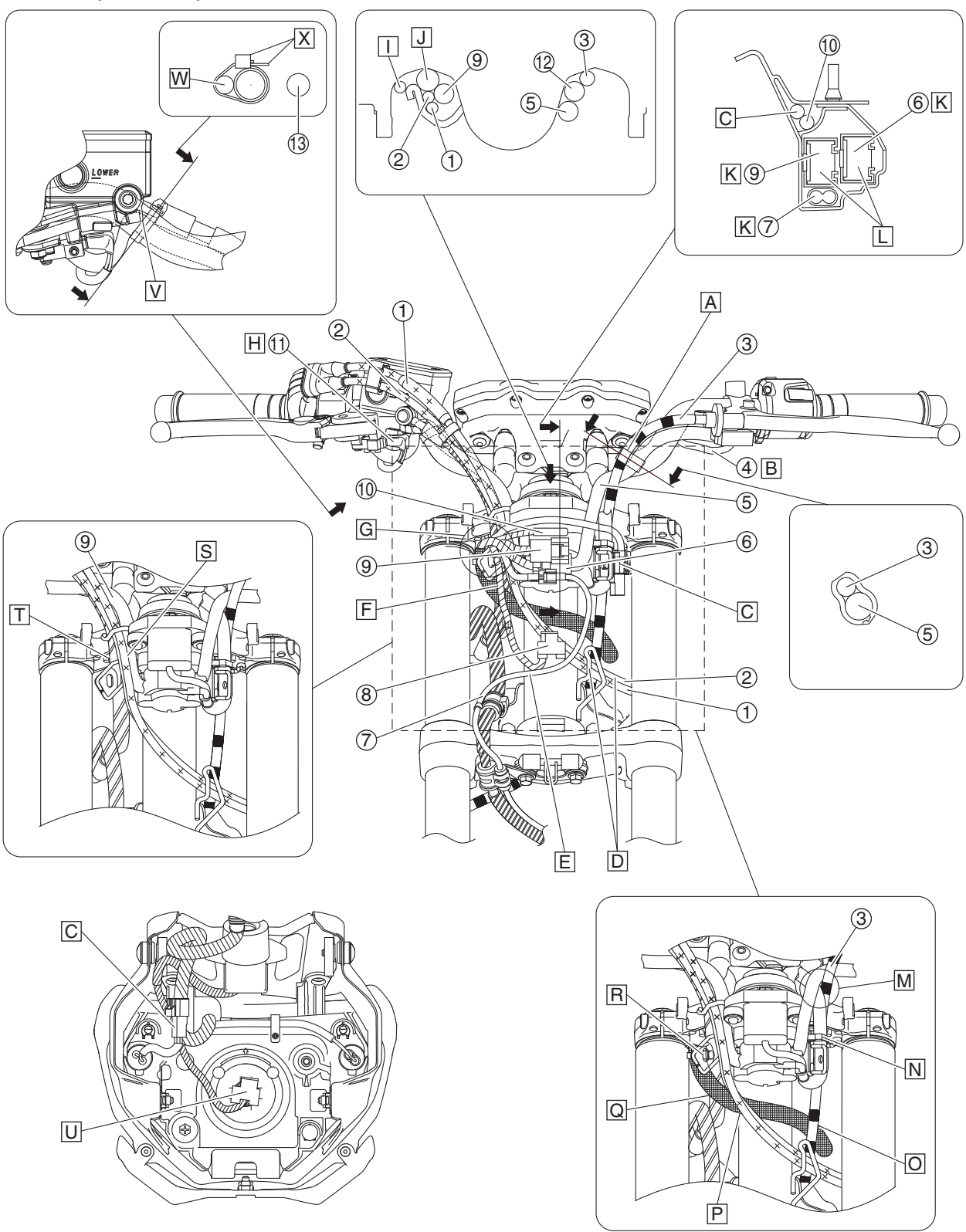

TABLE OF CONTENTS

GENERAL INFORMATION	1
SPECIFICATIONS	2
PERIODIC CHECKS AND ADJUSTMENTS	3
CHASSIS	4
ENGINE	5
COOLING SYSTEM	6
FUEL SYSTEM	7
ELECTRICAL SYSTEM	8
APPENDIX	9

EAS20021

CABLE ROUTING

Handlebar (front view)



EAS30168

INTRODUCTION

EWA14101

WARNING

Disc brake components rarely require disassembly. Therefore, always follow these preventive measures:

- Never disassemble brake components unless absolutely necessary.
- If any connection on the hydraulic brake system is disconnected, the entire brake system must be disassembled, drained, cleaned, properly filled, and bled after reassembly.
- Never use solvents on internal brake components.
- Use only clean or new brake fluid for cleaning brake components.
- Brake fluid may damage painted surfaces and plastic parts. Therefore, always clean up any spilt brake fluid immediately.
- Avoid brake fluid coming into contact with the eyes as it can cause serious injury.

FIRST AID FOR BRAKE FLUID ENTERING THE EYES:

- Flush with water for 15 minutes and get immediate medical attention.

EAS30169

CHECKING THE FRONT BRAKE DISCS

The following procedure applies to both brake discs.

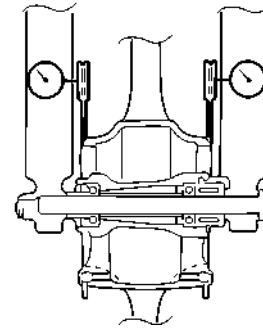
1. Remove:
 - Front wheel
Refer to "FRONT WHEEL" on page 4-16.
2. Check:
 - Front brake disc
Damage/galling → Replace.
3. Measure:
 - Brake disc deflection
Out of specification → Correct the brake disc deflection or replace the brake disc.



Brake disc runout limit (as measured on wheel)
0.10 mm (0.0039 in)

- a. Place the vehicle on a suitable stand so that the front wheel is elevated.
- b. Before measuring the brake disc deflection, turn the handlebar to the left or right to ensure that the front wheel is stationary.
- c. Remove the brake caliper.

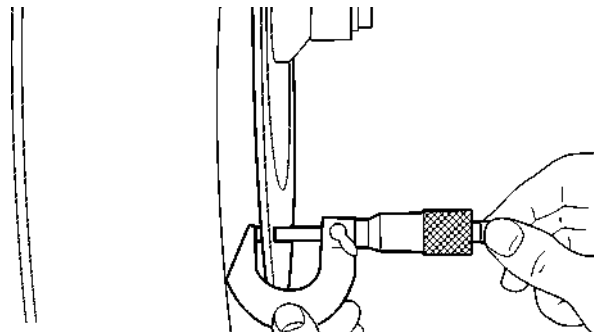
- d. Hold the dial gauge at a right angle against the brake disc surface.
- e. Measure the deflection 1.5 mm (0.06 in) below the edge of the brake disc.



4. Measure:
 - Brake disc thickness
Measure the brake disc thickness at a few different locations.
Out of specification → Replace.



Brake disc thickness limit
4.0 mm (0.16 in)



5. Adjust:
 - Brake disc deflection
 - a. Remove the brake disc.
 - b. Rotate the brake disc by one bolt hole.
 - c. Install the brake disc.



Front brake disc bolt
18 N·m (1.8 kgf·m, 13 lb·ft)
LOCTITE®

ECA19150

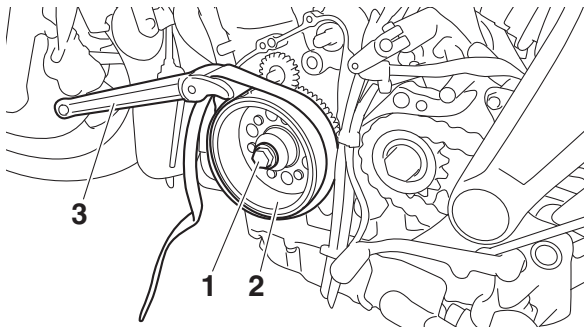
NOTICE

Replace the brake disc bolts with new ones.

TIP

- Install each front brake disc so that the chamfered portions of the rivets "a" face outward.
- Tighten the brake disc bolts in stages and in a crisscross pattern.

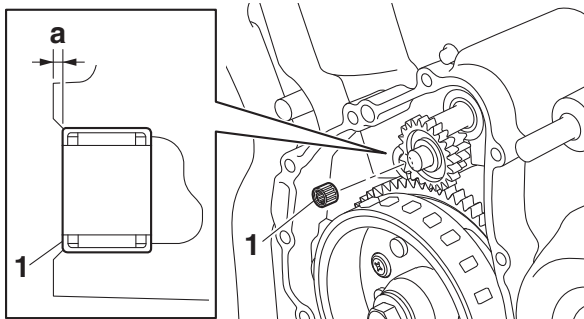
GENERATOR AND STARTER CLUTCH



3. Install:
- Bearing "1"

TIP

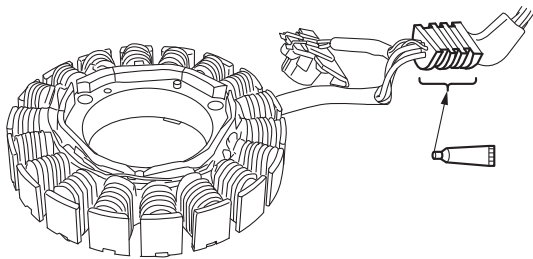
Make sure that the bearing does not protrude past the surface "a" of the cylinder.



4. Apply:
- Sealant
(onto the stator coil lead grommet)



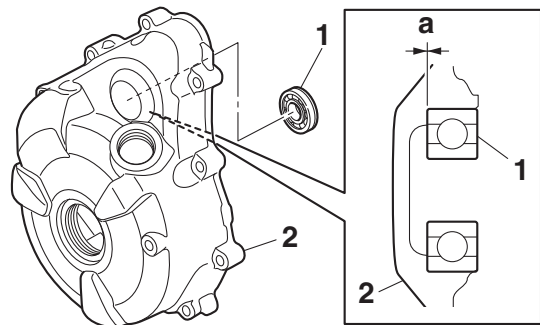
Yamaha bond No. 1215
90890-85505
(Three bond No.1215®)



5. Install:
- Bearing "1"

TIP

Make sure that the bearing contacts the surface "a" of the generator cover "2".



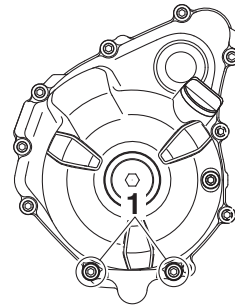
6. Install:
- Generator cover gasket **New**
 - Generator cover



Generator cover bolt
12 N·m (1.2 kgf·m, 8.9 lb·ft)
LOCTITE®
Generator cover bolt
12 N·m (1.2 kgf·m, 8.9 lb·ft)

TIP

- Tighten the generator cover bolts in stages and in a crisscross pattern.
- Apply LOCTITE® to the threads of only the generator cover bolts "1" shown in the illustration.



7. Connect:
- Stator coil coupler
 - Crankshaft position sensor coupler

TIP

To route the stator coil lead, refer to "CABLE ROUTING" on page 2-15.

IMPORTANT

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. Please refer to "BASIC INFORMATION" (separate volume, Y0A-28197-10*) for basic instructions that must be observed during servicing. Repair and maintenance work attempted by anyone without this knowledge is likely to render the vehicle unsafe and unfit for use.

This model has been designed and manufactured to perform within certain specifications in regard to performance and emissions. Proper service with the correct tools is necessary to ensure that the vehicle will operate as designed. If there is any question about a service procedure, it is imperative that you contact a Yamaha dealer for any service information changes that apply to this model. This policy is intended to provide the customer with the most satisfaction from their vehicle and to conform to federal environmental quality objectives.



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.

TIP

- * If the contents of the manual are revised, the last digit of the manual number will be increased by one.
- This Service Manual contains information regarding periodic maintenance to the emission control system. Please read this material carefully.
- Designs and specifications are subject to change without notice.

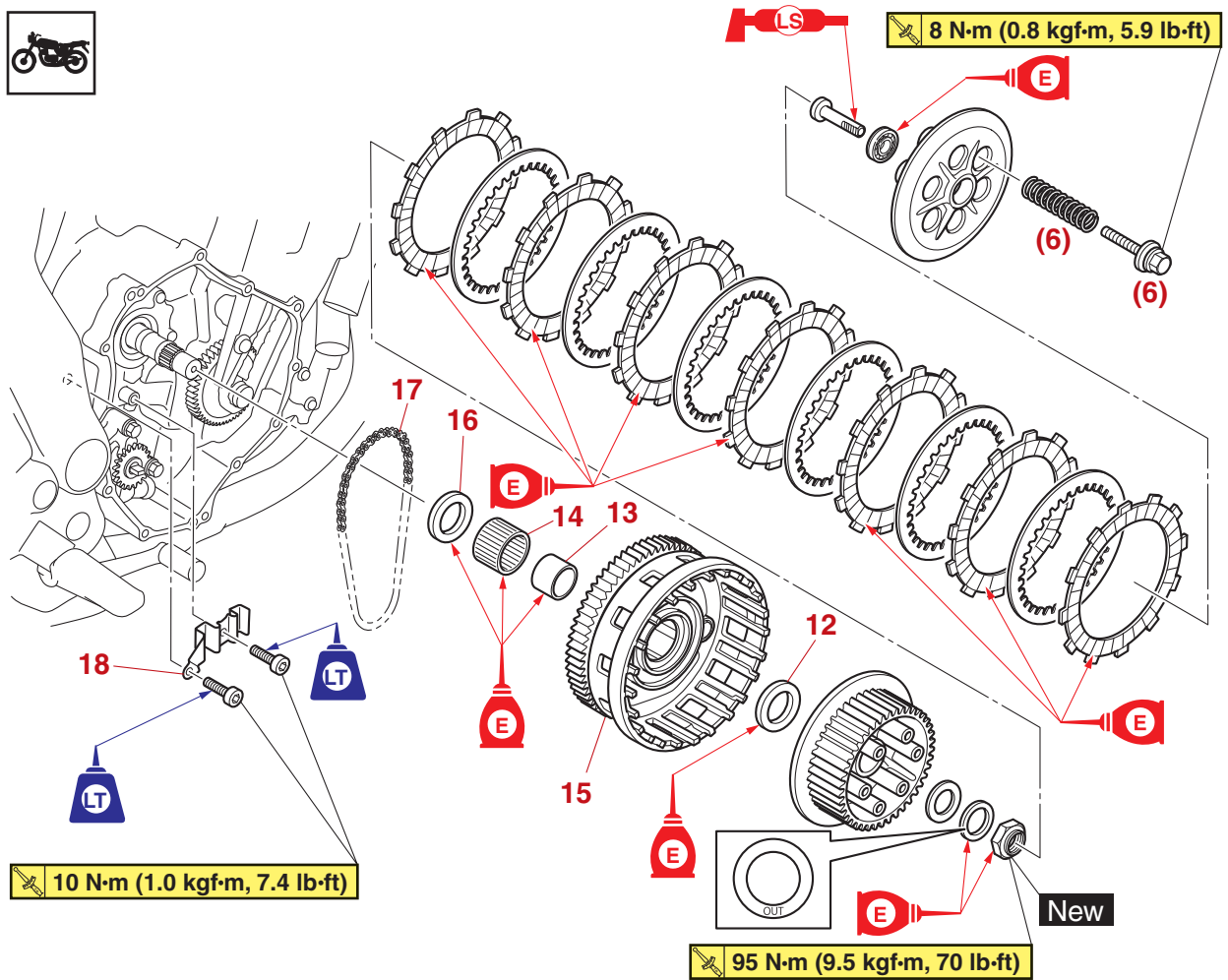
IMPORTANT MANUAL INFORMATION

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

	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
 WARNING	A WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.
NOTICE	A NOTICE indicates special precautions that must be taken to avoid damage to the vehicle or other property.
TIP	A TIP provides key information to make procedures easier or clearer.

MT07M/MT07MC
SERVICE MANUAL
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
Removing the clutch




Order	Job/Parts to remove	Q'ty	Remarks
12	Thrust plate	1	
13	Spacer	1	
14	Bearing	1	
15	Clutch housing	1	
16	Thrust plate	1	
17	Oil pump drive chain	1	
18	Oil pump drive chain guide	1	

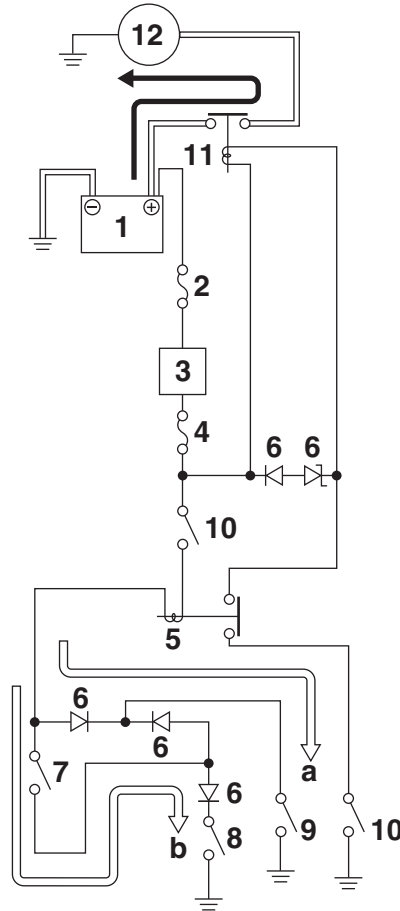
EAS30494

STARTING CIRCUIT CUT-OFF SYSTEM OPERATION

If the main switch is turned to “ON” and the “” side of the start/engine stop switch is pushed, the starter motor can only operate if at least one of the following conditions is met:

- The transmission is in neutral (the neutral circuit of the gear position switch is closed).
- The clutch lever is pulled to the handlebar (the clutch switch is closed) and the sidestand is up (the sidestand switch is closed).

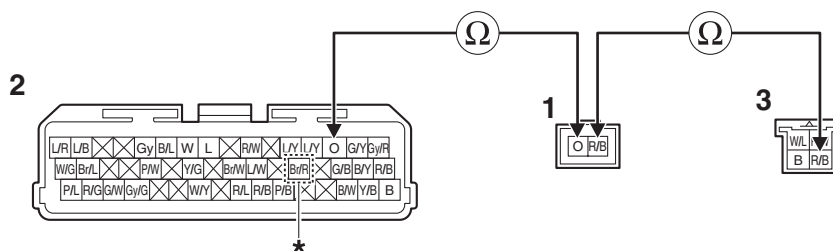
The starting circuit cut-off relay prevents the starter motor from operating when neither of these conditions has been met. In this instance, the starting circuit cut-off relay is open so current cannot reach the starter motor. When at least one of the above conditions has been met, the starting circuit cut-off relay is closed and the engine can be started by pressing the “” side of the start/engine stop switch.



- | | |
|---|------------------------------|
| a. WHEN THE TRANSMISSION IS IN NEUTRAL | 7. Clutch switch |
| b. WHEN THE SIDESTAND IS UP AND THE CLUTCH LEVER IS PULLED TO THE HANDLEBAR | 8. Sidestand switch |
| | 9. Gear position switch |
| | 10. Start/engine stop switch |
| | 11. Starter relay |
| | 12. Starter motor |
| 1. Battery | |
| 2. Main fuse | |
| 3. Main switch | |
| 4. Ignition fuse | |
| 5. Starting circuit cut-off relay | |
| 6. Relay unit (diode) | |

Between cylinder-#1 ignition coil coupler and handlebar switch coupler (right)

red/black–red/black



*. For California: Br/R Except for California: blank

Is resistance 0 Ω?

YES

→ Go to “Short circuit check”.

NO

- Replace the wire harness.
- Start the engine and let it idle for approximately 5 seconds.
- Check the condition of the DTC using the malfunction mode of the YDT.

Is it in the “Recovered” condition?

YES

→ Go to step 7, and complete the service.

NO

→ Go to “Short circuit check”.

• Short circuit check

TIP

Disconnect the ECU related connectors before checking.

Refer to “PARTS CONNECTED TO THE ECU” on page 9-3.

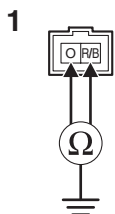
Ground short circuit check “A”

Between cylinder-#1 ignition coil coupler “1” and ground	orange–ground red/black–ground
--	-----------------------------------

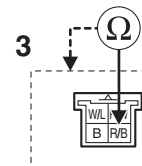
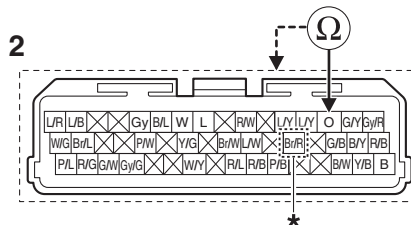
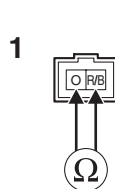
Lines short circuit check “B”

Cylinder-#1 ignition coil coupler “1”	orange–red/black
ECU coupler “2”	orange–any other coupler terminal
Handlebar switch coupler (right) “3”	red/black–any other coupler terminal

A



B



*. For California: Br/R Except for California: blank

- c. Tighten the locknut "1" to specification.



Rear brake pedal adjusting locknut
18 N·m (1.8 kgf·m, 13 lb·ft)

EWA17030

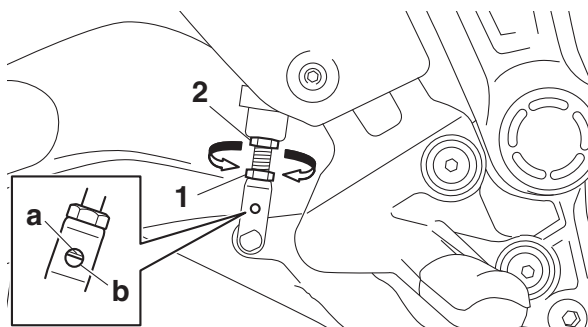
WARNING

A soft or spongy feeling in the brake pedal can indicate the presence of air in the brake system. Before the vehicle is operated, the air must be removed by bleeding the brake system. Air in the brake system will considerably reduce braking performance.

ECA13510

NOTICE

After adjusting the brake pedal position, make sure there is no brake drag.



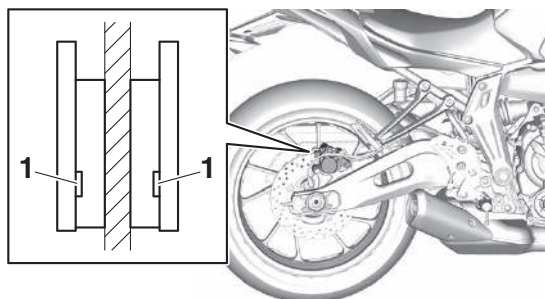
2. Adjust:
 - Rear brake light switch
Refer to "ADJUSTING THE REAR BRAKE LIGHT SWITCH" on page 3-26.

EAS30634

CHECKING THE REAR BRAKE PADS

The following procedure applies to all of the brake pads.

1. Operate the brake.
2. Check:
 - Rear brake pad
Wear indicators "1" almost touch the brake disc → Replace the brake pads as a set.
Refer to "REAR BRAKE" on page 4-48.



EAS30894

CHECKING THE BRAKE HOSES

The following procedure applies to all of the brake hoses and brake hose holders.

1. Check:
 - Brake hose
Cracks/damage/wear → Replace.
2. Check:
 - Brake hose holder
Loose → Tighten the holder bolts.
3. Hold the vehicle upright and apply the brake several times.
4. Check:
 - Brake hose
Brake fluid leakage → Replace the damaged hose.
Refer to "FRONT BRAKE" on page 4-36, "REAR BRAKE" on page 4-48 and "ABS (ANTI-LOCK BRAKE SYSTEM)" on page 4-60.

EAS30893

BLEEDING THE HYDRAULIC BRAKE SYSTEM (ABS)

EWA14000

WARNING

Always bleed the brake system when the brake related parts are removed.

ECA18050

NOTICE

- Bleed the brake system in the following order.
- 1st step: Front brake calipers
- 2nd step: Rear brake caliper

EWA16530

WARNING

Bleed the ABS whenever:

- the system is disassembled.
- a brake hose is loosened, disconnected or replaced.
- the brake fluid level is very low.
- brake operation is faulty.

12. ISC (Idle Speed Control) valve is not moving correctly.

- Check the ISC (Idle Speed Control) valve.

Refer to “CLEANING THE ISC (IDLE SPEED CONTROL) VALVE” on page 7-12.

Is check result OK?

YES

→ Go to step 13.

NO

- a. Replace the ISC (Idle Speed Control) unit.
Refer to “THROTTLE BODIES” on page 7-9.
- b. Execute the diagnostic mode. (Code 54)

Is the ISC operating sound heard?

YES

→ Go to step 14, and complete the service.

NO

→ Go to step 13.

13. Malfunction in ECU.

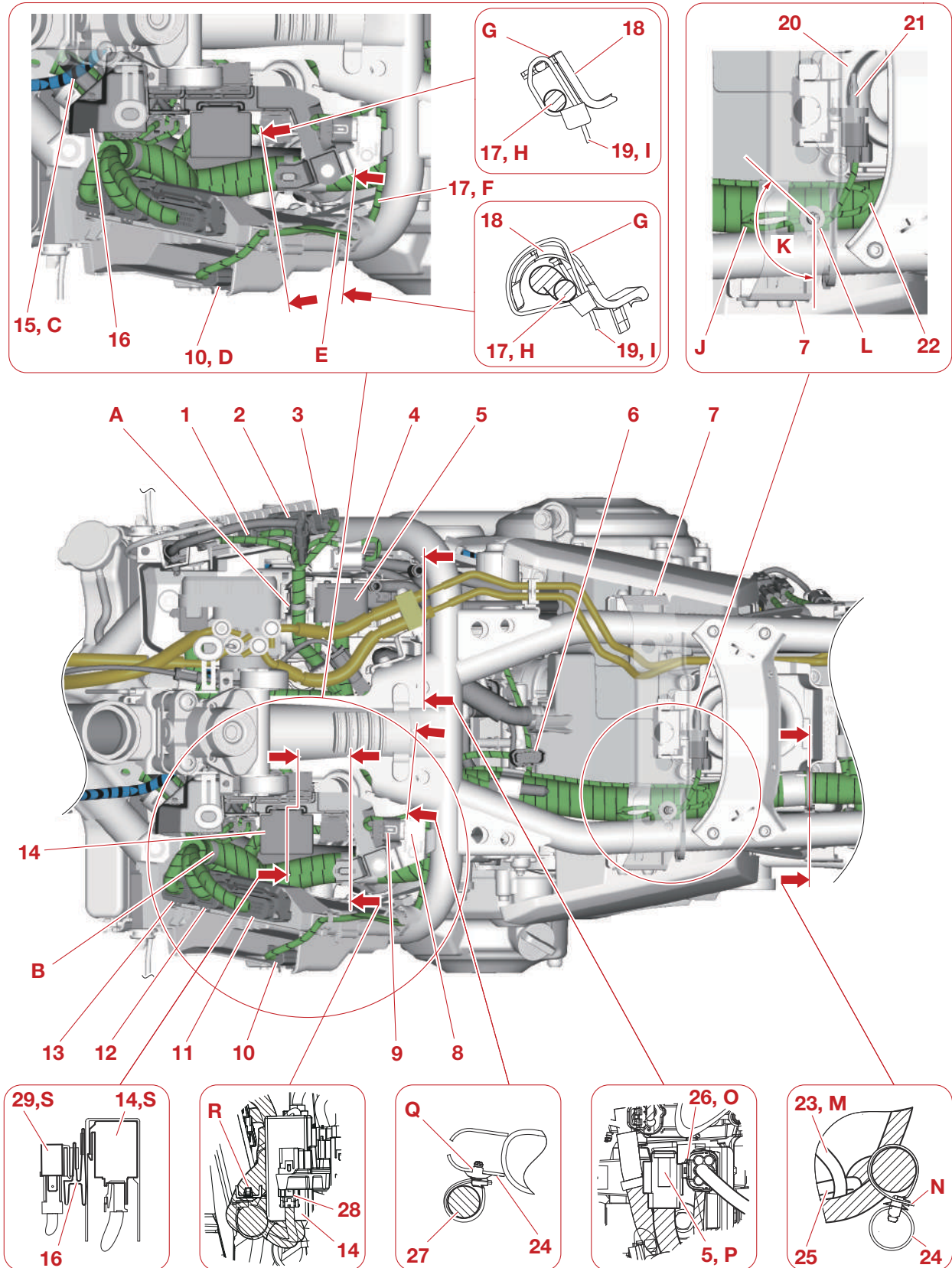
- Replace the ECU.

Refer to “REPLACING THE ECU (Engine Control Unit)” on page 8-40.

14. Delete the DTC and check that the MIL goes off.

- Start the engine and let it idle for approximately 10 seconds.
- Confirm that the DTC has a condition of “Recovered” using the YDT, and then delete the DTC.

Frame (font top view)



EAS30175

INSTALLING THE FRONT BRAKE CALIPERS

The following procedure applies to both of the brake calipers.

1. Install:

- Front brake caliper “1” (temporarily)
- Brake hose gasket **New**
- Brake hose “2”
- Brake hose union bolt “3”



EWA13531

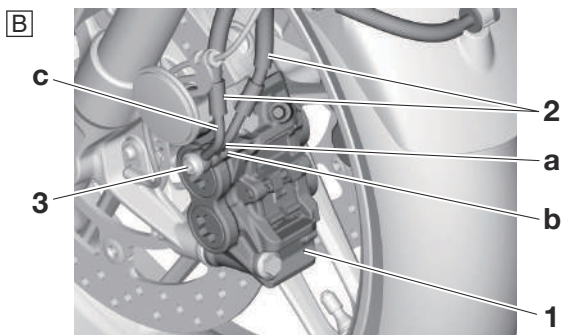
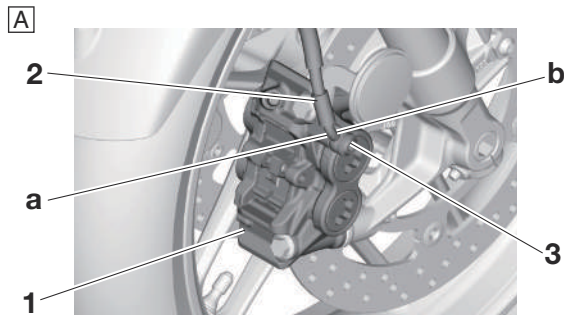
WARNING

Proper brake hose routing is essential to insure safe vehicle operation.

ECA21410

NOTICE

- When installing the brake hose onto the brake caliper “1”, make sure the brake pipe “a” touches the projection “b” on the brake caliper.
- Install the brake pipe “c” so that it is aligned with the brake pipe “a”.



- A. Right side
B. Left side

2. Remove:

- Front brake caliper

3. Install:

- Brake pad
- Brake pad spring
- Brake pad pin
- Brake pad clip
- Front brake caliper



Refer to “REPLACING THE FRONT BRAKE PADS” on page 4-36.

4. Fill:

- Brake master cylinder reservoir (with the specified amount of the specified brake fluid)



EWA13090

WARNING

- Use only the designated brake fluid. Other brake fluids may cause the rubber seals to deteriorate, causing leakage and poor brake performance.
- Refill with the same type of brake fluid that is already in the system. Mixing brake fluids may result in a harmful chemical reaction, leading to poor brake performance.
- When refilling, be careful that water does not enter the brake fluid reservoir. Water will significantly lower the boiling point of the brake fluid and could cause vapor lock.

ECA13540

NOTICE

Brake fluid may damage painted surfaces and plastic parts. Therefore, always clean up any spilt brake fluid immediately.

5. Bleed:

- Brake system
Refer to “BLEEDING THE HYDRAULIC BRAKE SYSTEM (ABS)” on page 3-14.

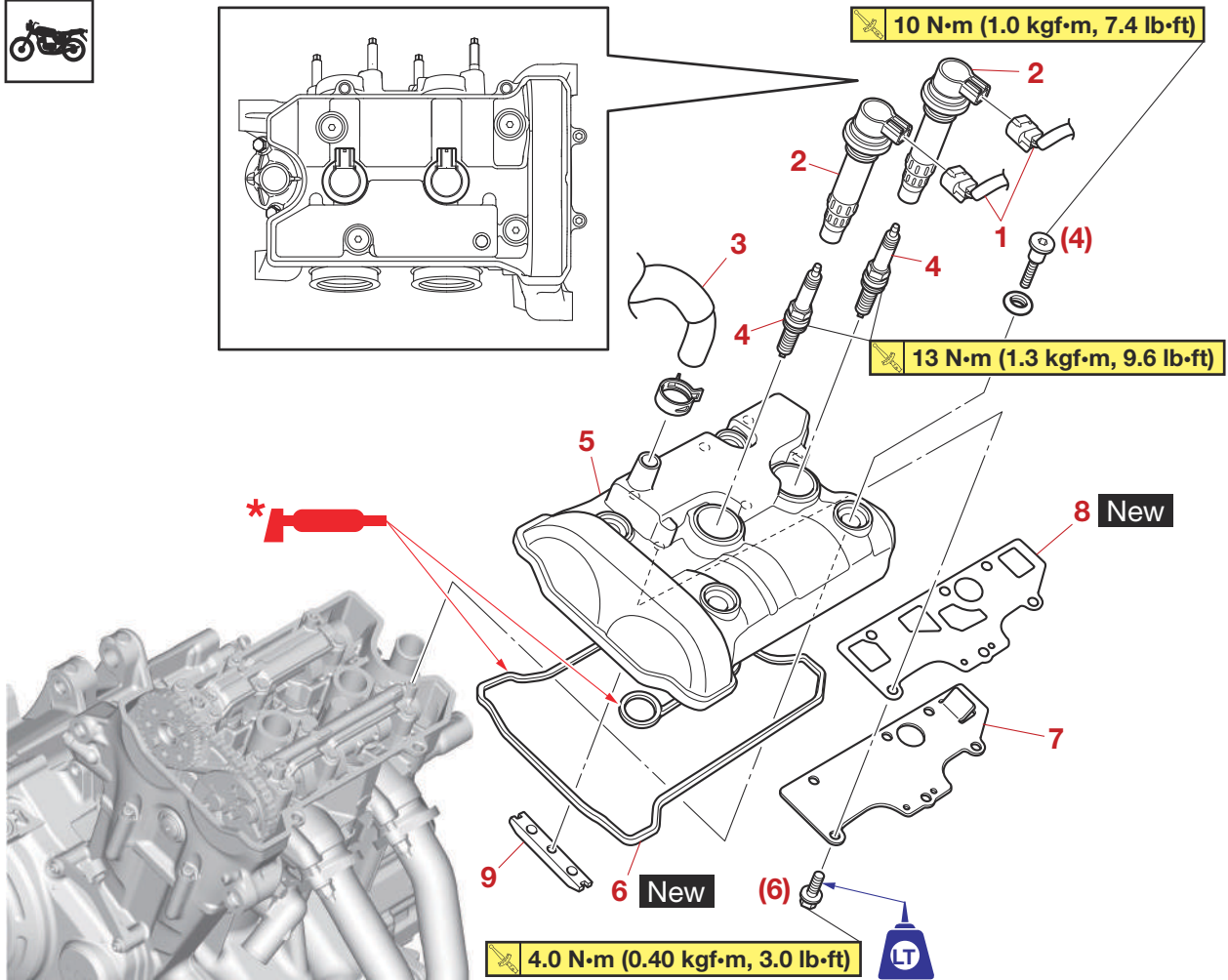
6. Check:

- Brake fluid level
Below the minimum level mark → Add the specified brake fluid to the proper level.
Refer to “CHECKING THE BRAKE FLUID LEVEL” on page 3-15.

7. Check:

- Brake lever operation
Soft or spongy feeling → Bleed the brake system.
Refer to “BLEEDING THE HYDRAULIC

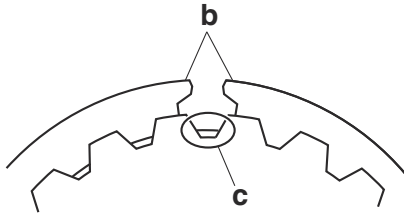
Removing the cylinder head cover



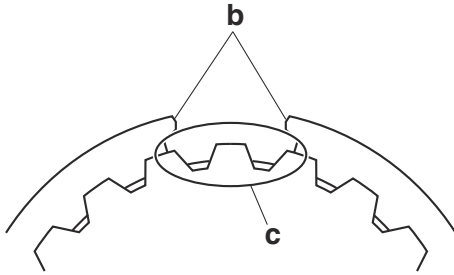
* Three Bond No. 1541C®

Order	Job/Parts to remove	Q'ty	Remarks
1	Ignition coil coupler	2	Disconnect.
2	Ignition coil	2	
3	Cylinder head breather hose	1	Disconnect.
4	Spark plug	2	
5	Cylinder head cover	1	
6	Cylinder head cover gasket	1	
7	Breather plate	1	
8	Breather plate gasket	1	
9	Timing chain guide (upper side)	1	

A



B



A. Main axle

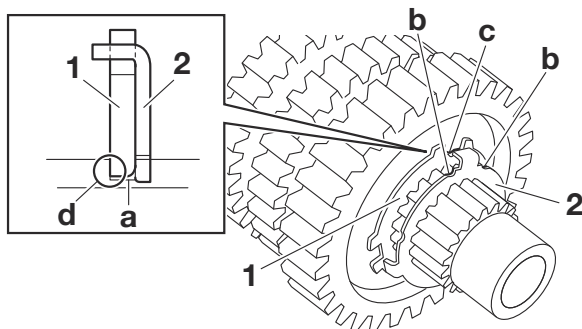
B. Drive axle

3. Install:

- Toothed lock washer retainer "1"
- Toothed lock washer "2"

TIP

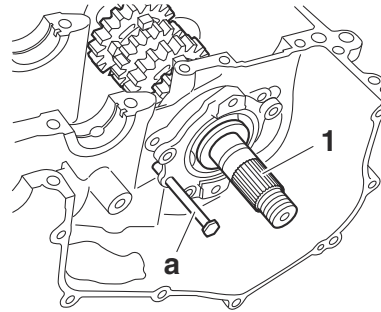
- With the toothed lock washer retainer in the groove "a" in the axle, align the projection on the retainer with an axle spline and then install the toothed lock washer.
- Be sure to align the projection on the toothed lock washer that is between the alignment marks "b" with the alignment mark "c" on the retainer.
- Be sure the toothed lock washer retainer sharp-edged corner "d" is positioned opposite side to the toothed lock washer.



Bearing retainer bolt
12 N·m (1.2 kgf·m, 8.9 lb·ft)
LOCTITE®

TIP

Use a suitable pin "a" to position the bearing housing, and then install the housing until it contacts the cylinder.



2. Install:

- Shift fork "C"
- Shift drum assembly
- Shift fork guide bar

TIP

- The embossed marks on the shift forks should face towards the right side of the engine.
- Install shift fork "C" into the groove in the 3rd pinion gear on the main axle.

3. Install:

- Shift fork "L" "1"
- Shift fork "R" "2"
- Shift fork guide bar
- Shift drum retainer
- Drive axle assembly "3"



Shift drum retainer bolt
10 N·m (1.0 kgf·m, 7.4 lb·ft)
LOCTITE®

TIP

- Install shift fork "L" into the groove in the 6th wheel gear and shift fork "R" into the groove in the 5th wheel gear on the drive axle.
- Make sure that the projection "a" on the drive axle assembly is inserted into the slot in the cylinder.
- Make sure that the drive axle bearing circlip "b" and flange "c" of the oil seal are inserted into the grooves in the cylinder.

EAS30438

INSTALLING THE TRANSMISSION

1. Install:

- Main axle assembly "1"
- Bearing retainer