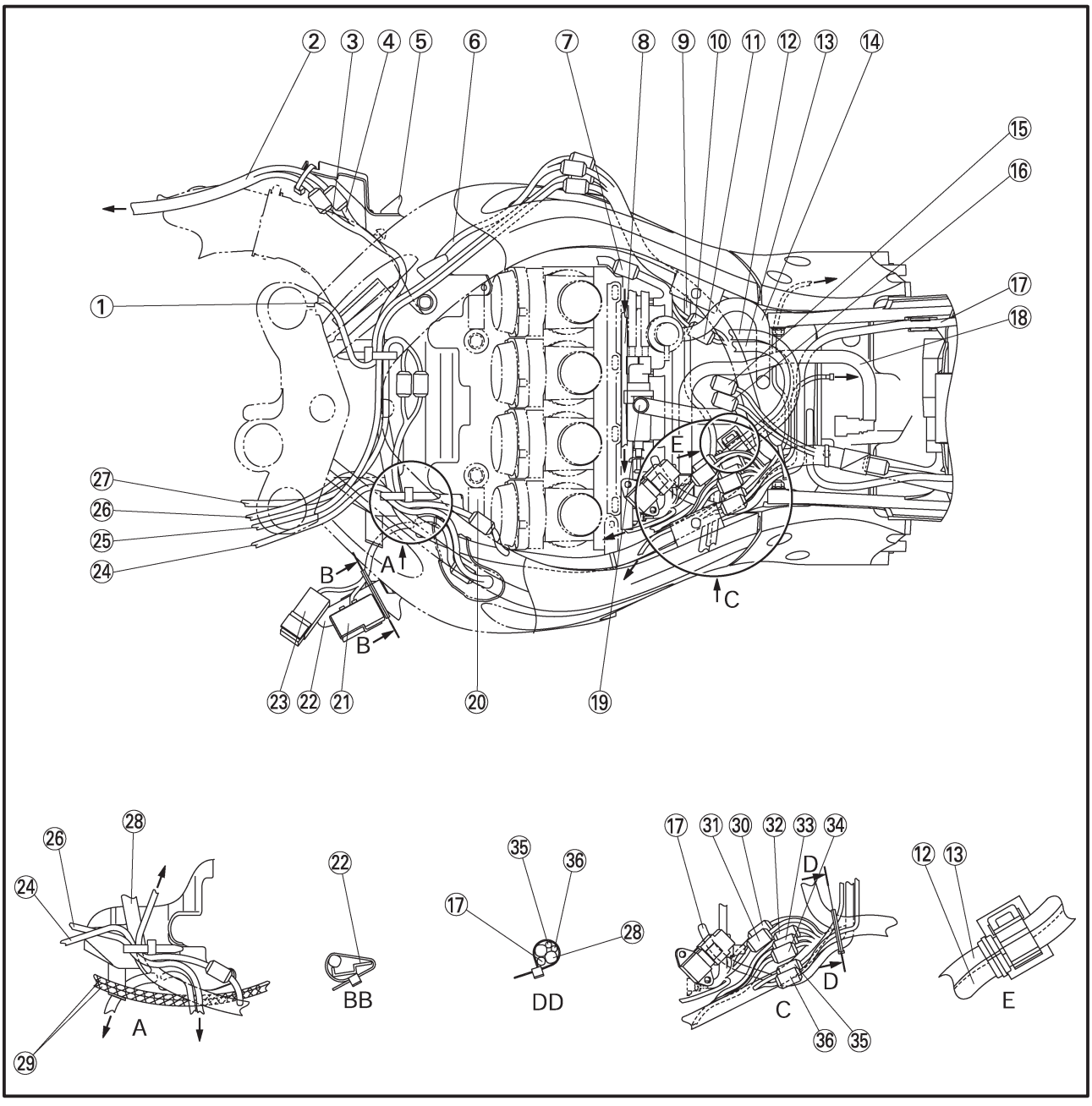
E Pass the fuel tank drain hose, fuel tank breather hose through the clamp of the coolant reservoir tank.
F Pass the coolant reservoir tank breather hose through the clamp of under the coolant reservoir tank.
G Projection allowance from the coolant reservoir tank cover shall be 30 to 50 mm (1.18 ~ 1.97 in).
H Pass the oil level switch lead and sidestand switch lead over the bracket 2.
I Pass the oil level switch lead, and sidestand switch lead through the clamp.
J 5 ~ 45 mm (0.20 ~ 1.77 in).
K Clamp the A.C. magneto lead, oil level switch lead and sidestand switch lead.
L Pass the side stand switch lead, oil level switch lead and A.C. magneto lead between the engine stay and the engine.
M To the throttle body
N To the radiator fan motor relay and fuse box
O Route it above the radiator hose.
P Pass the throttle cable between the guide of the cover 2 and the frame.
Q Pass the radiator fan motor lead through the hole of the frame to the inner side of the vehicle.
R Pass the coolant reservoir tank breather hose through the hole of the coolant reservoir tank cover.
S Order of ups and downs means no object.
T Route it below the coolant reservoir thank.
U To the horn



## CABLE ROUTING

SPEC

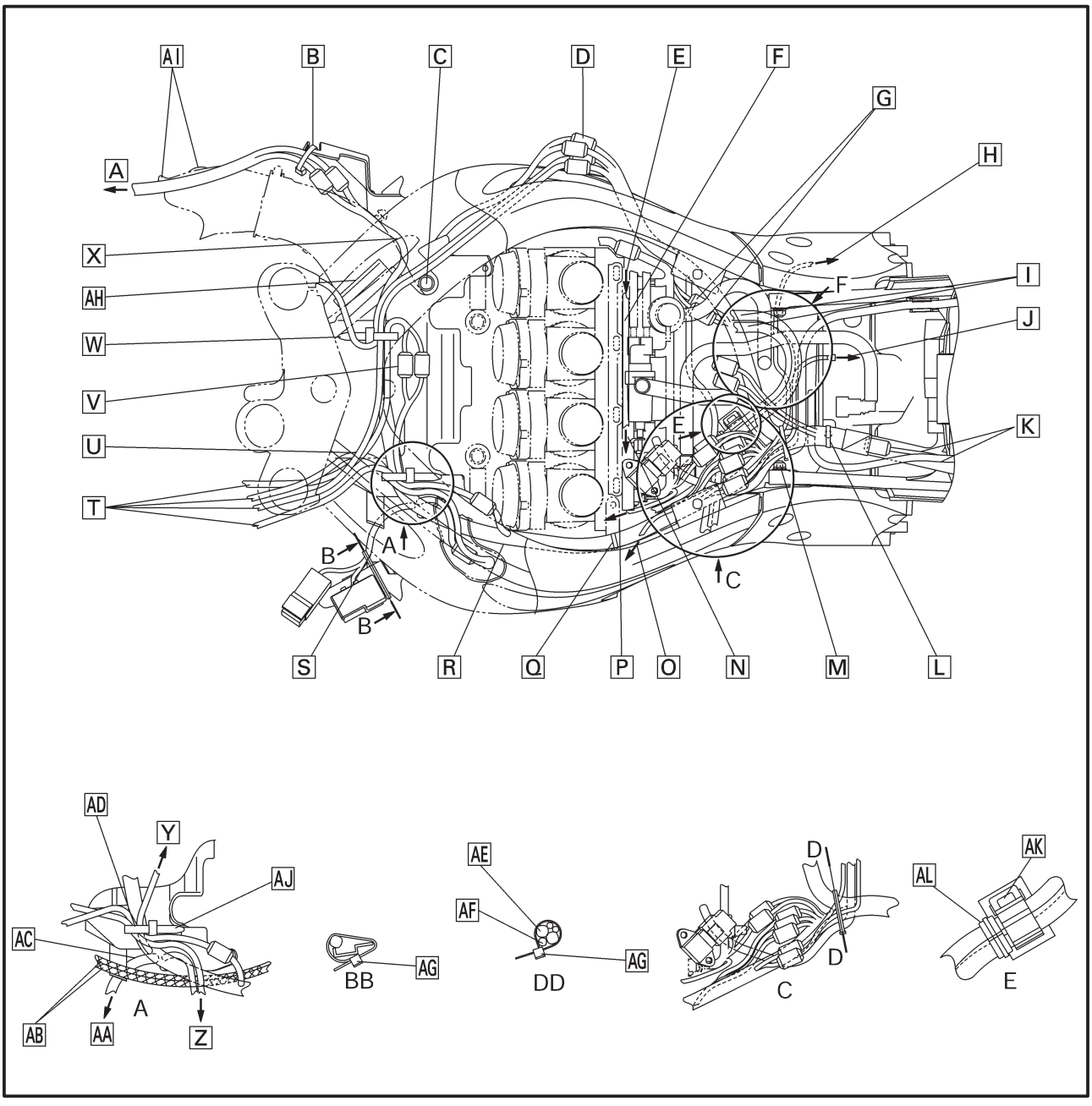
① Right handlebar switch lead
② Sub wire harness
③ Head light lead
④ Meter lead
⑤ Cover 8
⑥ Ignition coil lead
⑦ Throttle position sensor coupler
⑧ Coolant reservoir tank hose
⑨ Throttle stop cable
⑩ Speed sensor lead coupler
⑪ Pickup coil lead coupler
⑫ Fuel tank breather hose
⑬ Fuel tank drain hose
⑭ Fuel hose (return side)
⑮ Fuel pump 2 coupler
⑯ Fuel pump 1 coupler
⑰ Starter motor lead
⑱ Fuel hose (feed side)
⑲ Crankcase breather hose
⑳ Air vent hose
㉑ Fuse box
㉒ Cover 7
㉓ Radiator fan motor relay
㉔ Radiator fan motor lead
㉕ Left handlebar switch lead
㉖ Immobilizer unit lead
㉗ Main switch lead
㉘ Wire harness
㉙ Throttle cables
㉚ Throttle sub-lead 1 (white 6 poles)
㉛ Throttle sub-lead 2 (black 6 poles)
㉜ Oil level switch lead coupler (white 1 pole)
㉝ Sidestand switch lead coupler (blue 2 poles)
㉞ A.C. magneto lead coupler (white 3 poles)
㉟ Rear brake light switch lead coupler (brown 2 poles)
㊱ Neutral switch lead coupler (connector 1 pole)



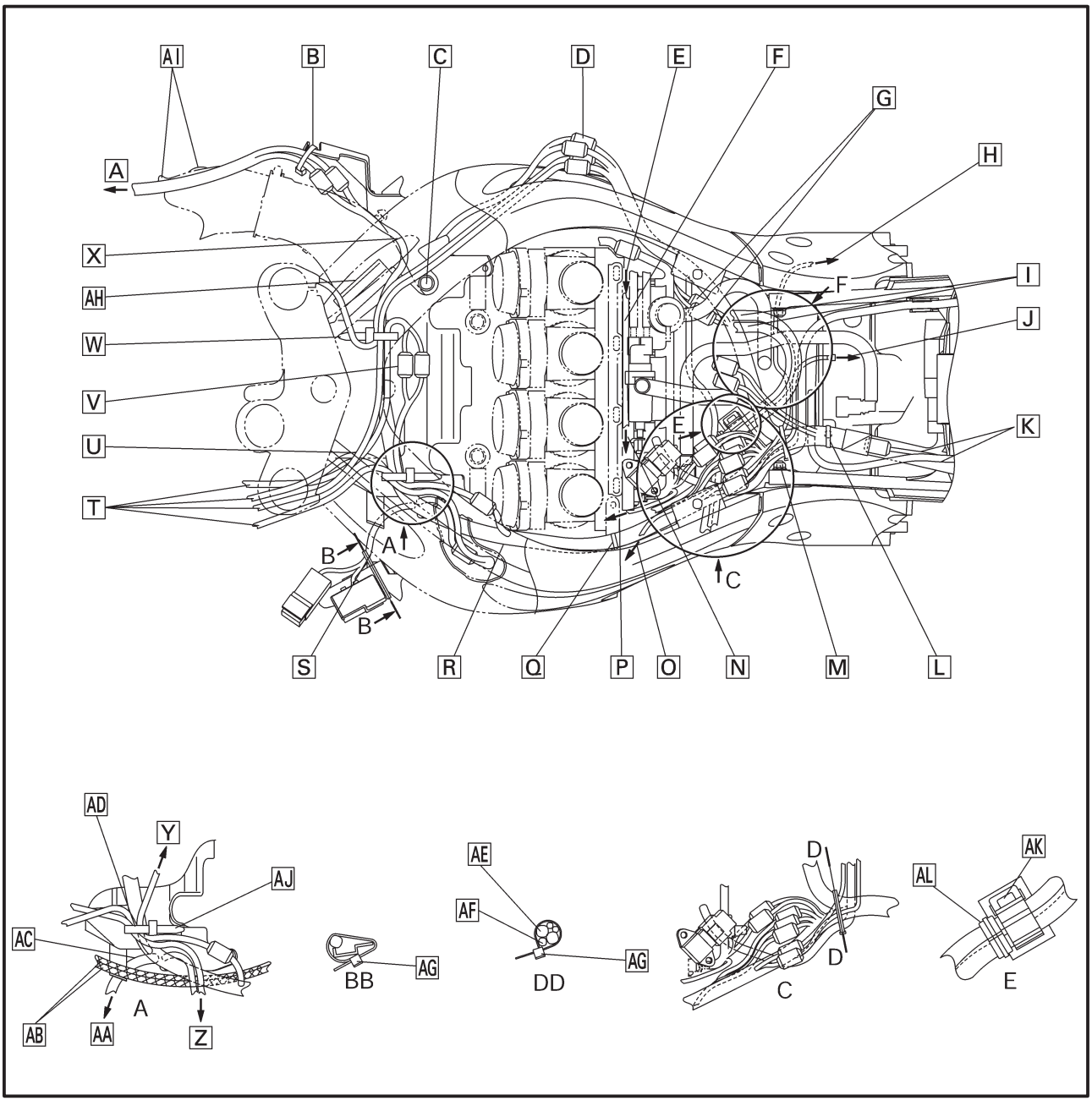
## CABLE ROUTING

SPEC

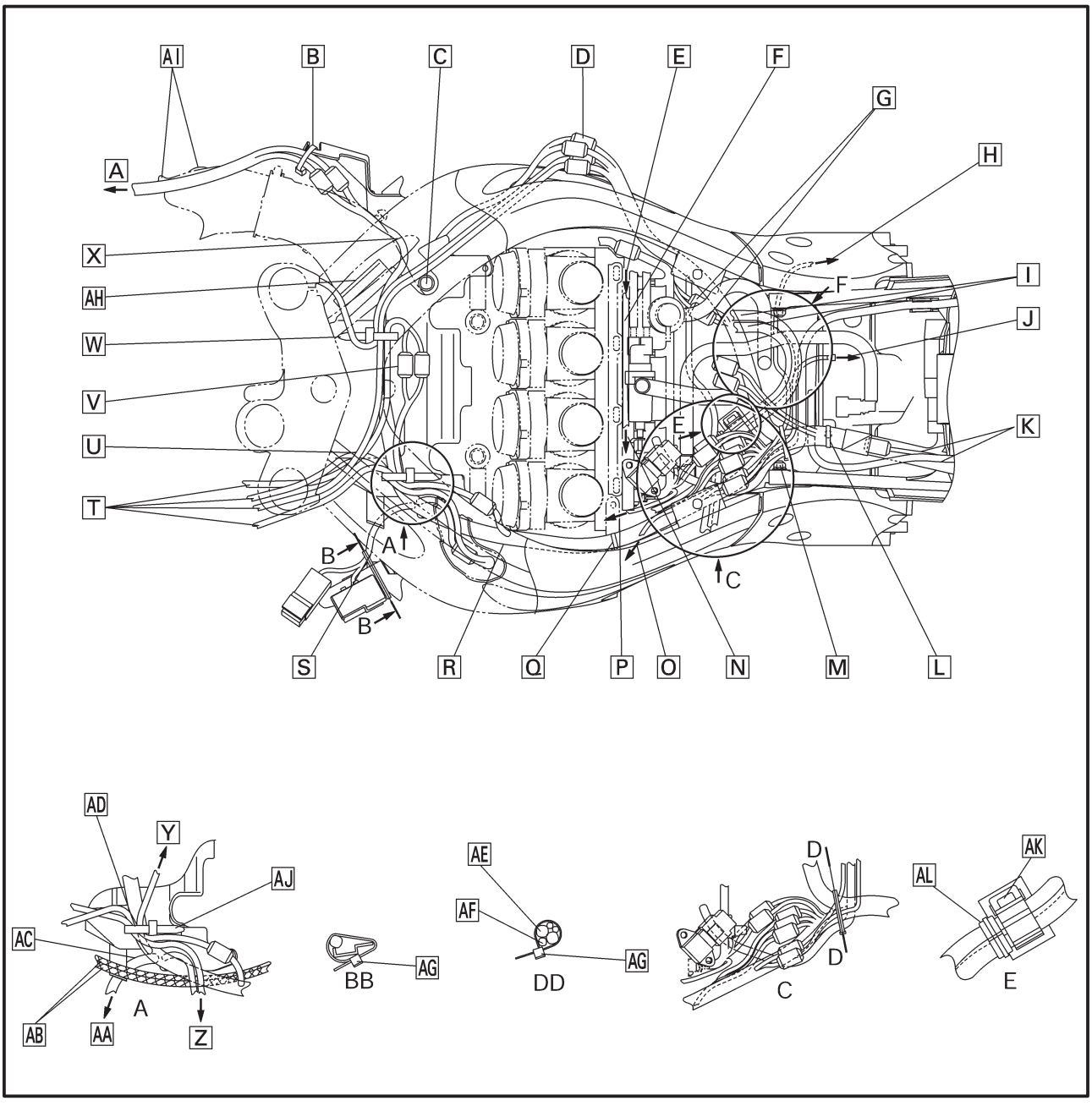
A To the headlight
B Clamp the plastic locking tie to the cover 8. Place the coupler at the rear side of the vehicle against the plastic locking tie. Point the tip of the plastic locking tie to the downward in the inner side of the vehicle.
C Pass the left and right handlebar switch leads outside of the air filter case air vent hose.
D Connect the couplers (4 units) at the frame side hole. Do not catch each lead and wire harness when the cover 8 is attached.
E From the radiator
F Pass the coolant reservoir tank hose through forward the starter motor lead and speed sensor lead.
G Pass the speed sensor lead coupler and crankshaft position sensor lead coupler over the throttle stop cable.
H To the rear brake light switch lead
I Pass the fuel tank breather hose and fuel tank drain hose over the fuel hose and fuel return hose.
One rotation is possible for a twist of fuel tank breather hose and fuel tank drain hose before an engine clamp.
J To the neutral switch
K Pass the battery negative lead over the wire harness.
L Insert the wire harness wrapping clamp to the frame hole.
M There should be no interference between the wire harness and the tip of the rear frame attaching bolts.



[N] To the coolant reservoir tank
[O] To the oil level switch, sidestand switch and A.C. magneto
[P] To the intake temperature sensor (air filter case)
[Q] Install the wire harness wrapping clamp to the stay of the throttle body.
[R] Pass the wire harness over the throttle air vent hose.
[S] Pass the wire harness between frame and coolant hose.
[T] Pass it through the frame hole.
[U] Pass the left handlebar switch lead and main switch lead over the immobilizer unit lead.
[V] Do not catch the coupler when the air filter case is assembled.
[W] Clamp the wire harness, left and right handlebar switch leads and main switch lead. Align the tapping positions of three leads except the wire harness. Point the tip of the clamp to the front side of the vehicle.
[X] Route the head light and meter leads under the frame's lower part from the hollow section of the cover 2.
[Y] To the main switch lead coupler
[Z] To the immobilizer unit coupler
[AA] To the fuse box and fan motor relay
[AB] Pass the throttle cables over the cover 2.
[AC] Branching leads to the fuse box and radiator fan motor relay shall pass through the guide section of the cover 2 under the wire harness and then to the outside of the frame.



AD Clamp the wire harness, main switch lead branch section, radiator fan motor lead and immobilizer unit lead. Align the taping position of the immobilizer unit lead.
AE Branching harness from the wire harness.
AF Use the plastic locking tie to clamp the starter motor lead at the protector section.
AG Tip of the plastic locking tie should point to the downward outside of the vehicle.
AH Sealing set of the cover can be either upper or lower against the frame lower end. However, it should not be caught.
AI Make sure not to drop the headlight sub wire harness beneath the projection of the duct. Check it when installing the side cowling.
AJ Point the tip of the plastic locking tie to the rear side of the vehicle.
AK Insert until it sets.
AL The clamp by the side of a hose comes below an attachment clamp.

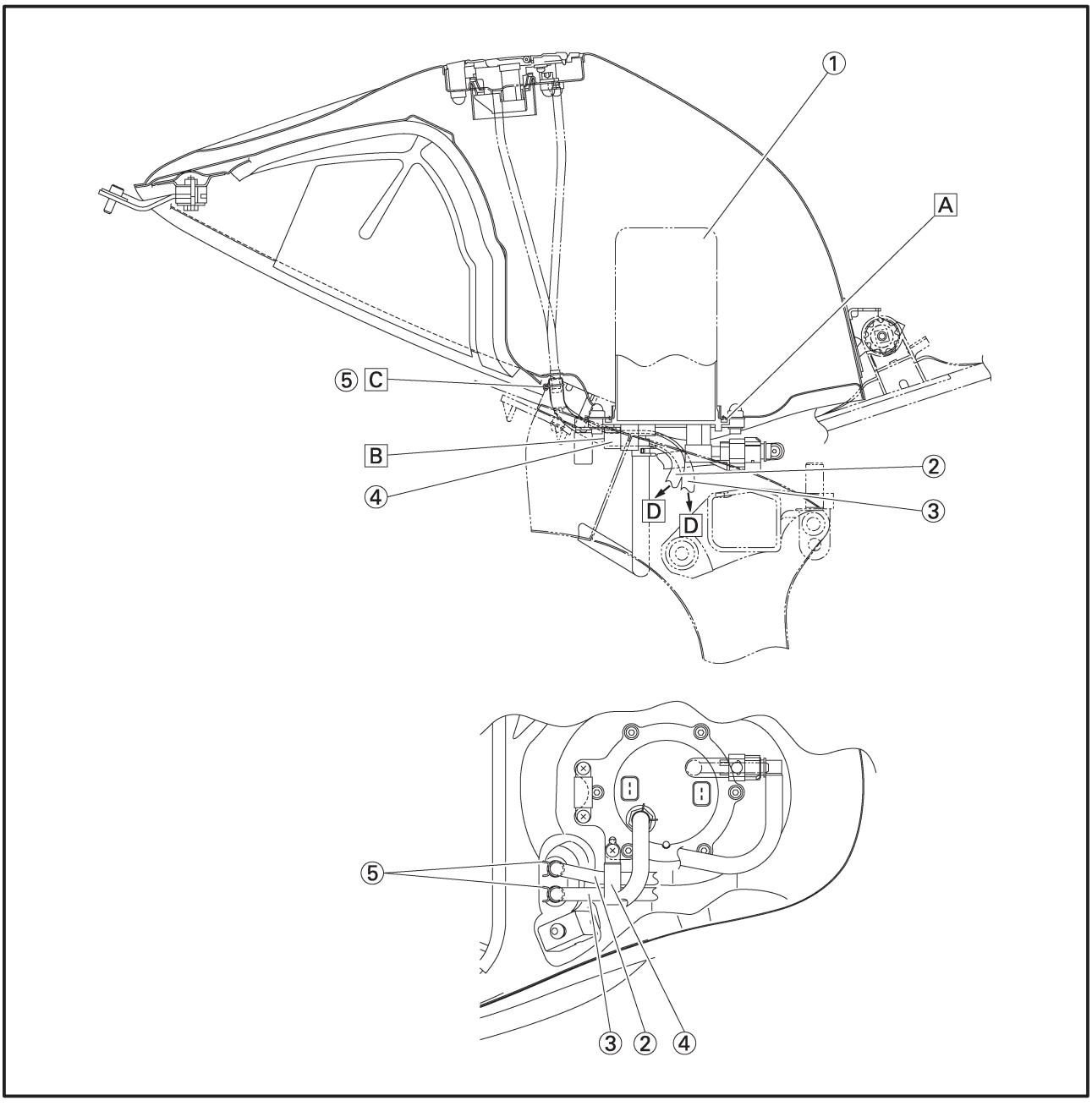


## CABLE ROUTING

SPEC

① Fuel pump assembly
② Fuel tank drain hose
③ Fuel tank breather hose
④ Clamp
⑤ Clip

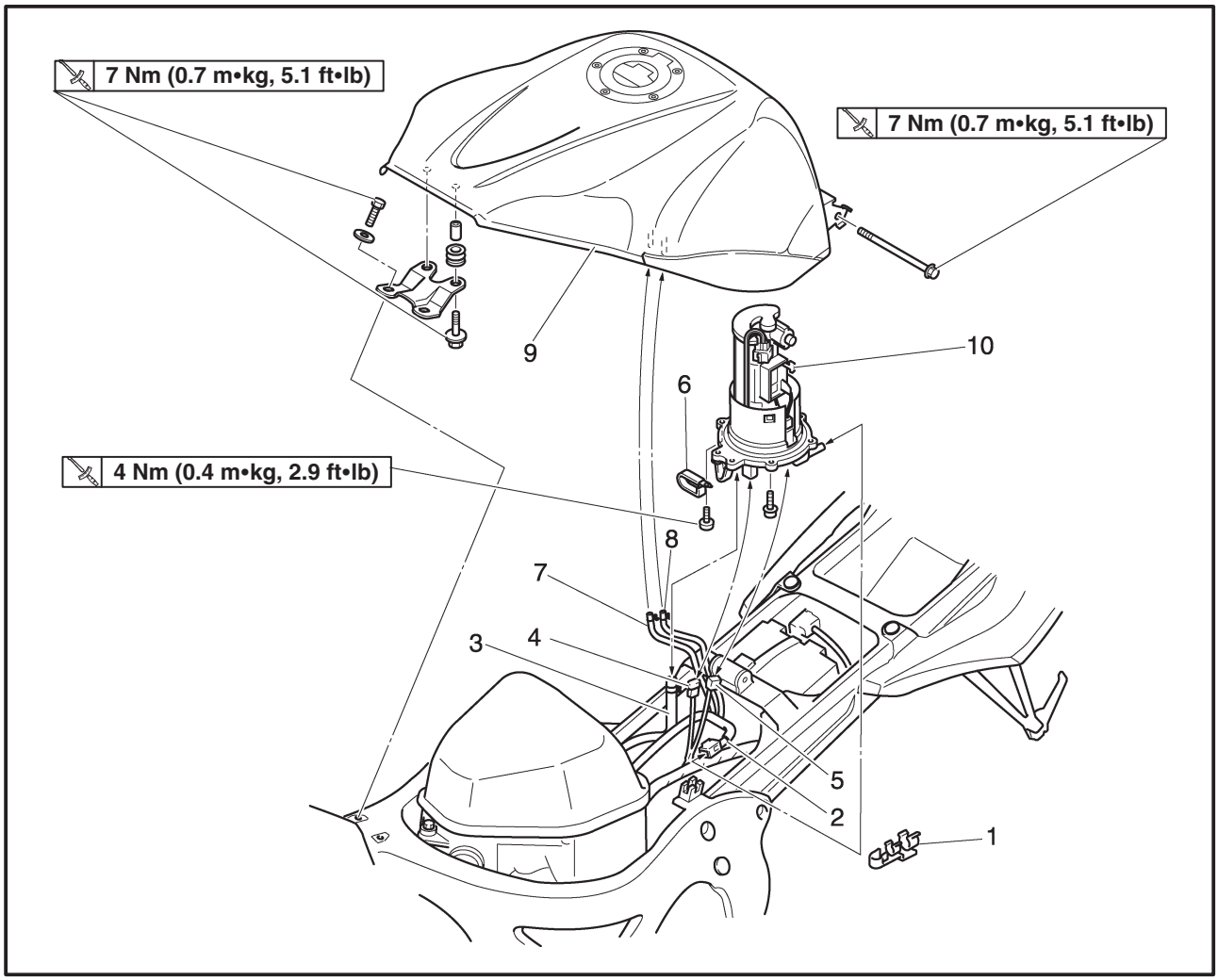
A Install the O-ring with its lip pointed upward.
B Pass the fuel tank drain hose and fuel tank breather hose through the clamp. There needs to be no crookedness in fuel tank drain hose and fuel tank breather hose between fuel tank's nipple and clamp.
C Direction of which is sufficient as the knob of a clip.
D Air opening



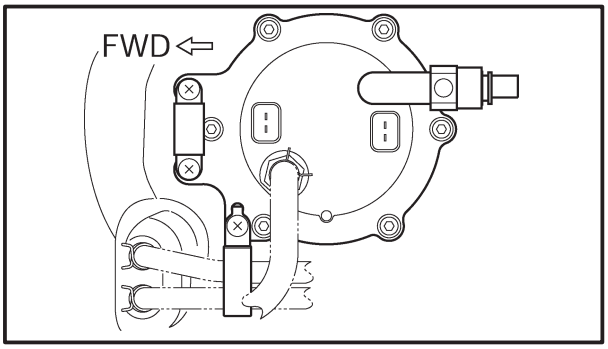
EAS00040

# PERIODIC CHECKS AND ADJUSTMENTS

## FUEL TANK




| Order | Job/Part | Q'ty | Remarks |
|---|---|---|---|
| | **Removing the fuel tank** | | Remove the parts in the order listed. |
| | Rider seat | | Refer to "SEATS". |
| 1 | Fuel hose connector cover | 1 | |
| 2 | Fuel hose | 1 | |
| 3 | Fuel return hose | 1 | |
| 4 | Fuel sender coupler | 1 | Disconnect. |
| 5 | Fuel pump coupler | 1 | Disconnect. |
| 6 | Clamp | 1 | |
| 7 | Fuel tank overflow hose | 1 | |
| 8 | Fuel tank breather hose | 1 | |
| 9 | Fuel tank | 1 | |
| 10 | Fuel pump | 1 | |
| | | | For installation, reverse the removal procedure. |
| | | | Refer to the CABLE ROUTING for how to attach a hose. |




**INSTALLING THE FUEL PUMP**

1. Install:
   - fuel pump — **4 Nm (0.4 m•kg, 2.9 ft•lb)**

**NOTE:**

- Do not damage the installation surfaces of the fuel tank when installing the fuel pump.
- Always use a new fuel pump gasket.
- Install the fuel pump as shown in the illustration.
- Tighten the fuel pump bolts in stages in a criss-cross pattern and to the specified torque.

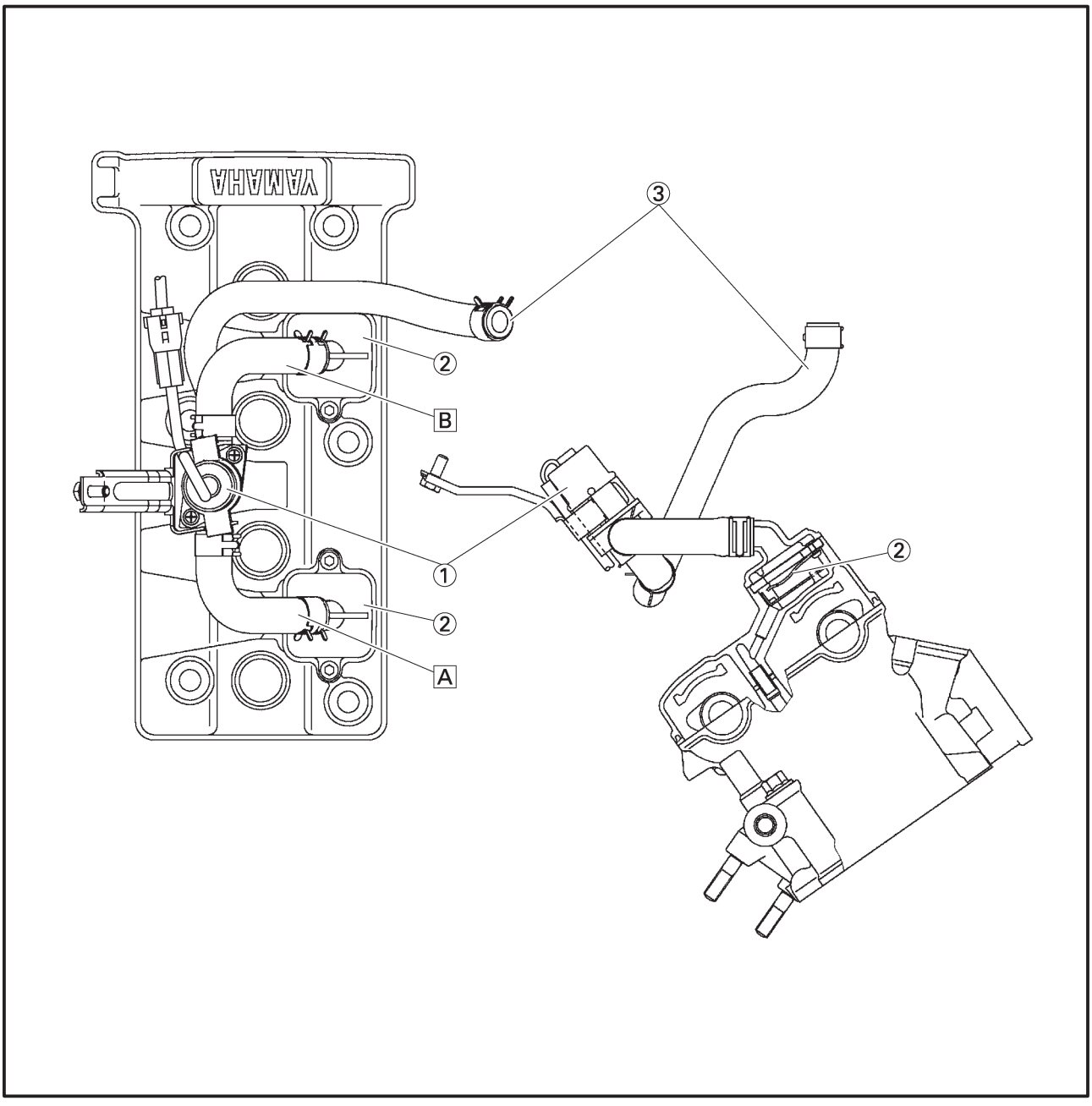
# FUEL INJECTION SYSTEM

## AIR INDUCTION SYSTEM

EAS00509

### AIR INDUCTION SYSTEM DIAGRAMS

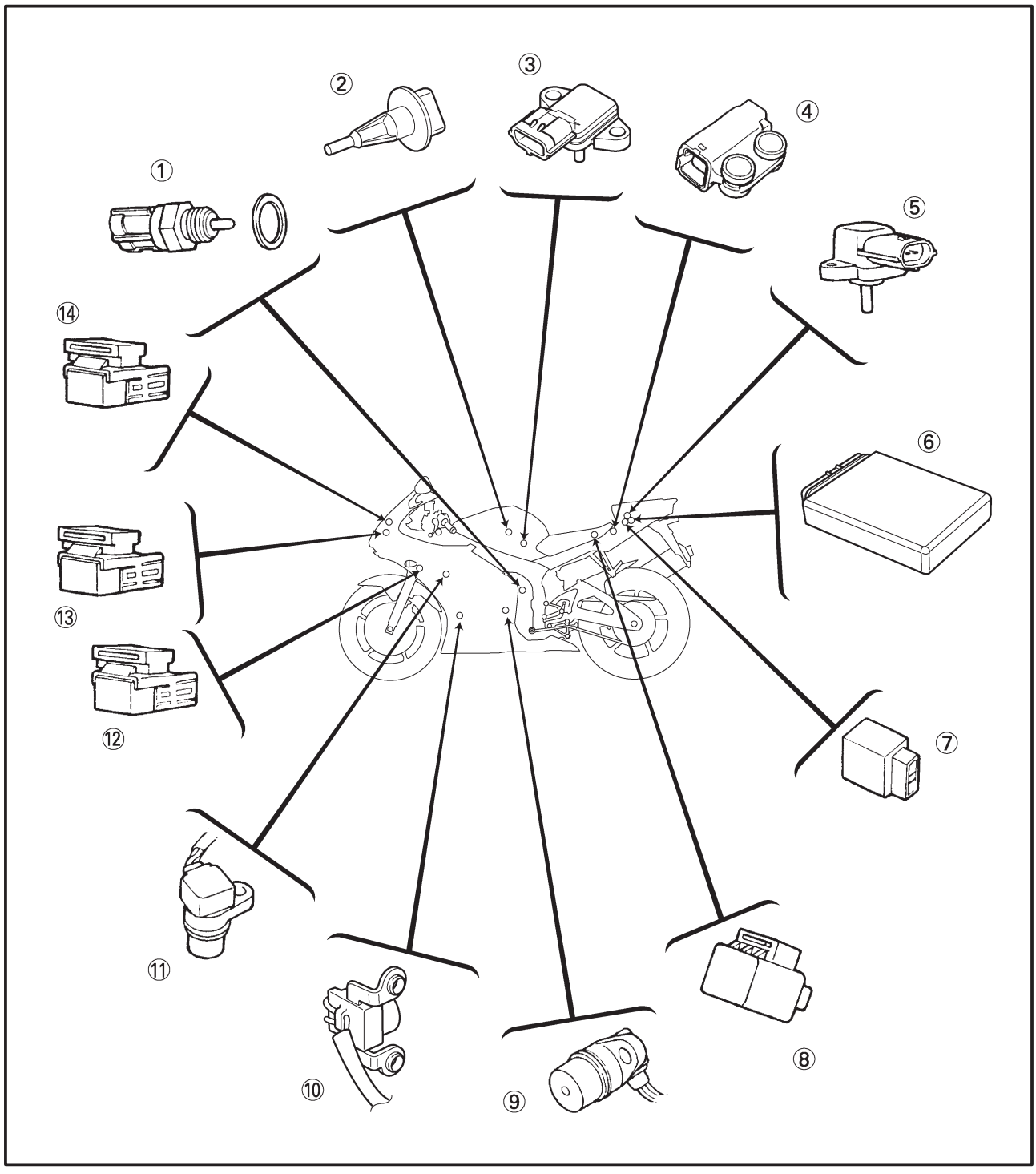
① Air cut-off valve
② Reed valve
③ To air filter case
A To cylinder #1 and #2
B To cylinder #3 and #4



# ELECTRICAL

## ELECTRICAL COMPONENTS

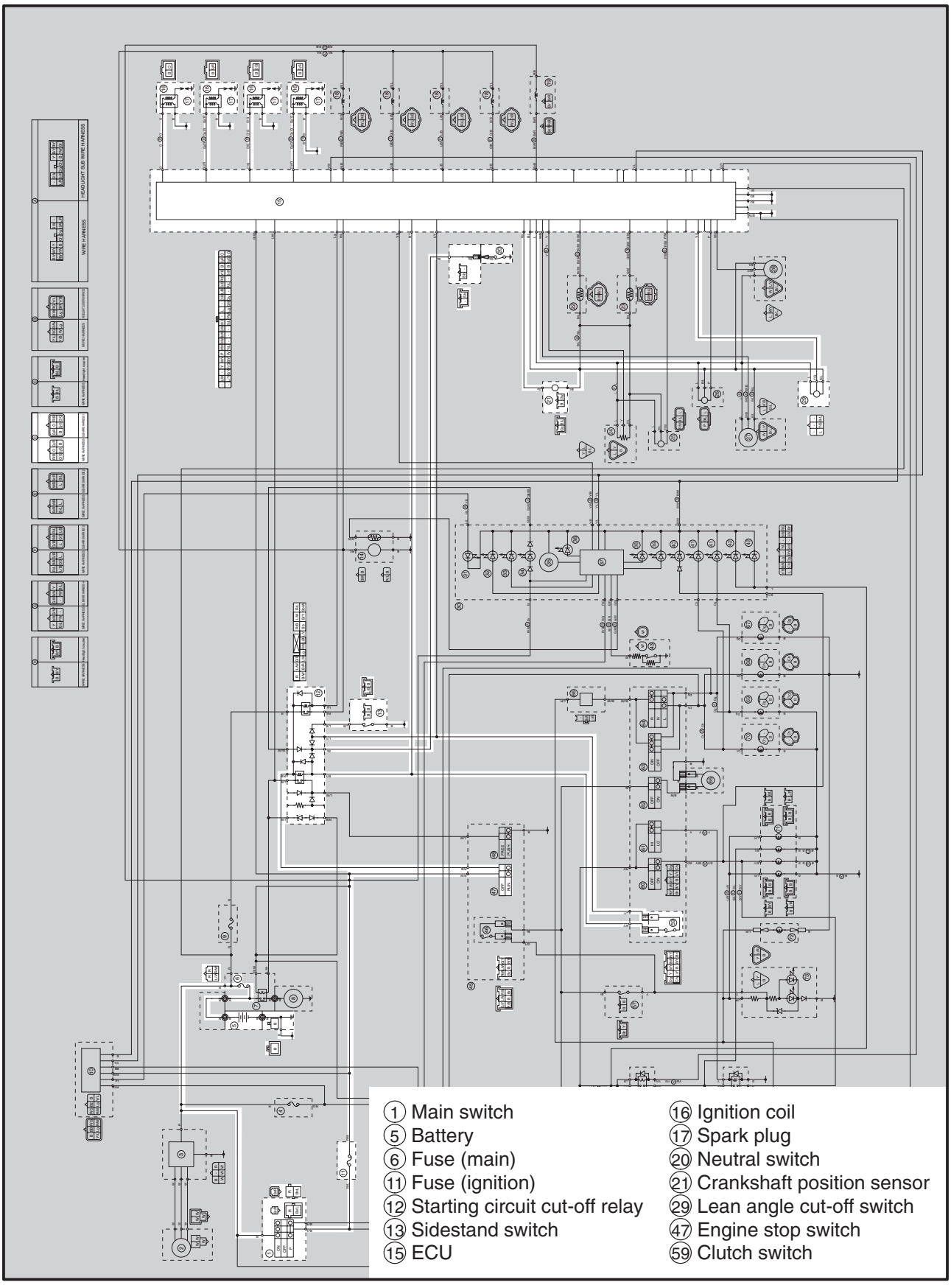
① Coolant temperature sensor
② Intake air temperature sensor
③ Intake air pressure sensor
④ Lean angle cut-off switch
⑤ Atmospheric pressure sensor
⑥ ECU
⑦ Starting circuit cut-off relay
⑧ Turn signal relay
⑨ Speed sensor
⑩ Crankshaft position sensor
⑪ Cylinder identification sensor
⑫ Radiator fan motor relay
⑬ Headlight relay (on/off)
⑭ Headlight relay (dimmer)



EAS00735

# IGNITION SYSTEM

## CIRCUIT DIAGRAM




① Main switch
⑤ Battery
⑥ Fuse (main)
⑪ Fuse (ignition)
⑫ Starting circuit cut-off relay
⑬ Sidestand switch
⑮ ECU
⑯ Ignition coil
⑰ Spark plug
⑳ Neutral switch
㉑ Crankshaft position sensor
㉙ Lean angle cut-off switch
㊼ Engine stop switch
㊾ Clutch switch

EAS00737

## TROUBLESHOOTING

**The ignition system fails to operate (no spark or intermittent spark).**

Check:
1. Main and ignition fuses
2. Battery
3. Spark plugs
4. Ignition spark gap
5. Ignition coil resistance
6. Crankshaft position sensor
7. Main switch
8. Engine stop switch
9. Neutral switch
10. Sidestand switch
11. Clutch switch
12. Starting circuit cut-off relay
13. Lean angle cut-off switch
14. Wiring connections
    (of the entire ignition system)

**NOTE:**

- Before troubleshooting, remove the following part(s):

1. seat
2. fuel tank
3. air filter case
4. bottom cowling
5. side cowlings

- Troubleshoot with the following special tool(s).

**Dynamic spark tester**
**YM-34487**
**Ignition checker**
**90890-06754**
**Pocket tester**
**90890-03112, YU-3112**

EAS00738

### 1. Main and ignition fuses

- Check the main and ignition fuses for continuity.
  Refer to "CHECKING THE FUSES" in chapter 3.
- Are the main and ignition fuses OK?

YES

NO

Replace the fuse(s).

EAS00739

### 2. Battery

- Check the condition of the battery.
  Refer to "CHECKING AND CHARGING THE BATTERY" in chapter 3.

**Minimum open-circuit voltage**
**12.8 V or more at 20°C (68°F)**

- Is the battery OK?

YES

NO

- Clean the battery terminals.
- Recharge or replace the battery.

EAS00741

### 3. Spark plugs

The following procedure applies to all of the spark plugs.
- Check the condition of the spark plug.
- Check the spark plug type.
- Measure the spark plug gap.
  Refer to "CHECKING THE SPARK PLUGS" in chapter 3.

**Standard spark plug**
**CR9EK or CR10EK (NGK)**
**Spark plug gap**
**0.6 ~ 0.7 mm (0.0236 ~ 0.0276 in)**

- Is the spark plug in good condition, is it of the correct type, and is its gap within specification?

YES

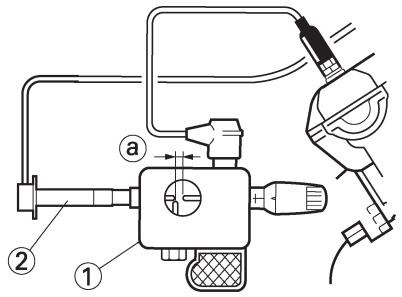
NO

Re-gap or replace the spark plug.

EAS00743

4. Ignition spark gap

The following procedure applies to all of the spark plugs.
- Disconnect the spark plug cap from the spark plug.
- Connect the ignition checker ① and ignition coil ② as shown.
- Set the main switch to "ON".
- Measure the ignition spark gap ⓐ.
- Crank the engine by pushing the starter switch and gradually increase the spark gap until a misfire occurs.



I8110202

**Minimum ignition spark gap**
**6 mm (0.24 in)**

- Is there a spark and is the spark gap within specification?

NO

YES

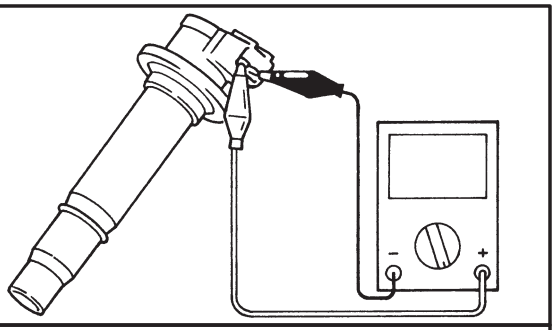
The ignition system is OK.

EAS00747

5. Ignition coil resistance

The following procedure applies to all of the ignition coils.
- Disconnect the ignition coil leads from the wire harness.
- Connect the pocket tester (Ω × 1) to the ignition coil as shown.

**Positive tester probe →**
**ignition coil terminal**
**Negative tester probe →**
**ignition coil terminal**

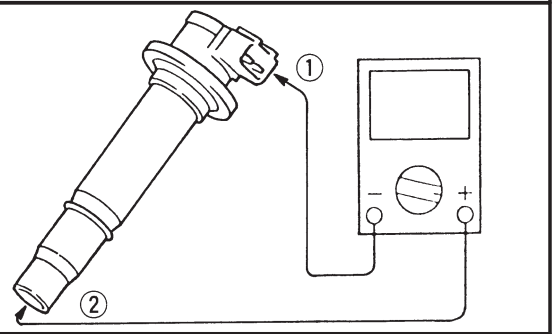


- Measure the primary coil resistance.

**Primary coil resistance**
**0.24 ~ 0.32 Ω at 20°C (68°F)**

- Connect the pocket tester (Ω × 1k) to the ignition coil as shown.

**Negative tester probe →**
**ignition coil terminal ①**
**Positive tester probe →**
**spark plug terminal ②**




- Measure the secondary coil resistance.

**Secondary coil resistance**
**5.0 ~ 6.8 kΩ at 20°C (68°F)**

- Is the ignition coil OK?

YES

NO

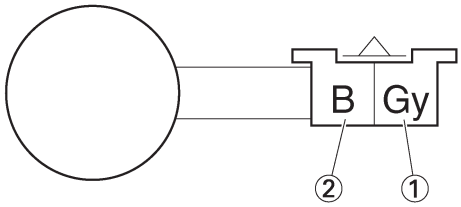
Replace the ignition coil.

EAS00748

6. Crankshaft position sensor resistance

- Disconnect the crankshaft position sensor coupler from the wire harness.
- Connect the pocket tester (Ω × 100) to the crankshaft position sensor coupler as shown.

**Positive tester probe → gray ①**
**Negative tester probe → black ②**




- Measure the crankshaft position sensor resistance.

**Crankshaft position sensor resistance**
**248 ~ 372Ω at 20°C (68°F)**
**(between gray and black)**

- Is the crankshaft position sensor OK?

YES → NO

Replace the crankshaft position sensor.

EAS00749

7. Main switch

- Check the main switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the main switch OK?

YES → NO

Replace the main switch.

EAS00750

8. Engine stop switch

- Check the engine stop switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the engine stop switch OK?

YES → NO

Replace the right handlebar switch.

EAS00751

9. Neutral switch

- Check the neutral switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the neutral switch OK?

YES → NO

Replace the neutral switch.

EAS00752

10. Sidestand switch

- Check the sidestand switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the sidestand switch OK?

YES → NO

Replace the sidestand switch.

EAS00763

11. Clutch switch

- Check the clutch switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the clutch switch OK?

YES → NO

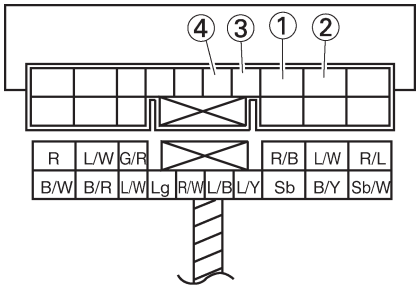
Replace the clutch switch.

EAS00753

12. Starting circuit cut-off relay

- Disconnect the starting circuit cut-off relay coupler from the wire harness.
- Connect the pocket tester (Ω × 1) to the starting circuit cut-off relay coupler as shown.
- Check the starting circuit cut-off relay for continuity.

| | |
|---|---|
| **Positive tester probe → sky blue ①**<br>**Negative tester probe → black/yellow ②** | **Continuity** |
| **Positive tester probe → sky blue ①**<br>**Negative tester probe → blue/yellow ③** | |
| **Positive tester probe → blue/black ④**<br>**Negative tester probe → black/yellow ②** | |
| **Positive tester probe → black/yellow ②**<br>**Negative tester probe → sky blue ①** | **No continuity** |
| **Positive tester probe → blue/yellow ③**<br>**Negative tester probe → sky blue ①** | |
| **Positive tester probe → blue/yellow ③**<br>**Negative tester probe → blue/black ④** | |




**NOTE:**

When you switch the positive and negative tester probes, the readings in the above chart will be reversed.

- Are the tester readings correct?

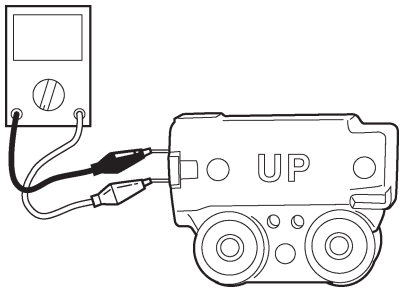
YES → NO

Replace the starting circuit cut-off relay.

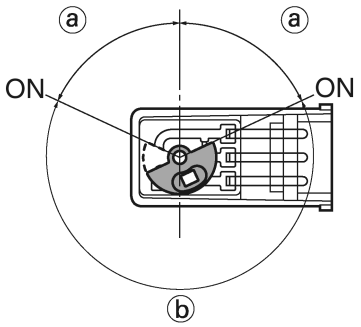
13. Lean angle cut-off switch voltage

- Remove the lean angle cut-off switch.
- Connect the pocket tester (Ω × 1) to the lean angle cut-off switch terminals as shown.

**Positive tester probe → blue**
**Negative tester probe → yellow/green**




**Lean angle cut-off switch voltage**
**Less than 65° ⓐ → Approximately 1 V**
**More than 65° ⓑ → Approximately 4 V**




- Is the lean angle cut-off switch OK?

YES

NO

Replace the lean angle cut-off switch.

EAS00754

14. Wiring

- Check the entire ignition system's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the ignition system's wiring properly connected and without defects?

YES

NO

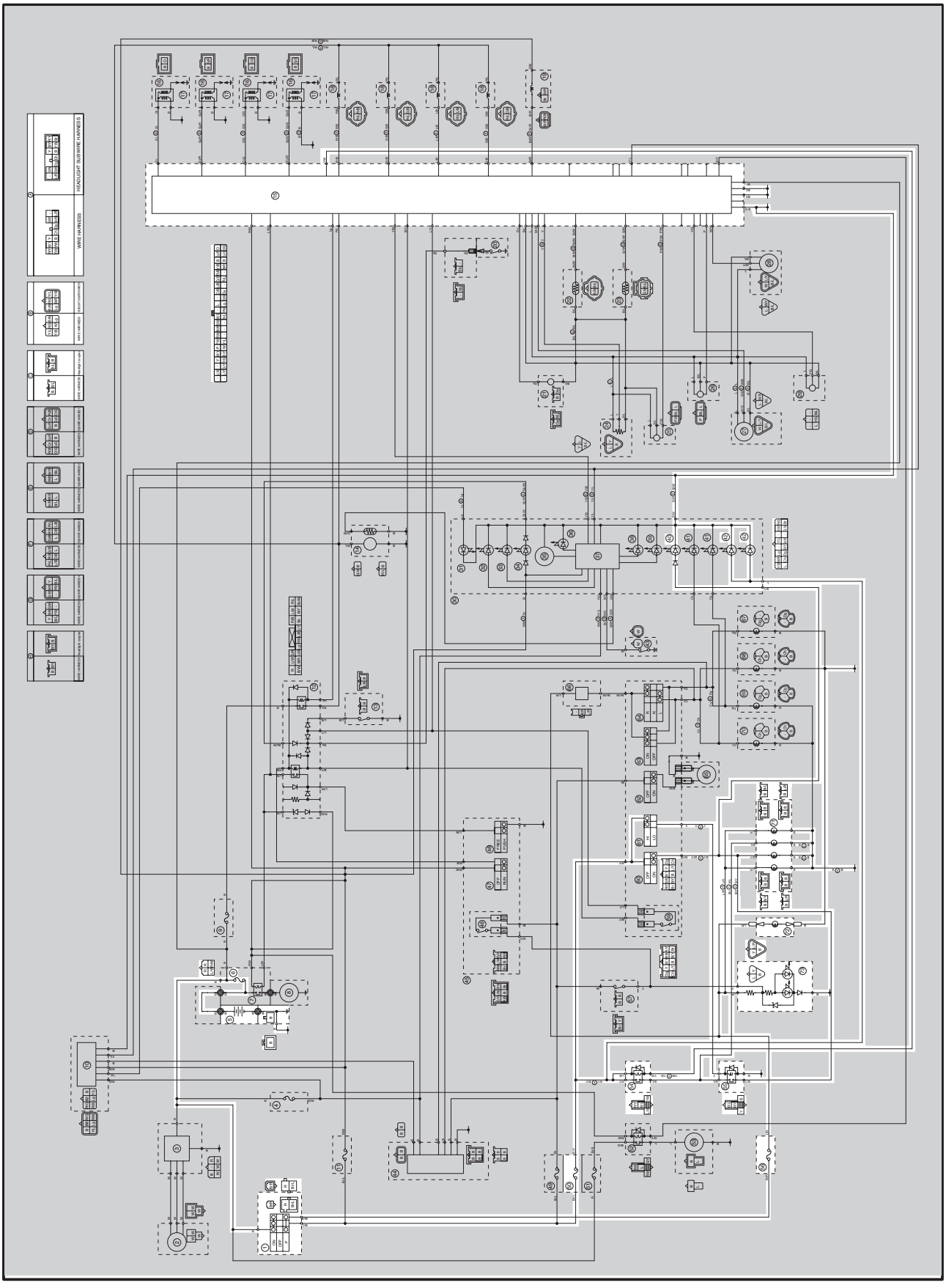
Replace the ignitor unit.

Properly connect or repair the ignition system's wiring.

EAS00780

# LIGHTING SYSTEM

## CIRCUIT DIAGRAM



① Main switch
⑤ Battery
⑥ Fuse (main)
⑮ ECU
㊵ High beam indicator light
㊷ Meter light
㊿ Fuse (headlight)
54 Headlight relay (on/off)
55 Headlight relay (dimmer)
56 Fuse (park)
60 Pass switch
61 Dimmer switch
71 Headlight
72 License light
73 Tail/brake light

EAS00788

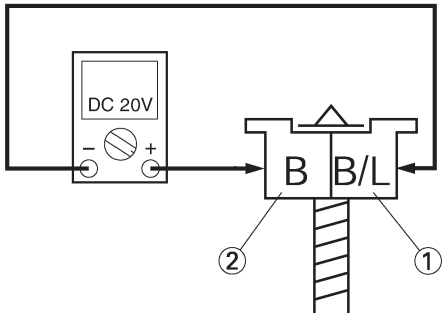
## CHECKING THE LIGHTING SYSTEM

1. The headlight and the high beam indicator light fail to come on.

| 1. Headlight bulb and socket |
|---|
| • Check the headlight bulb and socket for continuity.<br>Refer to "CHECKING THE BULBS AND BULB SOCKETS"<br>• Are the headlight bulb and socket OK? |

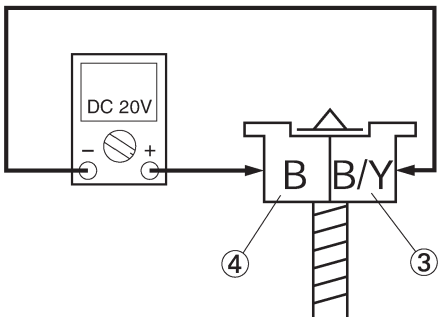
⇩ YES ⇩ NO

Replace the headlight bulb, socket or both.

| 2. Voltage |
|---|
| • Connect the pocket tester (DC 20 V) to the headlight and meter assembly couplers as shown. |
| A When the dimmer switch is set to " ≡D "<br>B When the dimmer switch is set to " ≡D " |
| **Headlight**<br>**Positive tester probe → black/blue ①**<br>**Negative tester probe → black ②** |
| Headlight coupler (wire harness side)<br>A Low beam<br>  <br> |

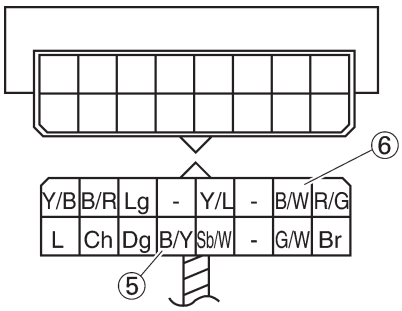
**Headlight**
**Positive tester probe → black/yellow ③**
**Negative tester probe → black ④**

B High beam




**High beam indicator light (LEDs)**
**Positive tester probe → black/yellow ⑤**
**Negative tester probe → black/white ⑥**

Meter assembly coupler (wire harness side)




- Turn the main switch to "ON".
- Start the engine.
- Set the dimmer switch to " ≡D " or " ≡D ".
- Measure the voltage (DC 12 V) of black/blue ① or black/yellow ③ on the headlight coupler (wire harness side).
- Is the voltage within specification?

⇩ YES ⇩ NO

This circuit is OK.

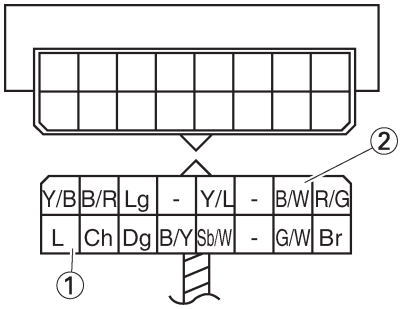
The wiring circuit from the main switch to the headlight coupler is faulty and must be repaired.

EAS00789
## 2. The meter light fails to come on.

| 1. Meter light (LEDs) |
|---|
| • Check the meter light for continuity. Refer to “CHECKING THE LEDs”<br>• Are the meter light OK? |

YES

NO → Replace the meter assembly.

| 2. Voltage |
|---|
| • Connect the pocket tester (DC 20 V) to the meter assembly coupler (wire harness side) as shown. |
| **Positive tester probe → blue ①**<br>**Negative tester probe → black/white ②** |
|  |
| • Turn the main switch to “ON”.<br>• Measure the voltage (DC 12 V) of blue ① on the meter assembly coupler (wire harness side).<br>• Is the voltage within specification? |

YES → This circuit is OK.

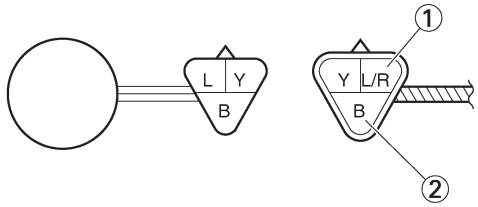
NO → The wiring circuit from the main switch to the meter assembly coupler is faulty and must be repaired.

EAS00790
## 3. The tail/brake light fails to come on.

| 1. Tail/brake light (LEDs) |
|---|
| • Check the tail/brake light for continuity. Refer to “CHECKING THE LEDs”<br>• Are the tail/brake light OK? |

YES

NO → Replace the tail/brake light assembly.

| 2. Voltage |
|---|
| • Connect the pocket tester (DC 20 V) to the tail/brake light coupler (wire harness side) as shown. |
| **Positive tester probe → blue/red ①**<br>**Negative tester probe → black ②** |
|  |
| • Turn the main switch to “ON”.<br>• Measure the voltage (DC 12 V) of blue/red ① on the tail/brake light coupler (wire harness side).<br>• Is the voltage within specification? |

YES → This circuit is OK.

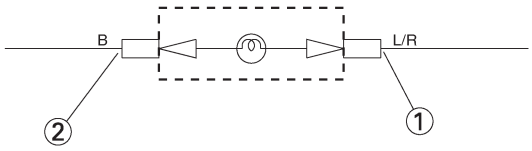
NO → Wiring circuit from the main switch to the tail/brake light coupler is faulty and must be repaired.

EAS00792
4. The license light fails to come on.

| 1. License light bulb and socket |
| --- |
| • Check the license light bulb and socket for continuity.<br>Refer to “CHECKING THE BULBS AND BULB SOCKETS”<br>• Are the license light bulb and socket OK? |

⇩ YES ⇓ NO

Replace the license light bulb, socket or both.

| 2. Voltage |
| --- |
| • Connect the pocket tester (DC 20 V) to the license light coupler (wire harness light side) as shown. |
| **Positive tester probe → blue/red** ①<br>**Negative tester probe → black** ② |
|  |
| • Turn the main switch to “ON”.<br>• Measure the voltage (DC 12 V) of blue/red ① on the license light coupler (wire harness side).<br>• Is the voltage within specification? |

⇩ YES ⇓ NO

This circuit is OK.

The wiring circuit from the main switch to the license light coupler is faulty and must be repaired.

# YZF-R6 (S) 2004 WIRING DIAGRAM

① Main switch
② A.C. magneto
③ Rectifier/regulator
④ Fuse (back up)
⑤ Battery
⑥ Fuse (main)
⑦ Starter relay
⑧ Starter motor
⑨ Fuse (fuel injection)
⑩ Immobilizer unit
⑪ Fuse (ignition)
⑫ Starting circuit cut-off relay
⑬ Sidestand switch
⑭ Fuel pump
⑮ ECU
⑯ Ignition coil
⑰ Spark plug
⑱ Injector
⑲ AI system solenoid
⑳ Neutral switch
㉑ Crankshaft position sensor
㉒ Intake air temperature sensor
㉓ Coolant temperature sensor
㉔ Throttle position sensor
㉕ Intake air pressure sensor
㉖ Atmospheric pressure sensor
㉗ Cylinder identification sensor
㉘ Speed sensor
㉙ Lean angle cut-off switch
㉚ Meter assembly
㉛ Immobilizer indicator light
㉜ Fuel level waning light
㉝ Oil level warning light
㉞ Neutral indicator light
㉟ Tacho meter
㊱ Engine speed indicator light
㊲ Multi-function meter
㊳ Engine trouble warning light
㊴ Coolant temperature indicator light
㊵ High beam indicator light
㊶ Turn signal indicator light
㊷ Meter light
㊸ Oil level switch
㊹ CYCLE LOCK
㊺ Right handlebar switch
㊻ Front brake light switch
㊼ Engine stop switch
㊽ Start switch
㊾ Fuse (signal)
㊿ Fuse (headlight)
(51) Fuse (radiator fan motor)
(52) Radiator fan motor relay
(53) Radiator fan motor
(54) Headlight relay (on/off)
(55) Headlight relay (dimmer)
(56) Fuse (park)
(57) Rear brake light switch
(58) Left handlebar switch
(59) Clutch switch
(60) Pass switch
(61) Dimmer switch
(62) Horn switch
(63) Hazard switch
(64) Turn signal switch
(65) Horn
(66) Turn signal relay
(67) Rear turn signal light (right)
(68) Rear turn signal light (left)
(69) Front turn signal light (right)
(70) Front turn signal light (left)
(71) Headlight
(72) License light
(73) Tail/brake light

## COLOR CODE

| | |
|---|---|
| B . . . . . | Black |
| Br . . . . . | Brown |
| Ch . . . . . | Chocolate |
| Dg . . . . . | Dark green |
| G . . . . . | Green |
| Gy . . . . . | Gray |
| L . . . . . | Blue |
| Lg . . . . . | Light green |
| O . . . . . | Orange |
| P . . . . . | Pink |
| R . . . . . | Red |
| Sb . . . . . | Sky blue |
| W . . . . . | White |
| Y . . . . . | Yellow |
| B/G . . . . | Black/Green |
| B/L . . . . . | Black/Blue |
| B/R . . . . | Black/Red |
| B/W . . . . | Black/White |
| B/Y . . . . | Black/Yellow |
| Br/G . . . | Brown/Green |
| Br/L . . . . | Brown/Blue |
| Br/R . . . . | Brown/Red |
| Br/W . . . | Brown/White |
| G/B . . . . | Green/Black |
| G/W . . . . | Green/White |
| G/Y . . . . | Green/Yellow |
| Gy/G . . . | Gray/Green |
| Gy/R . . . | Gray/Red |
| L/B . . . . . | Blue/Black |
| L/R . . . . | Blue/Red |
| L/W . . . . | Blue/White |
| L/Y . . . . . | Blue/Yellow |
| O/B . . . . | Orange/Black |
| O/G . . . . | Orange/Green |
| P/W . . . . | Pink/White |
| R/B . . . . | Red/Black |
| R/G . . . . | Red/Green |
| R/L . . . . | Red/Blue |
| R/W . . . . | Red White |
| R/Y . . . . | Red/Yellow |
| Sb/W . . . | Sky blue/White |
| W/B . . . . | White/Black |
| W/R . . . . | White/Red |
| W/Y . . . . | White/Yellow |
| Y/B . . . . | Yellow/Black |
| Y/G . . . . | Yellow/Green |
| Y/L . . . . . | Yellow/Blue |
| Y/W . . . . | Yellow/White |

YAMAHA

YAMAHA MOTOR CO., LTD.
2500 SHINGAI IWATA SHIZUOKA JAPAN

# YZF-R6 (S) 2004 WIRING DIAGRAM