



**YAMAHA**

**2006**

**YZF-R1(V)  
YZF-R1S(V)**

5VY-28197-E2

**SUPPLEMENTARY  
SERVICE MANUAL**



---

## **FOREWORD**

This Supplementary Service Manual has been prepared to introduce new service and data for the YZF-R1 (V)/YZF-R1S (V) 2006. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

**YZF-R1 (S) 2004 SERVICE MANUAL: 5VY1-AE1**

**YZF-R1 (V)/YZF-R1S (V) 2006  
SUPPLEMENTARY  
SERVICE MANUAL  
©2005 by Yamaha Motor Co., Ltd.  
First Edition, October 2005  
All rights reserved.  
Any reproduction or unauthorized use  
without the written permission of  
Yamaha Motor Co., Ltd.  
is expressly prohibited.**

---

## 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.

---

## 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!



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

**CAUTION:**

A CAUTION indicates special precautions that must be taken to avoid damage to the vehicle.

**NOTE:**

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

## 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.

②      ①

CLUTCH    ENG

---

**CLUTCH**  
CLUTCH COVER

④

⑤

⑥

⑦

Order	Job/Part	Qty	Remarks
<b>Removing the clutch cover</b>			
	Right side cowling		Remove the parts in the order listed.
	Bottom cowling		Refer to "COWLINGS" in chapter 3.
	Engine oil		Drain. Refer to "CHANGING THE ENGINE OIL" in chapter 3.
1	Cover	1	
2	Clutch cable	1	Disconnect.
3	Clutch cover	1	
4	Clutch cover gasket	1	
5	Dowel pin	2	
6	Oil filler cap	1	
For installation, reverse the removal procedure.			

5-46

CLUTCH    ENG

---

③

**REMOVING THE CLUTCH**

1. Remove:

- clutch cover ①
- gasket

**NOTE:**  
Loosen each bolt 1/4 of a turn at a time, in stages and in a crisscross pattern. After all of the bolts are fully loosened, remove them.

2. Remove:

- compression spring bolts ①
- compression springs
- pressure plate ②
- pull rod ③

3. Remove:

- friction plate 1

4. Remove:

- clutch plate 1 ①
- friction plate 2

5. Straighten the clutch boss nut rib ①.

⑧

5-50

**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.

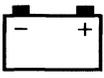
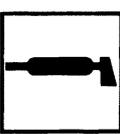
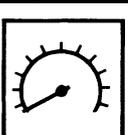
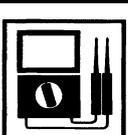
- ⑩ Serviceable with engine mounted
- ⑪ Filling fluid
- ⑫ Lubricant
- ⑬ Special tool
- ⑭ Tightening torque
- ⑮ Wear limit, clearance
- ⑯ Engine speed
- ⑰ Electrical data

Symbols ⑱ to ⑳ 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 with a new one.

① GEN INFO 	② SPEC 	
③ CHK ADJ 	④ CHAS 	
⑤ ENG 	⑥ COOL 	
⑦ FI 	⑧ ELEC 	
⑨ TRBL SHTG ?	⑩ 	
⑪ 	⑫ 	
⑬ 	⑭ 	
⑮ 	⑯ 	⑰ 
⑱ 	⑲ 	⑳ 
㉑ 	㉒ 	㉓ 
㉔ 	㉕ <b>New</b>	

---

# CONTENTS

## GENERAL INFORMATION

SPECIAL TOOLS .....	1
---------------------	---

## SPECIFICATIONS

GENERAL SPECIFICATIONS .....	2
ENGINE SPECIFICATIONS .....	3
CHASSIS SPECIFICATIONS .....	5
ELECTRICAL SPECIFICATIONS .....	8
TIGHTENING TORQUES .....	8
ENGINE TIGHTENING TORQUES .....	8
CHASSIS TIGHTENING TORQUES .....	9
LUBRICATION POINTS AND LUBRICANT TYPES .....	10
ENGINE .....	10
CHASSIS .....	10
LUBRICATION DIAGRAMS .....	11
CABLE ROUTING .....	12

## PERIODIC CHECKS AND ADJUSTMENTS

INTRODUCTION .....	28
PERIODIC MAINTENANCE AND LUBRICATION INTERVALS .....	28
CHASSIS .....	30
ADJUSTING THE FRONT FORK LEGS .....	30
ADJUSTING THE REAR SHOCK ABSORBER ASSEMBLY .....	33

## CHASSIS

FRONT WHEEL AND BRAKE DISCS .....	36
REAR WHEEL AND BRAKE DISCS .....	37
REAR BRAKE DISC AND REAR WHEEL SPROCKET .....	37
FRONT FORK .....	39
FRONT FORK LEGS .....	39
DISASSEMBLING THE FRONT FORK LEGS .....	41
CHECKING THE FRONT FORK LEGS .....	43
ASSEMBLING THE FRONT FORK LEGS .....	44
REAR SHOCK ABSORBER ASSEMBLY .....	48
REMOVING THE REAR SHOCK ABSORBER ASSEMBLY .....	50
INSTALLING THE REAR SHOCK ABSORBER ASSEMBLY .....	51
SWINGARM AND DRIVE CHAIN .....	52
REMOVING THE SWINGARM .....	52
CHECKING THE SWINGARM .....	53
CHECKING THE CONNECTING ROD ASSEMBLY .....	54
CHECKING THE DRIVE CHAIN .....	55

---

## **ENGINE**

ENGINE .....	57
INSTALLING THE ENGINE.....	59
CAMSHAFTS.....	61
<b>CLUTCH</b> .....	62
CLUTCH COVER .....	62
CLUTCH .....	63
REMOVING THE CLUTCH .....	67
CHECKING THE FRICTION PLATES.....	68
CHECKING THE CLUTCH PLATES .....	69
CHECKING THE CLUTCH SPRINGS.....	70
CHECKING THE CLUTCH HOUSING .....	70
CHECKING THE PRESSUR PLATE 2 .....	71
CHECKING THE CLUTCH BOSS.....	71
CHECKING THE PRESSURE PLATE 1 .....	71
CHECKING THE PULL LEVER SHAFT AND PULL ROD.....	72
INSTALLING THE CLUTCH .....	72

## **YZF-R1 (V)/YZF-R1S (V) 2006 WIRING DIAGRAM**



EAS00027

## GENERAL INFORMATION

### SPECIAL TOOLS

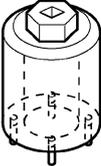
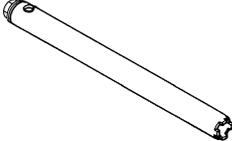
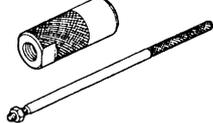
The following special tools are necessary for complete and accurate tune-up and assembly. Use only the appropriate special tools as this will help prevent damage caused by the use of inappropriate tools or improvised techniques. Special tools, part numbers or both may differ depending on the country.

When placing an order, refer to the list provided below to avoid any mistakes.

#### NOTE:

- For U.S.A. and Canada, use part number starting with "YM-", "YU-", or "ACC-".
- For others, use part number starting with "90890-".

(YZF-R1S)

Tool No.	Tool name/Function	Illustration
90890-01472	Front fork cap bolt wrench  This tool is used to loosen or tighten the front fork cap bolt.	
90890-01504	Damper rod holder  This tool is used to loosening or tightening the damper rod assembly.	
Rod puller 90890-01437 YM-A8703 Rod puller attachment 90890-01435 YM-A8703	Rod puller Rod puller attachment  These tools are used to pull up the front fork damper rod.	



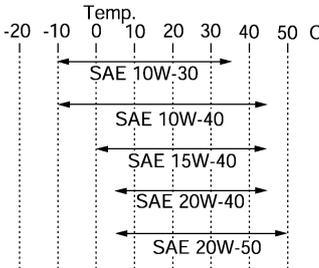
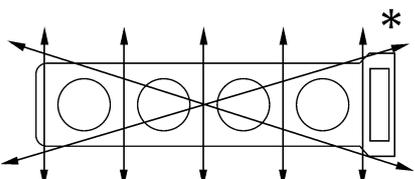
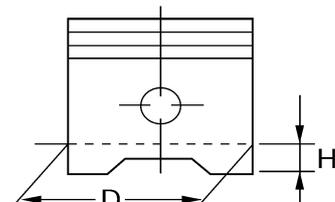
## SPECIFICATIONS

### GENERAL SPECIFICATIONS

Item	Standard	Limit
<b>Model code</b>	YZF-R1 5VYE (EUR), 5VYR (EUR), 5VYF (FRA), 5VYS (FRA), 5VYG (AUS), 5VYP (AUS) YZF-R1S 4B11 (EUR), 4B12 (FRA), 4B13 (AUS)	•••   •••
<b>Dimensions</b>		
Overall length	2,085 mm (82.1 in)	•••
Wheelbase	1,415 mm (55.7 in)	•••
<b>Weight</b>		
Wet (with oil and a full fuel tank)	194 kg (428 lb) (YZF-R1) 195 kg (430 lb) (YZF-R1S)	••• •••
Maximum load (except vehicle)	201 kg (443 lb) (YZF-R1) 200 kg (441 lb) (YZF-R1S)	••• •••



ENGINE SPECIFICATIONS

Item	Standard	Limit
<p><b>Engine oil</b> Recommended oil</p> 	<p>SAE10W30SE or SAE10W40SE or SAE15W40SE or SAE20W40SE or SAE20W50SE API service SE, SF, SG type or higher</p>	
<p><b>Oil pump</b> Oil-pump-housing-to-inner-and-outer-rotor clearance</p>	<p>0.06 ~ 0.13 mm (0.0024 ~ 0.0051 in)</p>	<p>0.20 mm (0.0079 in)</p>
<p><b>Cylinder head</b> Volume Max. warpage</p> 	<p>12.3 ~ 12.9 cm<sup>3</sup> (0.75 ~ 0.79 cu.in) •••</p>	<p>••• 0.10 mm (0.0039 in)</p>
<p><b>Piston</b> Diameter D</p>  <p>Height H</p>	<p>76.975 ~ 76.990 mm (3.0305 ~ 3.0311 in)</p>	<p>•••  •••</p>

## ENGINE SPECIFICATIONS

**SPEC**



Item	Standard	Limit
<b>Clutch</b>		
Friction plates		
Color code	Red	•••
Thickness	2.9 ~ 3.1 mm (0.114 ~ 0.122 in)	2.8 mm (0.110 in)
Plate quantity	7	•••
Color code	Red	•••
Thickness	2.9 ~ 3.1 mm (0.114~ 0.122 in)	2.8 mm (0.110 in)
Plate quantity	1	•••
Color code	Red	•••
Thickness	2.9 ~ 3.1 mm (0.114 ~ 0.122 in)	2.8 mm (0.110 in)
Plate quantity	1	•••
Clutch plates		
Thickness	1.9 ~ 2.1 mm (0.07 ~ 0.08 in)	•••
Plate quantity	8	•••
Max. warpage	•••	0.1 mm (0.0039 in)
Clutch springs		
Free length	43.8 mm (1.72 in) (YZF-R1S)	41.6 mm (1.64 in)
<b>Throttle bodies</b>		
ID mark	5VY1 30 (EUR, AUS), 5VY1 50 (FRA)	•••

## CHASSIS SPECIFICATIONS

**SPEC**



### CHASSIS SPECIFICATIONS

Item	Standard	Limit
<b>Front wheel</b> Wheel type	Forged wheel (YZF-R1S)	•••
<b>Rear wheel</b> Wheel type	Forged wheel (YZF-R1S)	•••
<b>Front tire</b> Model (manufacturer)	Pilot POWER (MICHELIN) (YZF-R1) D218FG (DUNLOP) (YZF-R1) DIABLO CORSA H (PIRELLI) (YZF-R1S)	••• ••• •••
Tire pressure (cold) 90 ~ 201 kg (198 ~ 443 lb)	250 kPa (2.5 kgf/cm <sup>2</sup> , 2.5 bar, 35.6 psi) (YZF-R1)	•••
90 ~ 200 kg (198 ~ 441 lb)	250 kPa (2.5 kgf/cm <sup>2</sup> , 2.5 bar, 35.6 psi) (YZF-R1S)	•••
<b>Rear tire</b> Model (manufacture)	Pilot POWER/Pilot POWER G (MICHELIN) (YZF-R1) D218G (DUNLOP) (YZF-R1) DIABLO CORSA (PIRELLI) (YZF-R1S)	••• ••• •••
Tire pressure (cold) 90 ~ 201 kg (198 ~ 443 lb)	290 kPa (2.9 kgf/cm <sup>2</sup> , 2.9 bar, 41.3 psi) (YZF-R1)	•••
90 ~ 200 kg (198 ~ 441 lb)	290 kPa (2.9 kgf/cm <sup>2</sup> , 2.9 bar, 41.3 psi) (YZF-R1S)	•••
<b>Front brakes</b> Master cylinder inside diameter	16 mm (0.63 in)	•••
Caliper cylinder inside diameter	30.2 mm and 27 mm (1.19 in and 1.06 in)	•••

## CHASSIS SPECIFICATIONS

**SPEC**



Item	Standard	Limit
<b>Front suspension</b>		
<b>(YZF-R1)</b>		
Fork oil		
Quantity (each front fork leg)	0.52 L (0.46 Imp qt, 0.55 US qt)	•••
Level (from the top of the outer tube, with the outer tube fully compressed, and without the fork spring)	90 mm (3.54 in)	•••
Spring preload adjusting positions		
Minimum	8	•••
Standard	4.5	•••
Maximum	0	•••
<b>(YZF-R1S)</b>		
Spring		
Free length	260 mm (10.24 in)	254.8 mm (10.03 in)
Coller length	42 mm (1.653 in)	•••
Installed length	248.0 mm (9.76 in)	•••
Spring rate (K1)	9.50 N/mm (0.97 kg/mm, 54.22 lb/in)	•••
Fork oil		
Recommended oil	Suspension oil "Ohlins R&T 43"	•••
Quantity (each front fork leg)	0.43 L (0.38 Imp qt, 0.45 US qt)	•••
Level (from the top of the outer tube, with the outer tube fully compressed, and without the fork spring)	145 mm (5.71 in)	•••
Spring preload adjusting positions		
Minimum*	11 turns out*	•••
Maximum*	2 turns in*	•••
*from the standard position		
Rebound damping adjusting positions		
Minimum**	17	•••
Standard**	12	•••
Maximum**	1	•••
Compression damping adjusting positions		
Minimum**	20	•••
Standard**	12	•••
Maximum**	1	•••
**from the fully turned-in direction		

## CHASSIS SPECIFICATIONS

**SPEC**



Item	Standard	Limit
<b>Rear suspension</b>		
(YZF-R1)		
Spring preload adjusting positions		
Minimum	1	•••
Standard	5	•••
Maximum	9	•••
(YZF-R1S)		
Spring		
Free length	150.0 mm (5.91 in)	•••
Installed length	139.0 mm (5.47 in)	•••
Spring rate (K1)	95.0 N/mm (9.68 kg/mm, 542.18 lb/in)	•••
Spring preload adjusting positions		
Minimum*	0	•••
Standard*	6	•••
Maximum*	20	•••
Rebound damping adjusting positions		
Minimum*	18	•••
Standard*	14	•••
Maximum*	1	•••
Compression damping adjusting positions (fast compression damping)		
Minimum*	42	•••
Standard*	30	•••
Maximum*	1	•••
Compression damping adjusting positions (slow compression damping)		
Minimum*	17	•••
Standard*	10	•••
Maximum*	1	•••
*from the fully turned-in direction		
<b>Drive chain</b>		
Model (manufacturer)	50VA8 (DAIDO)	•••
Link quantity	118	•••
Drive chain slack	20 ~ 25 mm (0.79 ~ 0.98 in)	•••
Maximum 15-link section	•••	239.3 mm (9.42 in)

## ELECTRICAL SPECIFICATIONS/TIGHTENING TORQUES

**SPEC**



### ELECTRICAL SPECIFICATIONS

Item	Standard	Limit
<b>Ignition system</b> T.C.I. unit model (manufacturer)	F8T82073 (MITSUBISHI) (EUR, AUS) F8T82074 (MITSUBISHI) (FRA)	••• •••
<b>Battery</b> Manufacturer Ten hour rate amperage	GS-YUASA 0.9 A	••• •••

### TIGHTENING TORQUES

#### ENGINE TIGHTENING TORQUES

Item	Fastener	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m•kg	ft•lb	
Exhaust pipe and exhaust valve pipe assembly	Bolt	M6	5	12	1.2	8.7	
EXUP servo motor	Bolt	M6	2	6	0.6	4.3	
Crankcase	Bolt	M6	10	10	1.0	7.2	
Drive sprocket cover	Bolt	M6	2	12	1.2	8.7	
Drive sprocket cover	Bolt	M6	1	12	1.2	8.7	
Plate	Bolt	M6	2	12	1.2	8.7	

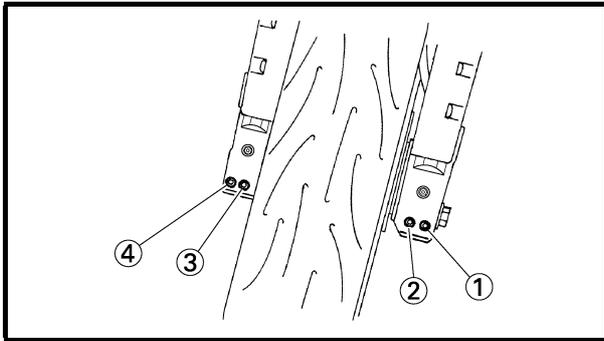
## TIGHTENING TORQUES

**SPEC**



### CHASSIS TIGHTENING TORQUES

Item	Thread size	Tightening			Remarks
		Nm	m•kg	ft•lb	
Horn bracket and under bracket	M6	7	0.7	5.1	
Connecting rod (YZF-R1S)	M6	8	0.8	5.8	
Side cover and fuel tank	M5	4	0.4	2.9	
Front fork and stay (YZF-R1S)	M5	6	0.6	4.3	⊖
Front fork and bracket (YZF-R1S)	M5	6	0.6	4.3	⊖
Rear brake master cylinder and foot rest bracket	M6	13	1.3	9.4	
Front brake disc and front wheel (YZF-R1S)	M6	23	2.3	17	⊖
Front wheel axle pinch bolt (YZF-R1S)	M8	26	2.6	19	See NOTE
Cap bolt (YZF-R1S)	—	20	2.0	14	
Cap bolt and lock nut (YZF-R1S)	M12	25	2.5	18	
Damper rod assembly (YZF-R1S)	—	48	4.8	35	⊖



#### NOTE:

1. Insert the front wheel axle from the right side and tighten it with the flange bolt from the left side to 91 Nm (9.1 m•kg, 65.8 ft•lb).
2. In the order from the pinch bolt ② → pinch bolt ① → pinch bolt ②, tighten each bolt to 26 Nm (2.6 m•kg, 19 ft•lb) without performing temporary tightening.
3. Check that the end face of the axle head and the end face of the fork side are flush-mounted. If they are out of alignment, make sure to fit them by adding the external force by hand or with a plastic hammer, etc.  
If the end face of the axle is not parallel to the end face of the fork, align them so that one point of the axle circumference is positioned on the end face of the fork.  
At this stage, it can be accepted if the end face of the axle becomes partially concave to the end face of the fork.
4. In the order from the pinch bolt ④ → pinch bolt ③ → pinch bolt ④, tighten each bolt to 26 Nm (2.6 m•kg, 19 ft•lb) without performing temporary tightening.

## LUBRICATION POINTS AND LUBRICANT TYPES

**SPEC**



EAS00031

### LUBRICATION POINTS AND LUBRICANT TYPES

#### ENGINE

Lubrication point	Lubricant
Valve lifter surfaces (intake and exhaust)	
Valve stem ends (intake and exhaust)	

EAS00032

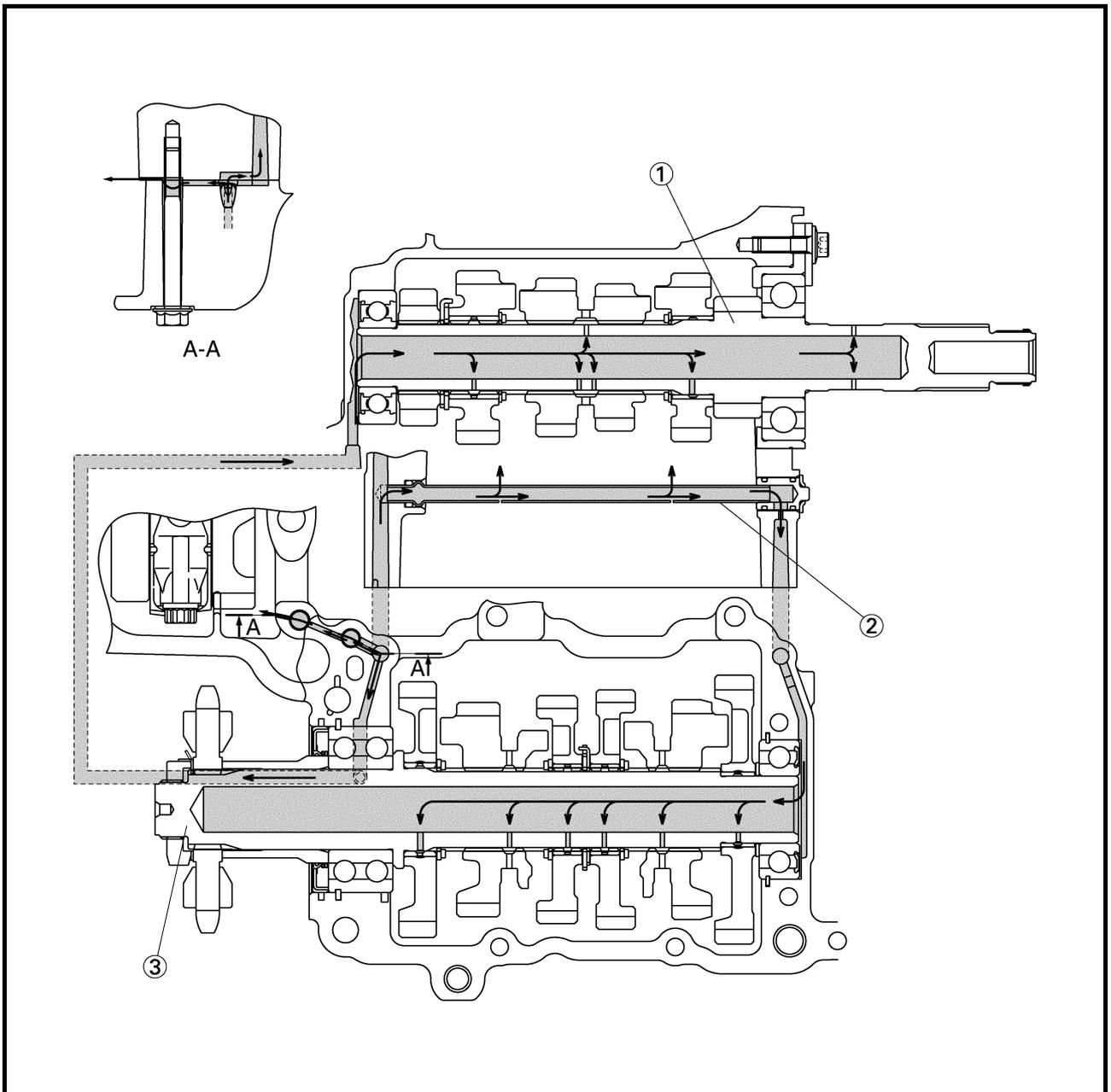
#### CHASSIS

Lubrication point	Lubricant
Pivot shaft	



LUBRICATION DIAGRAMS

- ① Main axle
- ② Oil delivery pipe
- ③ Drive axle



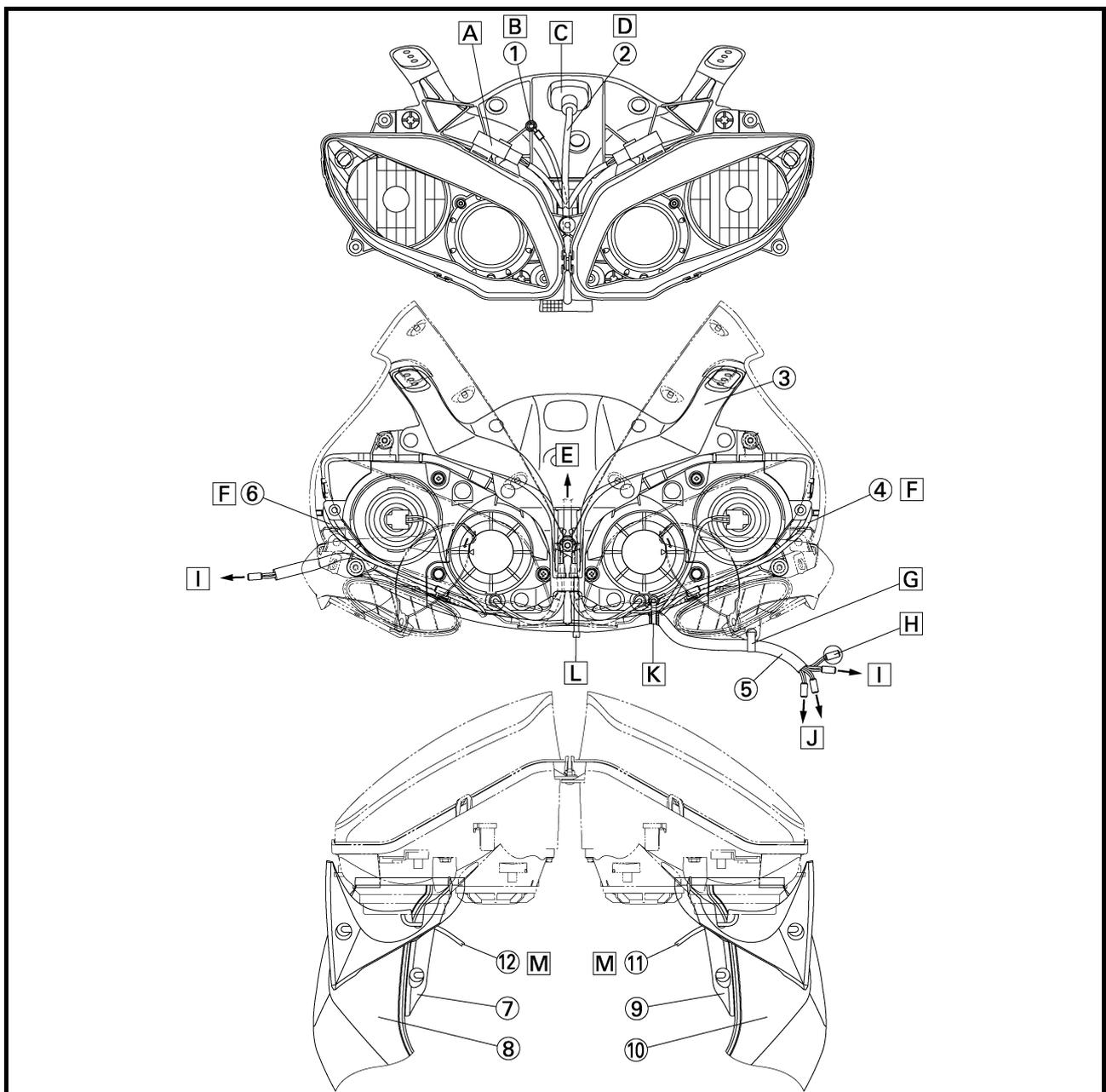


EAS00035

**CABLE ROUTING**

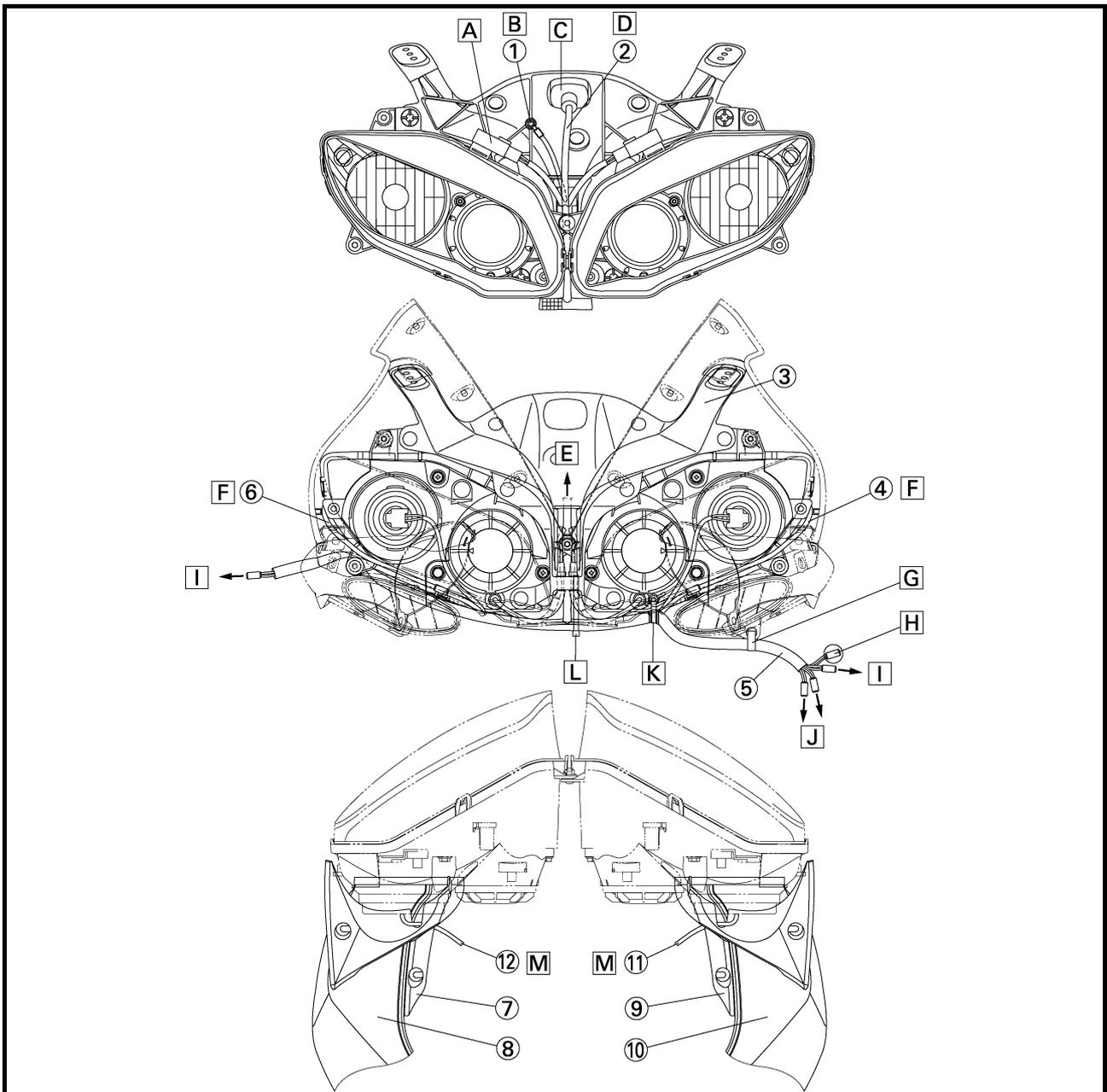
- ① Ground lead
- ② Meter lead
- ③ Stay 1
- ④ Auxiliary light lead (right)
- ⑤ Headlight lead
- ⑥ Auxiliary light lead (left)
- ⑦ Console panel 1
- ⑧ Duct 1
- ⑨ Console panel 2
- ⑩ Duct 2
- ⑪ Headlight lead (right)
- ⑫ Headlight lead (left)

- A** Insert to the rib of the head light. (Either location of the right and left relays is acceptable.)
- B** The lead should not stretch too much. Direction of the ground terminal can be either top side or flip side.
- C** Make sure to insert the coupler and boot to the stay 1 hole.
- D** The speedometer lead should not be strained.
- E** To the stay 1 hole
- F** Connect after passing over the upper side of the duct.
- G** Clamp the head light lead by wrapping and insert it to the intake air grill hole. (only at the right side.)
- H** Do not connect the wire to the coupler with the plug for options.
- I** To the turn signal light
- J** To the wire harness
- K** Cut the tip of the clamp. Clamp the headlight lead to the positioning white tape section.





- L** There should be no slack when clamping. Point the tip of the clamp (excessive part) to the front side of the vehicle. Fasten the head light lead with a clamp.
- M** Feed a lead wire through the U shape cutout of the console panel.



## CABLE ROUTING

SPEC



- ① Right handlebar switch lead
- ② Clutch cable
- ③ Main switch lead
- ④ Left handlebar switch lead
- ⑤ Horn lead
- ⑥ Horn
- ⑦ Throttle cables
- ⑧ Brake hose
- ⑨ Throttle cable (return side)
- ⑩ Throttle cable (pull side)

**A** Route the clutch cable so as to get along the front side of the main switch after passing it through the guide.

**B** Pass the main switch lead through the guide wire.

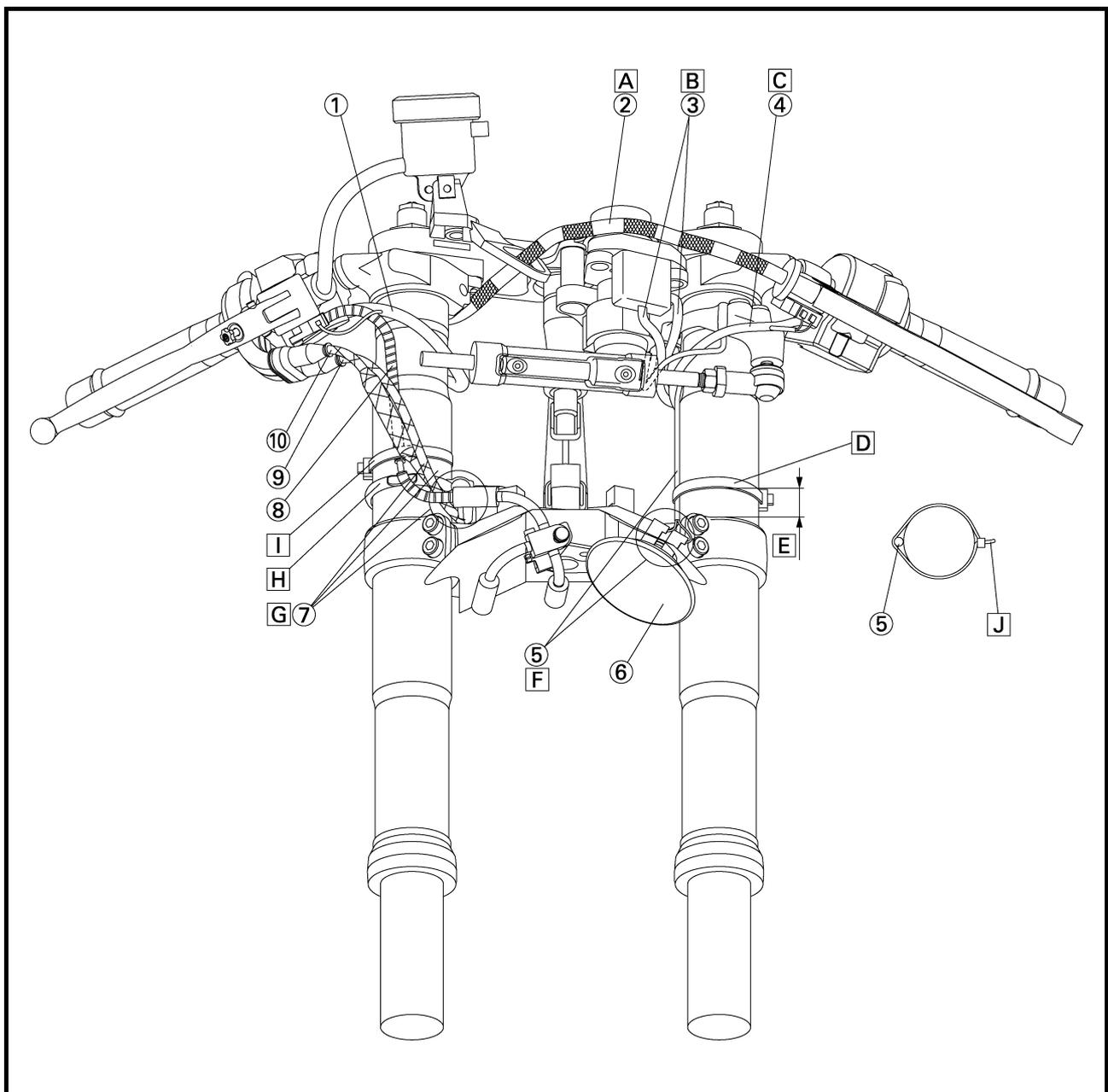
**C** Pass the left handlebar switch lead through the guide wire.

**D** Point the tip of the band (excessive part) to the left side of the vehicle and cut the surplus section.

**E** Clamp the section between 0 and 20 mm (0 and 0.79 in) from the split of the under bracket.

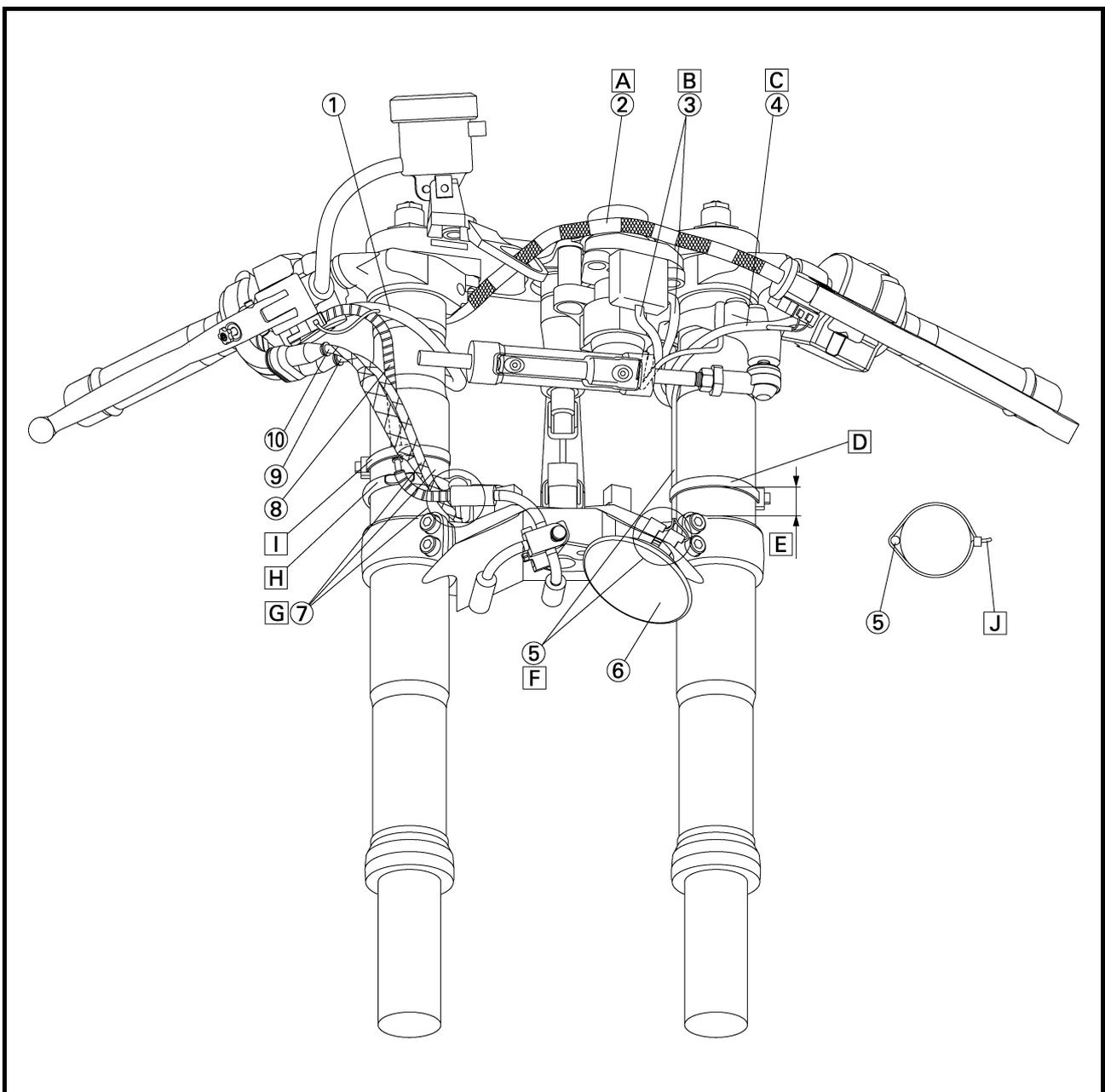
**F** Clamp the leads inside the front fork of the vehicle. Point the exit of the horn lead to the left front fork side.

**G** Route two throttle cables behind the brake hose, pass between the inside of the under bracket's upper side front fork and guide wire assembly, and then pass it through the clamp that is inserted to the cover 3 under the frame.





- H Contact the wire guide to the top face of the under bracket boss. The throttle cable should not be caught between the wire guide and under bracket. The throttle cable (pull side) should be positioned above the vehicle when the wire guide is installed.
- I Clamp should be positioned at the protector lower end of the brake hose and wrapped on the protector.
- J Cut the tip leaving 2 to 4 mm (0.08 ~ 0.16 in).



# CABLE ROUTING

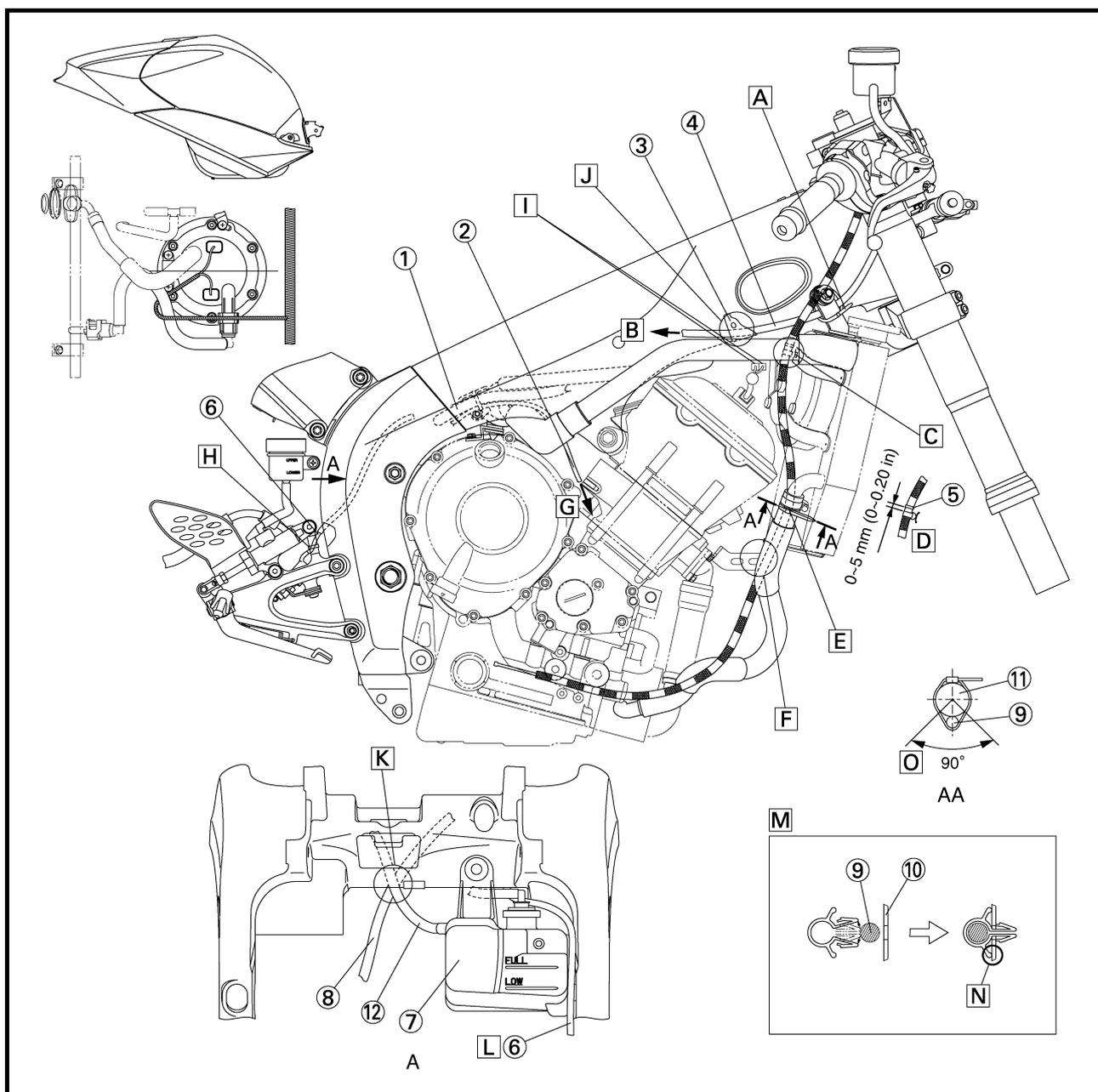
**SPEC**



- ① Wire harness
- ② Crankshaft position sensor lead
- ③ Heat protector
- ④ Right handlebar switch lead
- ⑤ Positioning guide
- ⑥ Rear brake light switch lead
- ⑦ Coolant reservoir tank
- ⑧ Speed sensor lead
- ⑨ Clutch cable
- ⑩ Radiator
- ⑪ Oil cooler outlet hose
- ⑫ Coolant reservoir tank drain hose

- A** Clamp it after passing between the frame and radiator stay. Point the tip of the clamp (excessive part) to the front side of the vehicle. Fasten the right handlebar switch lead with a clamp.
- B** To the wire harness
- C** The clutch cable positioning guide should be above the upper end of the clamp. Fasten the clutch cable with a clamp. (Refer to **M**)
- D** Position relation between the clamp and guide.

- E** Clamp the clamp upper end along the line of lower end of the hose clamp assembly. Point the tip of the clamp (excessive part) to the front side of the vehicle. Clutch cable is what the clamp fastens.
- F** The clutch cable doesn't project outside the water hose and the cylinder head in the box part in the figure.
- G** To the engine
- H** Clamp behind the bracket 3. Cut the tip of the clamp.

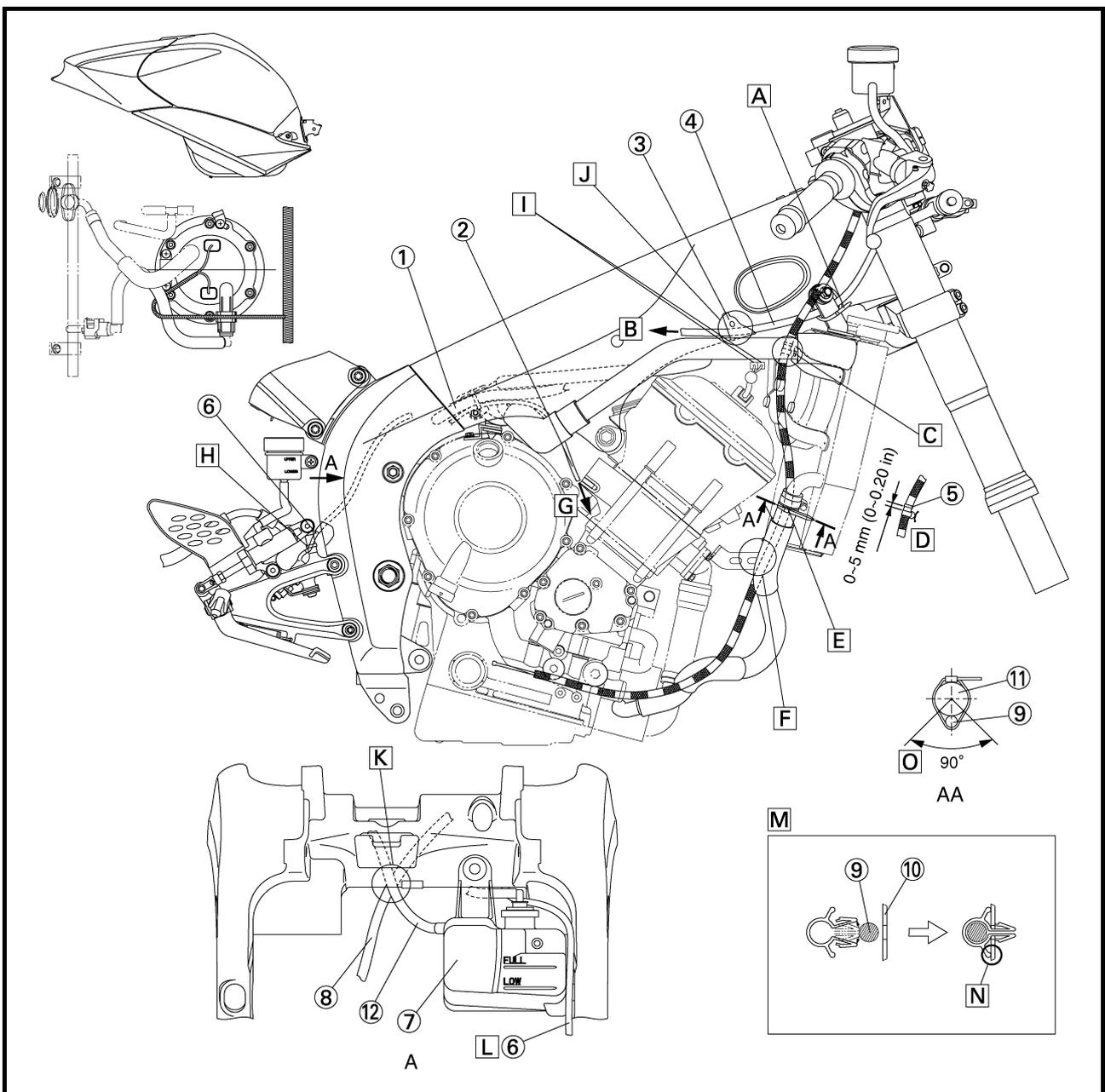


## CABLE ROUTING

SPEC



- I** The coupler for the air induction solenoid lead and camshaft sensor lead should be connected above the ignition coil sub wire harness and it should not drop on the cylinder head cover behind the ignition coil.
- J** Pass the right handlebar switch lead between the frame and heat protector.
- K** Coolant reservoir tank drain hose should cross with the speed sensor lead under the swingarm bracket. Route the coolant reservoir tank drain hose over the up side of the vehicle.
- L** Pass the rear brake light switch lead between the swingarm bracket and coolant reservoir tank.
- M** Release the tip of the clamp and install it to the clutch cable. Insert the clamp to the hole located on the right back side of the radiator. Radiator fan motor lead should not be caught while inserting the clamp.
- N** Push the clamp until it hits the radiator side stay. Radiator fan motor lead should not be caught.
- O** Clamp the clutch cable so that it is within this specified clamp.



# CABLE ROUTING

**SPEC**



- ① Heat protector
- ② Main switch lead
- ③ Left handlebar switch lead
- ④ Immobilizer lead
- ⑤ EXUP servo motor lead
- ⑥ Coolant reservoir tank drain hose
- ⑦ Fuel tank drain hose
- ⑧ Coolant outlet pipe
- ⑨ Sidestand switch lead
- ⑩ Oil level switch lead
- ⑪ A.C.magneto lead
- ⑫ Fuse box stay
- ⑬ Water hose
- ⑭ Stay 1
- ⑮ Chain case cover

**A** Clamp the leads so that they are positioned inner of the vehicle than the washer position after routing them between the frame and radiator stay. Align the clamp position with the tapping sections of leads. Point the tip of the clamp (excessive part) to the down front side of the vehicle.

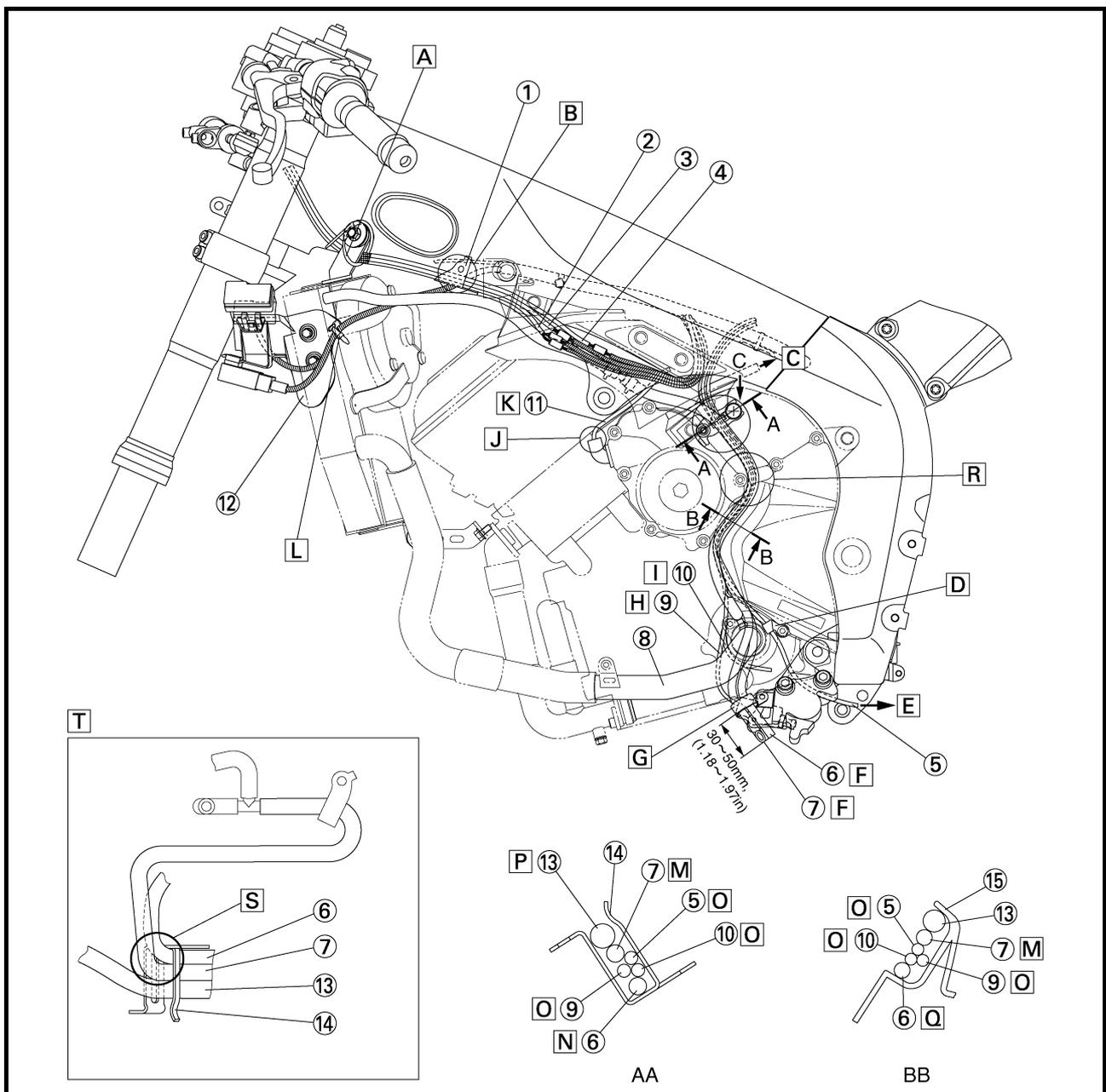
What the clamp fastens at this stage are the handlebar switch, main switch and immobilizer leads.

**B** Pass the main switch lead, left handlebar switch lead and immobilizer lead between the frame and the heat protector.

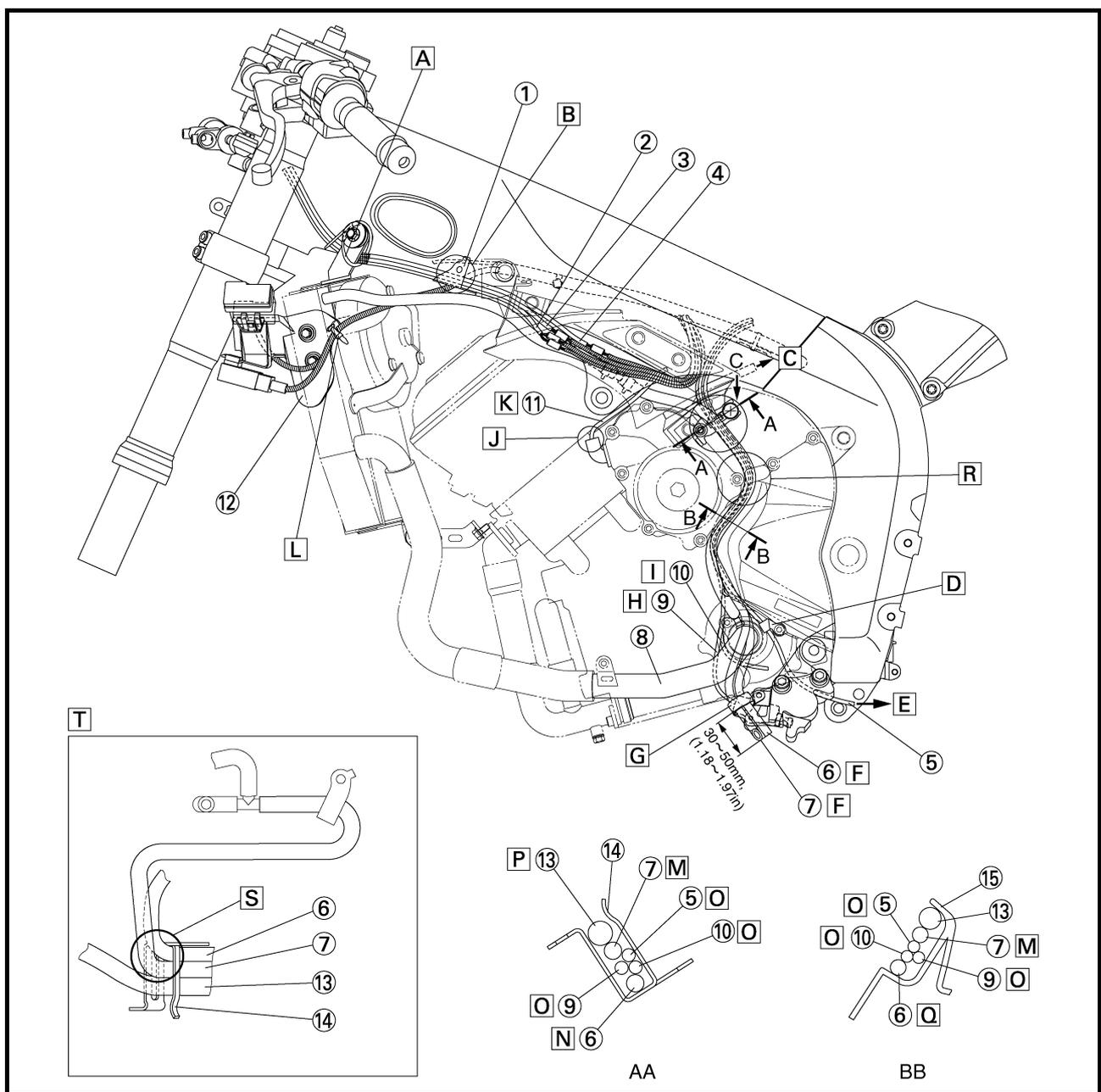
**C** To the coolant reservoir tank

**D** Fold back the clamp and secure it after passing the lead through the clamp.

**E** To the EXUP servo motor

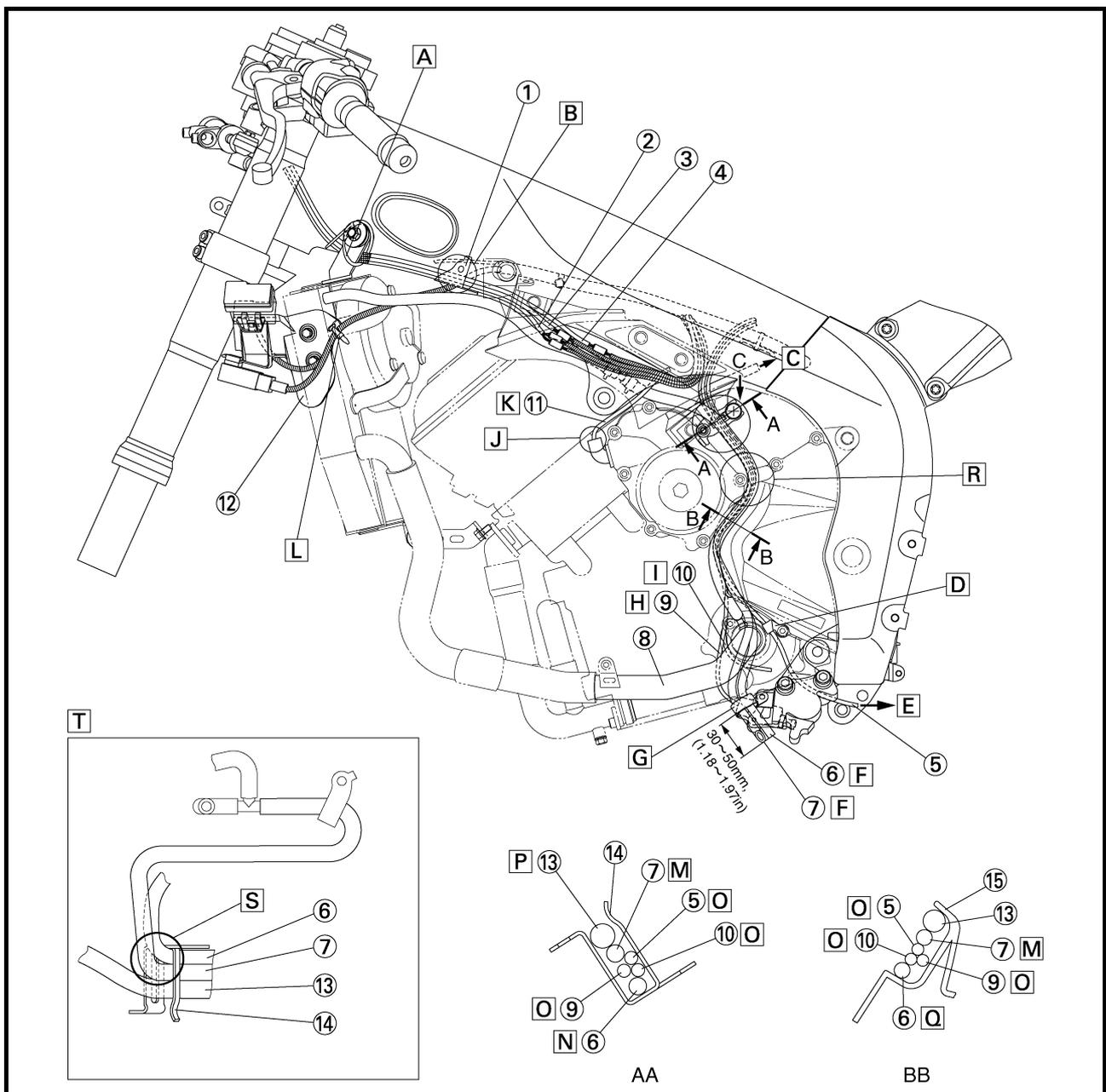


- F** Pass the coolant reservoir tank drain hose and fuel tank drain hose through the clamp from the outer side of the water pump inlet pipe after routing it behind the water pump breather hose. The lengths of two hose ends are allowed to be random. Any direction of cut edges can be accepted. (Only for the fuel tank drain hose)
- G** Clamp the fuel tank drain hose and fuel tank breather hose.
- H** Route the lead by the inside of the water hose and water pipe.
- I** Route the lead by the inside of the water hose and water pipe.
- J** There should be no exposure of bared conductors due to the displacement of the tube.
- K** Route by the outside of vehicle away from the water hose.
- L** Point the tip of the clamp (excessive part) to the down rear side of the vehicle. Fasten the wire harness with a clamp.
- M** The outside of the vehicle.
- N** Innermost section of the vehicle.
- O** Can be routed in any order.
- P** Route the water hose so that it is placed at the outermost position finally after routing other leads and hoses in the guide.
- Q** Route the coolant reservoir tank drain hose so that it is routed at the innermost position to each hose and lead.
- R** Arrange so as not for each hose to cross in the part between "BB" from the section "AA" which is in the illustration.
- S** Align the molded part of the fuel tank drain hose with the stay 1.





**T** Routing of the fuel tank drain hose.  
 EXUP servo motor, oil level switch and sidestand switch leads are omitted in this drawing.

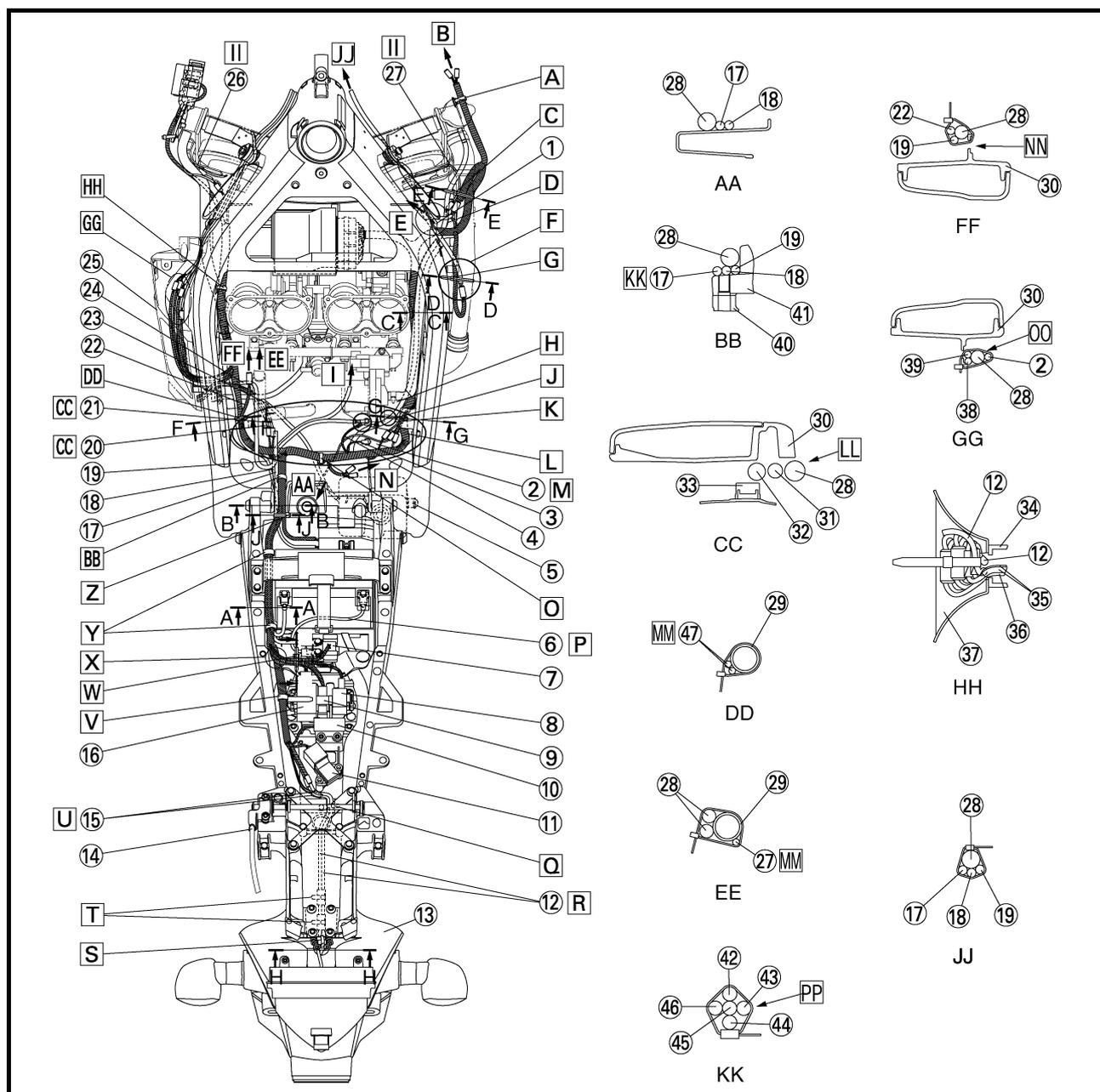


# CABLE ROUTING

SPEC



- |                                   |                                  |                         |                         |                                     |                                     |                                     |                                  |                                   |                                   |                                   |                |                               |                                      |                                      |                                      |                          |                            |                            |                            |                                |                                |                                |                    |                                       |                                       |                                       |                                |                      |
|-----------------------------------|----------------------------------|-------------------------|-------------------------|-------------------------------------|-------------------------------------|-------------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|----------------|-------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------|---------------------------------------|---------------------------------------|---------------------------------------|--------------------------------|----------------------|
| ① Heat protector                  | ⑩ Lean angle sensor              | ⑲ A.C.magneto lead      | ⑳ Oil level switch lead | ㉑ Sidestand switch lead             | ㉒ Throttle body lead                | ㉓ Coolant reservoir tank drain hose | ㉔ Fuel tank drain hose           | ㉕ Cover 7                         | ㉖ Radiator fan motor lead (left)  | ㉗ Radiator fan motor lead (right) | ㉘ Wire harness | ㉙ Pipe 3                      | ㉚ Frame                              | ㉛ Coolant reservoir tank hose        | ㉜ Thermo stat assembly breather hose | ㉝ Throttle body side cap | ㉞ Mud guard                | ㉟ Turn signal light lead   | ㊱ License plate light lead | ㊲ Rear fender rib              | ㊳ Speed sensor lead            | ㊴ Rear brake light switch lead | ㊵ Rear frame       | ㊶ Swingarm bracket                    | ㊷ Main fuse lead                      | ㊸ Starting circuit cut-off relay lead | ㊹ Turn signal light relay lead | ㊺ Starter relay lead |
| ② Crankshaft position sensor lead | ⑪ Atmospheric pressure sensor    | ⑳ Oil level switch lead | ㉑ Sidestand switch lead | ㉒ Throttle body lead                | ㉓ Coolant reservoir tank drain hose | ㉔ Fuel tank drain hose              | ㉕ Cover 7                        | ㉖ Radiator fan motor lead (left)  | ㉗ Radiator fan motor lead (right) | ㉘ Wire harness                    | ㉙ Pipe 3       | ㉚ Frame                       | ㉛ Coolant reservoir tank hose        | ㉜ Thermo stat assembly breather hose | ㉝ Throttle body side cap             | ㉞ Mud guard              | ㉟ Turn signal light lead   | ㊱ License plate light lead | ㊲ Rear fender rib          | ㊳ Speed sensor lead            | ㊴ Rear brake light switch lead | ㊵ Rear frame                   | ㊶ Swingarm bracket | ㊷ Main fuse lead                      | ㊸ Starting circuit cut-off relay lead | ㊹ Turn signal light relay lead        | ㊺ Starter relay lead           |                      |
| ③ Neutral switch lead             | ⑫ Tail /brake light lead         | ㉑ Sidestand switch lead | ㉒ Throttle body lead    | ㉓ Coolant reservoir tank drain hose | ㉔ Fuel tank drain hose              | ㉕ Cover 7                           | ㉖ Radiator fan motor lead (left) | ㉗ Radiator fan motor lead (right) | ㉘ Wire harness                    | ㉙ Pipe 3                          | ㉚ Frame        | ㉛ Coolant reservoir tank hose | ㉜ Thermo stat assembly breather hose | ㉝ Throttle body side cap             | ㉞ Mud guard                          | ㉟ Turn signal light lead | ㊱ License plate light lead | ㊲ Rear fender rib          | ㊳ Speed sensor lead        | ㊴ Rear brake light switch lead | ㊵ Rear frame                   | ㊶ Swingarm bracket             | ㊷ Main fuse lead   | ㊸ Starting circuit cut-off relay lead | ㊹ Turn signal light relay lead        | ㊺ Starter relay lead                  |                                |                      |
| ④ Ground lead                     | ⑬ Rear fender                    | ㉑ Sidestand switch lead | ㉒ Throttle body lead    | ㉓ Coolant reservoir tank drain hose | ㉔ Fuel tank drain hose              | ㉕ Cover 7                           | ㉖ Radiator fan motor lead (left) | ㉗ Radiator fan motor lead (right) | ㉘ Wire harness                    | ㉙ Pipe 3                          | ㉚ Frame        | ㉛ Coolant reservoir tank hose | ㉜ Thermo stat assembly breather hose | ㉝ Throttle body side cap             | ㉞ Mud guard                          | ㉟ Turn signal light lead | ㊱ License plate light lead | ㊲ Rear fender rib          | ㊳ Speed sensor lead        | ㊴ Rear brake light switch lead | ㊵ Rear frame                   | ㊶ Swingarm bracket             | ㊷ Main fuse lead   | ㊸ Starting circuit cut-off relay lead | ㊹ Turn signal light relay lead        | ㊺ Starter relay lead                  |                                |                      |
| ⑤ Coolant reservoir tank          | ⑭ Seat lock cable                | ㉑ Sidestand switch lead | ㉒ Throttle body lead    | ㉓ Coolant reservoir tank drain hose | ㉔ Fuel tank drain hose              | ㉕ Cover 7                           | ㉖ Radiator fan motor lead (left) | ㉗ Radiator fan motor lead (right) | ㉘ Wire harness                    | ㉙ Pipe 3                          | ㉚ Frame        | ㉛ Coolant reservoir tank hose | ㉜ Thermo stat assembly breather hose | ㉝ Throttle body side cap             | ㉞ Mud guard                          | ㉟ Turn signal light lead | ㊱ License plate light lead | ㊲ Rear fender rib          | ㊳ Speed sensor lead        | ㊴ Rear brake light switch lead | ㊵ Rear frame                   | ㊶ Swingarm bracket             | ㊷ Main fuse lead   | ㊸ Starting circuit cut-off relay lead | ㊹ Turn signal light relay lead        | ㊺ Starter relay lead                  |                                |                      |
| ⑥ Battery positive lead           | ⑮ Anti safety alarm coupler      | ㉑ Sidestand switch lead | ㉒ Throttle body lead    | ㉓ Coolant reservoir tank drain hose | ㉔ Fuel tank drain hose              | ㉕ Cover 7                           | ㉖ Radiator fan motor lead (left) | ㉗ Radiator fan motor lead (right) | ㉘ Wire harness                    | ㉙ Pipe 3                          | ㉚ Frame        | ㉛ Coolant reservoir tank hose | ㉜ Thermo stat assembly breather hose | ㉝ Throttle body side cap             | ㉞ Mud guard                          | ㉟ Turn signal light lead | ㊱ License plate light lead | ㊲ Rear fender rib          | ㊳ Speed sensor lead        | ㊴ Rear brake light switch lead | ㊵ Rear frame                   | ㊶ Swingarm bracket             | ㊷ Main fuse lead   | ㊸ Starting circuit cut-off relay lead | ㊹ Turn signal light relay lead        | ㊺ Starter relay lead                  |                                |                      |
| ⑦ Starter relay                   | ⑯ Starting circuit cut-off relay | ㉑ Sidestand switch lead | ㉒ Throttle body lead    | ㉓ Coolant reservoir tank drain hose | ㉔ Fuel tank drain hose              | ㉕ Cover 7                           | ㉖ Radiator fan motor lead (left) | ㉗ Radiator fan motor lead (right) | ㉘ Wire harness                    | ㉙ Pipe 3                          | ㉚ Frame        | ㉛ Coolant reservoir tank hose | ㉜ Thermo stat assembly breather hose | ㉝ Throttle body side cap             | ㉞ Mud guard                          | ㉟ Turn signal light lead | ㊱ License plate light lead | ㊲ Rear fender rib          | ㊳ Speed sensor lead        | ㊴ Rear brake light switch lead | ㊵ Rear frame                   | ㊶ Swingarm bracket             | ㊷ Main fuse lead   | ㊸ Starting circuit cut-off relay lead | ㊹ Turn signal light relay lead        | ㊺ Starter relay lead                  |                                |                      |
| ⑧ Turn signal relay               |                                  | ㉑ Sidestand switch lead | ㉒ Throttle body lead    | ㉓ Coolant reservoir tank drain hose | ㉔ Fuel tank drain hose              | ㉕ Cover 7                           | ㉖ Radiator fan motor lead (left) | ㉗ Radiator fan motor lead (right) | ㉘ Wire harness                    | ㉙ Pipe 3                          | ㉚ Frame        | ㉛ Coolant reservoir tank hose | ㉜ Thermo stat assembly breather hose | ㉝ Throttle body side cap             | ㉞ Mud guard                          | ㉟ Turn signal light lead | ㊱ License plate light lead | ㊲ Rear fender rib          | ㊳ Speed sensor lead        | ㊴ Rear brake light switch lead | ㊵ Rear frame                   | ㊶ Swingarm bracket             | ㊷ Main fuse lead   | ㊸ Starting circuit cut-off relay lead | ㊹ Turn signal light relay lead        | ㊺ Starter relay lead                  |                                |                      |
| ⑨ Main fuse                       |                                  | ㉑ Sidestand switch lead | ㉒ Throttle body lead    | ㉓ Coolant reservoir tank drain hose | ㉔ Fuel tank drain hose              | ㉕ Cover 7                           | ㉖ Radiator fan motor lead (left) | ㉗ Radiator fan motor lead (right) | ㉘ Wire harness                    | ㉙ Pipe 3                          | ㉚ Frame        | ㉛ Coolant reservoir tank hose | ㉜ Thermo stat assembly breather hose | ㉝ Throttle body side cap             | ㉞ Mud guard                          | ㉟ Turn signal light lead | ㊱ License plate light lead | ㊲ Rear fender rib          | ㊳ Speed sensor lead        | ㊴ Rear brake light switch lead | ㊵ Rear frame                   | ㊶ Swingarm bracket             | ㊷ Main fuse lead   | ㊸ Starting circuit cut-off relay lead | ㊹ Turn signal light relay lead        | ㊺ Starter relay lead                  |                                |                      |

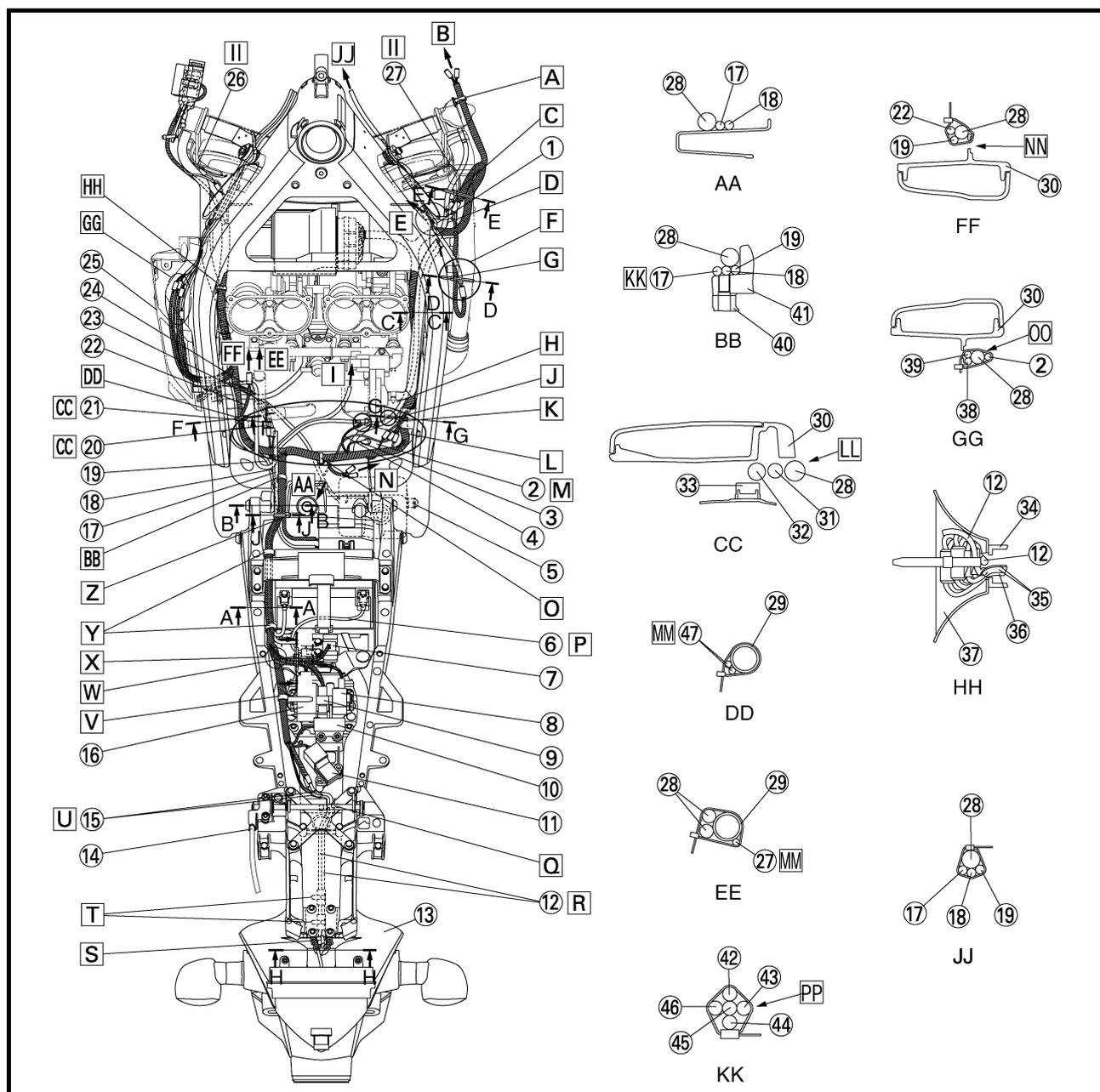


## CABLE ROUTING

SPEC

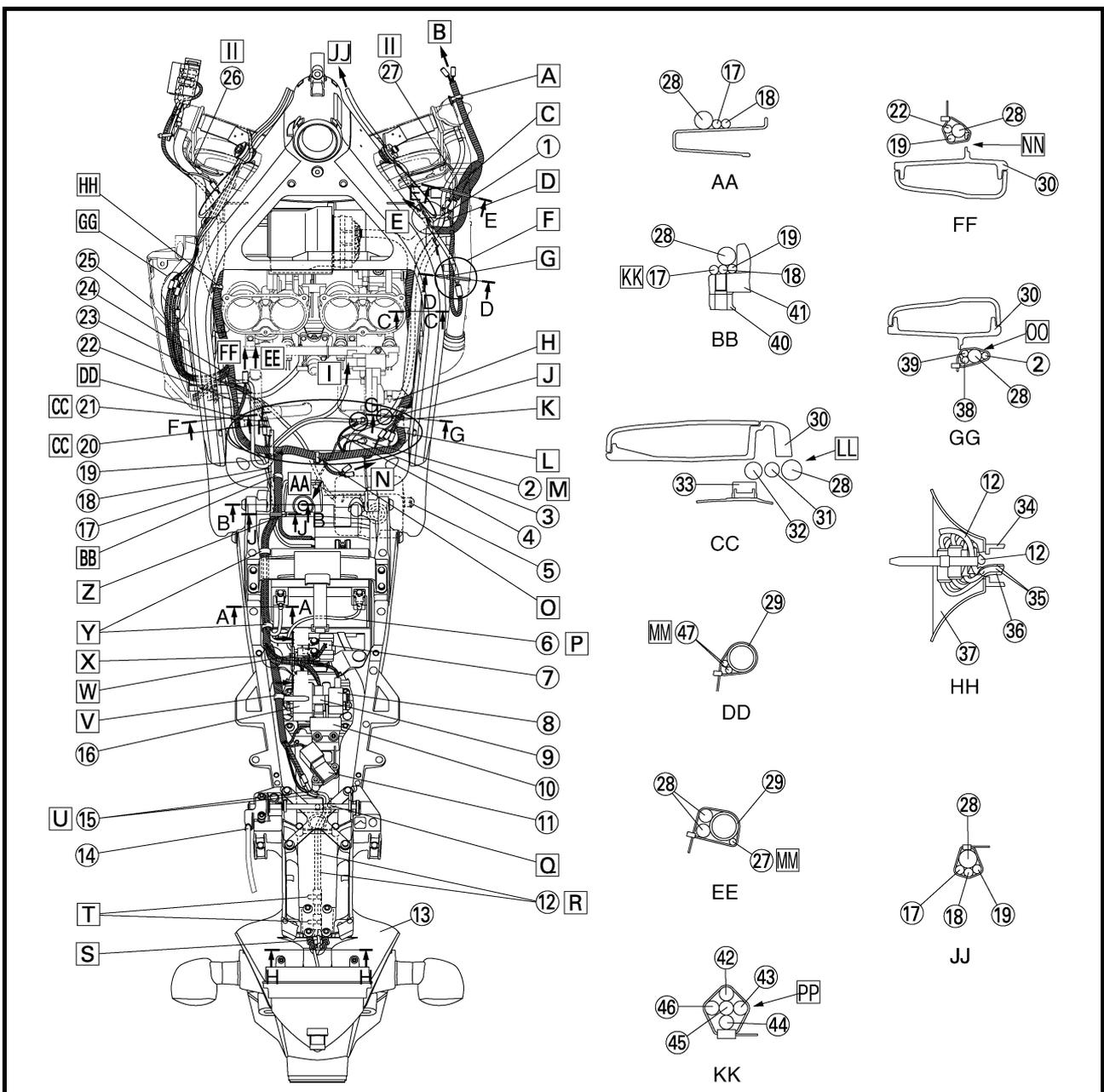


- ④⑥ Main fuse lead (To the battery positive lead)
- ④⑦ Right handlebar switch lead
- A** Pass the wire harness through the clamp inserted to the radiator stay.
- B** To the headlight lead
- C** Clamp the lead between three protrusions of the pipe (the first and second parts from the vehicle front). Point the tip of the clamp (excessive part) to the inside of the vehicle.
- D** To the vehicle right side diagram
- E** To the engine
- F** Clamp the lead between three protrusions of the pipe (the inside and outside of the vehicle).
- G** Point the tip of the clamp (excessive part) to the inside of the vehicle.
- H** All hoses and leads should be routed over the vehicle's upper side above the heat protector.
- I** To the starter motor
- J** Fasten the wire harness, clank shaft position sensor lead, rear brake light switch lead and speed sensor lead with a clamp. Then, point the tip of the clamp (cut the tip of the clamp leaving 2 to 4 mm (0.08 to 0.16 in.)) to the inside of the vehicle.





- K** Pass the water hose lower side of the thermostat, and between the ground lead and the neutral switch.
- L** Install the leads so that the engine ground lead is positioned lower and the battery negative lead to be upper. Install the protrusion of each lead to be above the vehicle.
- M** Route the crankshaft position sensor lead under the wire harness.
- N** To the fuel pump
- O** Clamp the wire harness winding in and insert it to the frame hole.
- P** Pass the lead through inside of the battery band.
- Q** Press on the tip of the clamp after passing the leads through it.
- R** Insert the tail/brake light lead to the rear frame hole.
- S** Insert the clamp from the vehicle front to the rear side and fasten each lead, coupler and onionhead to the fender rib, and then point the tip of the clamp (excessive part) to the upper side of the vehicle.
- T** Hold down the clamp tips after passing each lead.
- U** Make sure to position the coupler at the downmost position of leads. However, the coupler should be set in the rear frame so that it is not caught by the seat bottom, cover and other components.
- V** Point the tip of the clamp (excessive part) to the inside of the vehicle. Fasten the wire harness with a clamp.

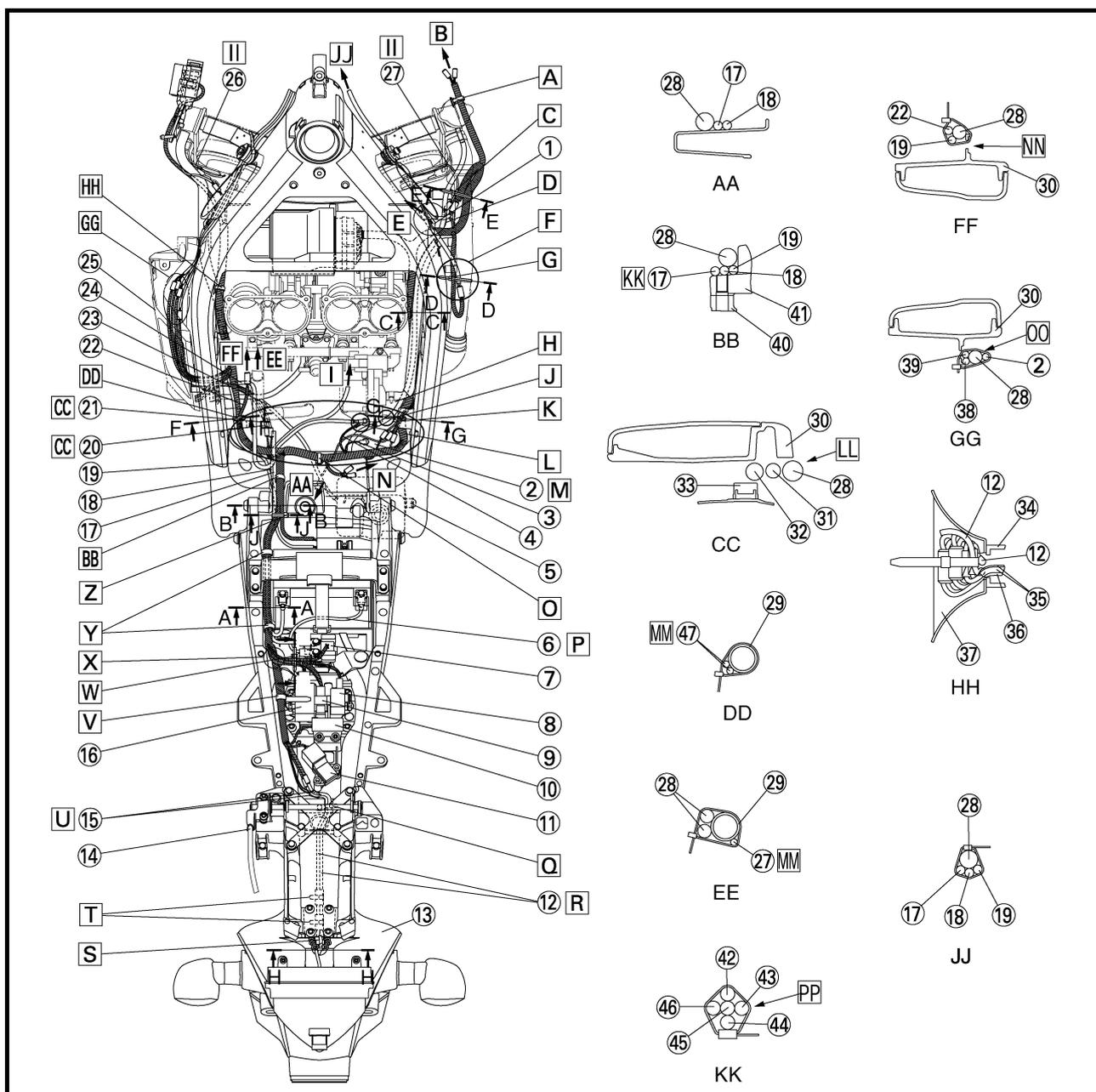


## CABLE ROUTING

SPEC



- W** Point the tip of the clamp (excessive part) to the rear side of the vehicle. Fasten the starter relay lead, turn signal relay lead, main fuse lead, main fuse lead (from the battery positive lead) and starting circuit cut-off relay lead with a clamp.
- X** Route each lead upper side the wire harness.
- Y** Fasten the wire harness, battery negative lead and starter motor lead with a clamp. Point the tip of the clamp (excessive part) to the inside of the vehicle.
- Z** Point the tip of the clamp (excessive part) to the down side of the vehicle. Fasten the wire harness, battery negative lead, A.C. magneto lead and starter motor lead with a clamp.
- AA** To the speed sensor
- BB** Insert the wire harness wrapping clamp to the hole of the frame.
- CC** After passing the lead between the wire harness and starter motor leads, fastening by the clamp should be cancelled and route the lead under the idle remote controller.
- DD** Fasten the wire harness, A.C.magneto lead, and throttle body lead with a clamp. Point the tip of the clamp (cut the tip of the clamp leaving 2 to 4 mm (0.08 to 0.16 in.)) to the inside of the vehicle.
- EE** To the air filter
- FF** To the throttle body
- GG** To install the cover 7, install so as to set each coupler in the cover. Make sure that each lead is not caught by the cover 7.

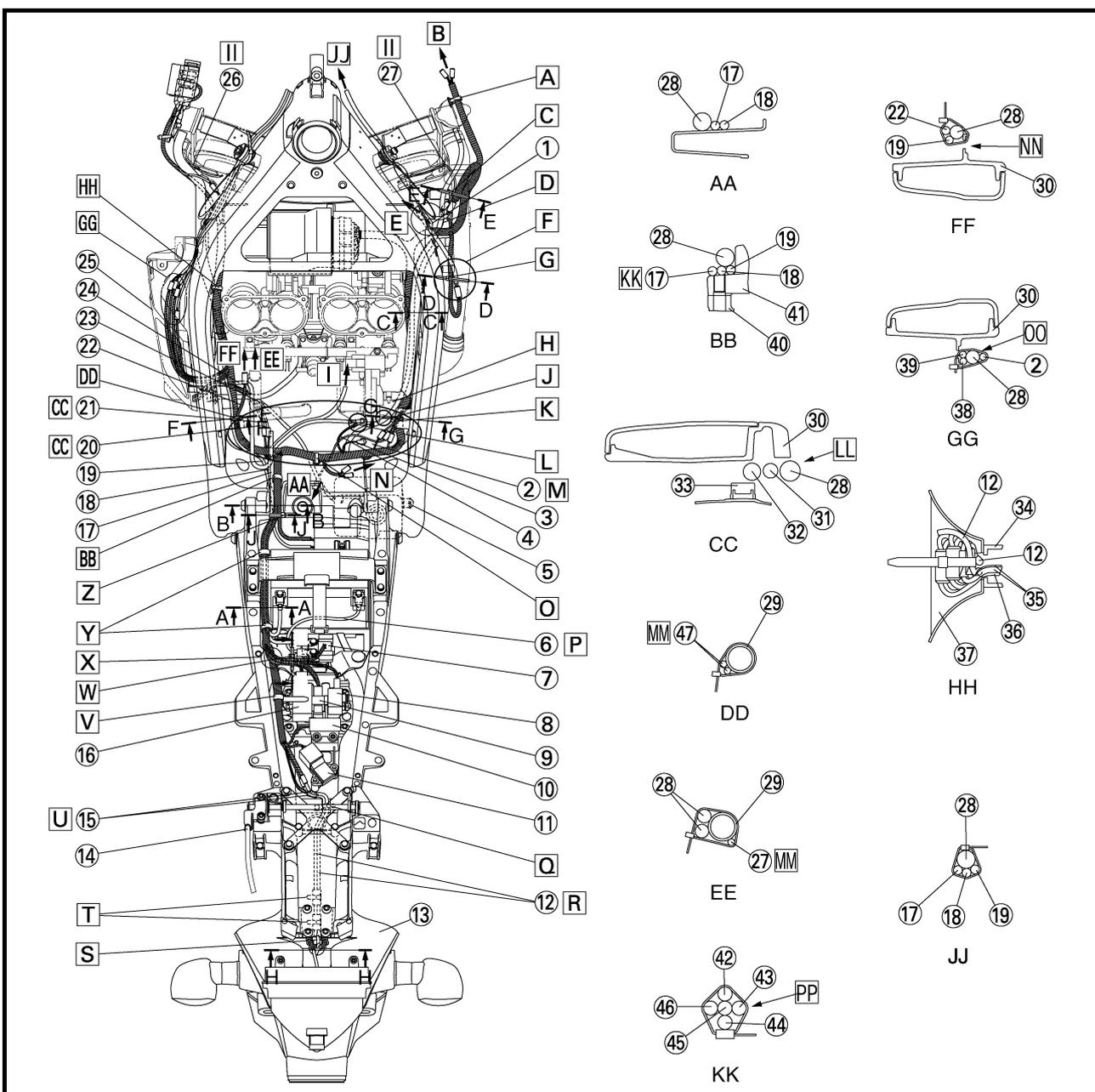


# CABLE ROUTING

**SPEC**



- HH** Insert the wire harness wrapping clamp to the hole of the frame.
- II** Make sure that the lead is fastened with the guide of the radiator stay.
- JJ** To the right handlebar switch
- KK** Battery negative lead should not run on the swingarm bracket.
- LL** The hoses should not be located higher than the throttle body side cap over the up side of the vehicle.
- MM** Do not place it beyond pipe 3 in the direction to the external part of the vehicle.
- NN** Route each lead higher than the frame plate, pass it to the inside of the vehicle from the hole. Leads should be routed in random order. Clamp can be inserted in any direction.
- OO** Route each lead lower than the frame plate. Leads should be routed in random order. Clamp can be inserted in any direction.
- PP** Route the leads in random order.



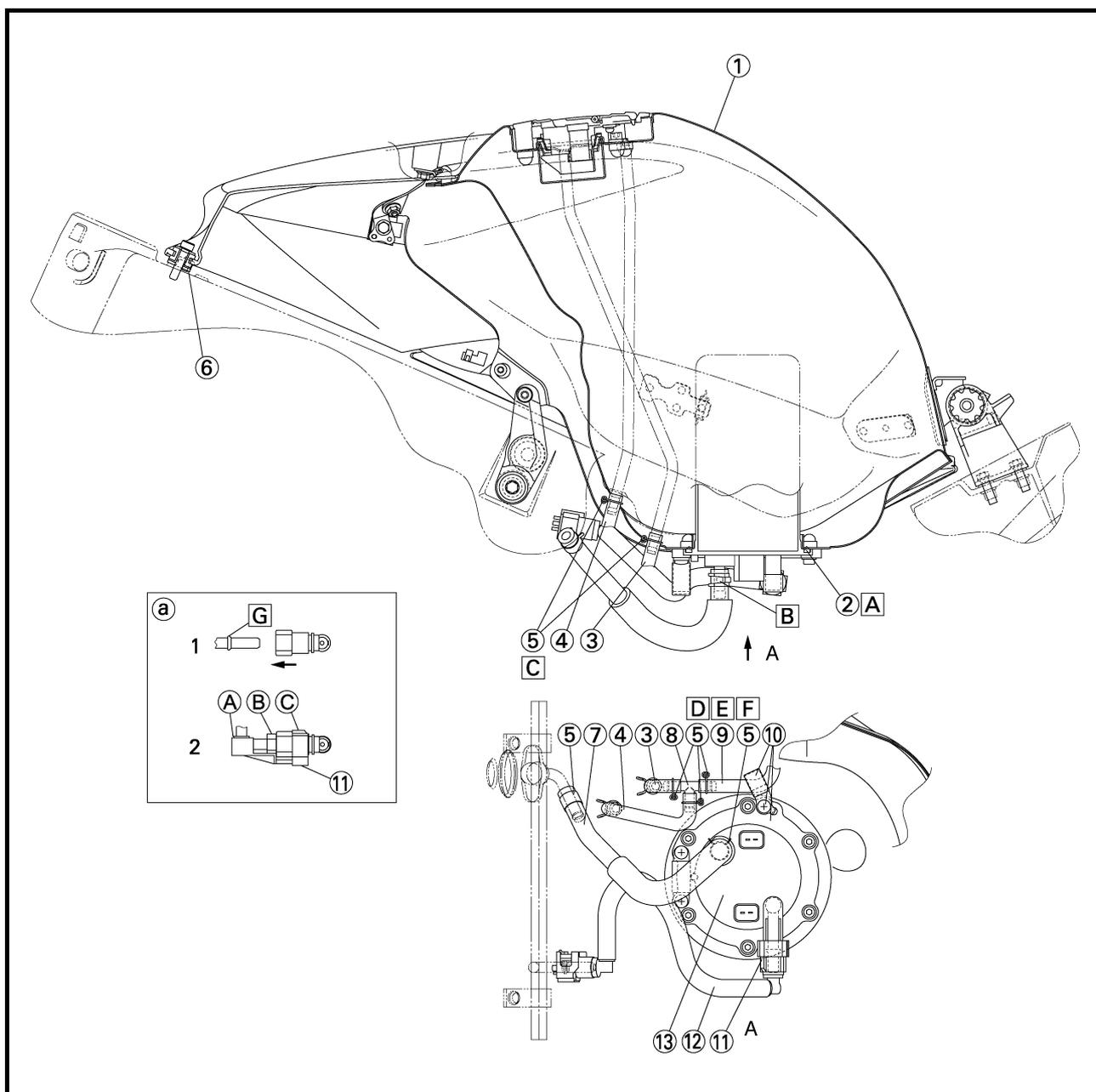
## CABLE ROUTING

SPEC



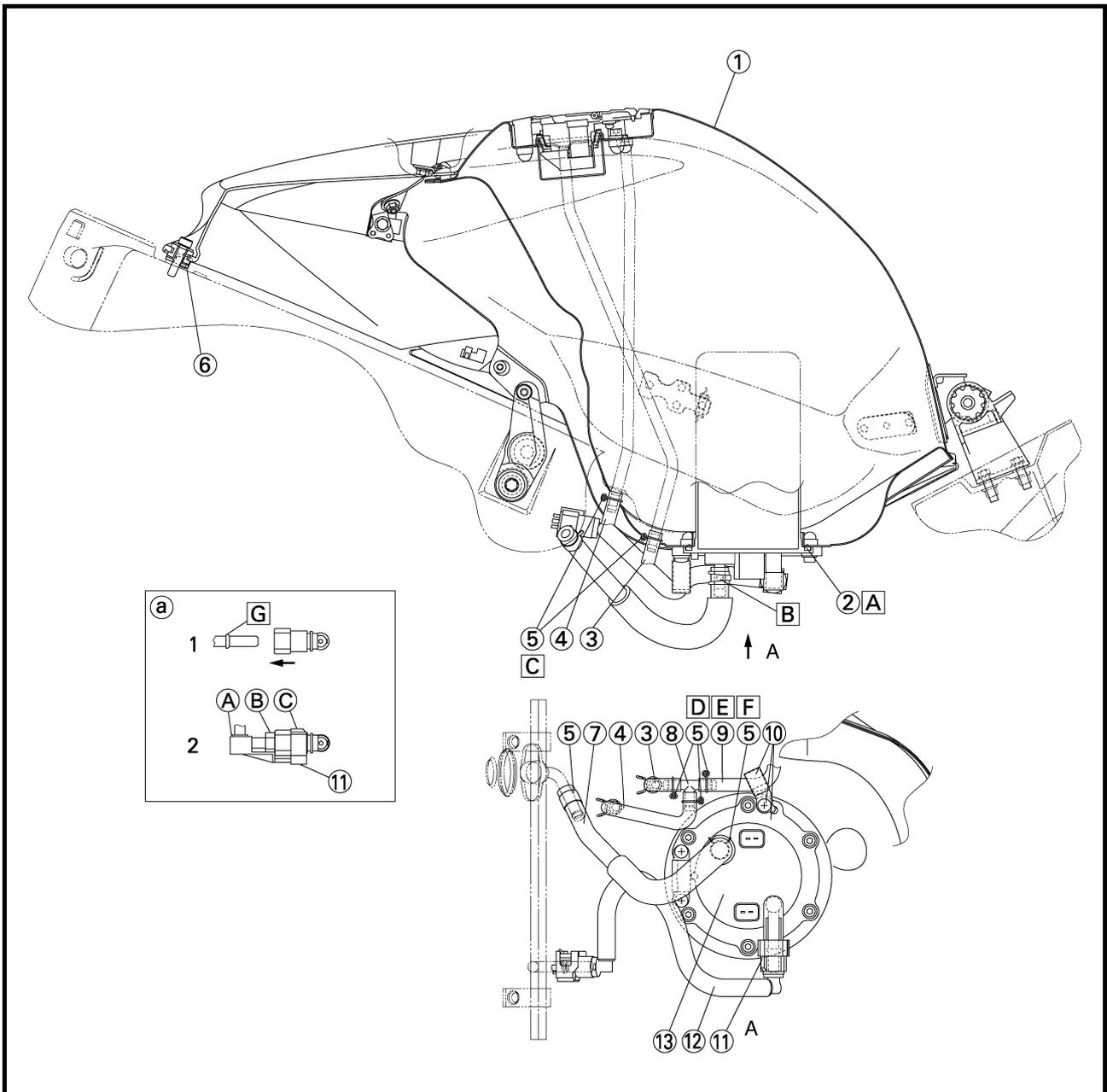
- ① Fuel tank
- ② O-ring
- ③ Fuel tank drain hose
- ④ Fuel tank breather hose
- ⑤ Clip
- ⑥ Air filter stay
- ⑦ Fuel hose 2
- ⑧ 3 way connector
- ⑨ Pipe
- ⑩ Fuel tank bracket
- ⑪ Fuel hose clamp
- ⑫ Fuel hose 1
- ⑬ Fuel pump assembly

- [A] Install the lip of O-ring facing upward.
  - [B] Install the part pointing the white paint part of the hose to the left side of the vehicle.
  - [C] Any direction of the clip grip can be accepted.
  - [D] Install the clip grip as specified in the drawing.
  - [E] Install the part pointing the white paint part of the hose to the left side of the vehicle.
  - [F] Point the clip grip to the left side of the vehicle.
  - [G] This part works as a dropout stopper.
- ① Fuel piping connector attachment directions. (fuel pump side)  
Always use hands to connect/disconnect the connector without using tool.
1. Insert the connector until the click sound is heard and check that the connector does not come off. Make sure that no foreign matter is caught in the sealing section. (It is prohibited to wear the cotton work gloves or equivalent coverings.)





- After Item 1 mentioned above is finished, check that the clamp is inserted from the down side, and (A), (B) and (C)-sections are perfectly equipped.



# INTRODUCTION/PERIODIC MAINTENANCE AND LUBRICATION INTERVALS



EAS00036

## PERIODIC CHECKS AND ADJUSTMENTS

### INTRODUCTION

This chapter includes all information necessary to perform recommended checks and adjustments. If followed, these preventive maintenance procedures will ensure more reliable vehicle operation, a longer service life and reduce the need for costly overhaul work. This information applies to vehicles already in service as well as to new vehicles that are being prepared for sale. All service technicians should be familiar with this entire chapter.

EAS00037

### PERIODIC MAINTENANCE AND LUBRICATION INTERVALS

**NOTE:**

- The annual checks must be performed every year, except if a kilometer-based maintenance is performed instead.
- From 50,000 km, repeat the maintenance intervals starting from 10,000 km.
- Items marked with an asterisk should be performed by a Yamaha dealer as they require special tools, data and technical skills.

NO.	ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING (× 1,000 km)					ANNUAL CHECK
			1	10	20	30	40	
1	* Fuel line	• Check fuel hoses for cracks or damage.		√	√	√	√	√
2	* Spark plugs	• Check condition. • Clean and regap.		√		√		
		• Replace.			√		√	
3	* Valves	• Check valve clearance. • Adjust.	Every 40,000 km					
4	Air filter element	• Replace.					√	
5	Clutch	• Check operation. • Adjust.	√	√	√	√	√	
6	* Front brake	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	√
		• Replace brake pads.	Whenever worn to the limit					
7	* Rear brake	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	√
		• Replace brake pads.	Whenever worn to the limit					
8	* Brake hoses	• Check for cracks or damage.		√	√	√	√	√
		• Replace.	Every 4 years					
9	* Wheels	• Check runout and for damage.		√	√	√	√	
10	* Tires	• Check tread depth and for damage. • Replace if necessary. • Check air pressure. • Correct if necessary.		√	√	√	√	√
11	* Wheel bearings	• Check bearing for looseness or damage.		√	√	√	√	
12	* Swingarm	• Check operation and for excessive play.		√	√	√	√	
		• Lubricate with lithium-soap-based grease.	Every 50,000 km					
13	Drive chain	• Check chain slack, alignment and condition. • Adjust and lubricate chain with a special O-ring chain lubricant thoroughly.	Every 800 km and after washing the vehicle or riding in the rain					
14	* Steering bearings	• Check bearing play and steering for roughness.	√	√	√	√	√	
		• Lubricate with lithium-soap-based grease.	Every 20,000 km					
15	* Steering damper	• Check operation and for oil leakage.		√	√	√	√	
16	* Chassis fasteners	• Make sure that all nuts, bolts and screws are properly tightened.		√	√	√	√	√
17	Sidestand	• Check operation. • Lubricate.		√	√	√	√	√
18	* Sidestand switch	• Check operation.	√	√	√	√	√	√
19	* Front fork	• Check operation and for oil leakage.		√	√	√	√	
20	* Shock absorber assembly	• Check operation and shock absorber for oil leakage.		√	√	√	√	

## PERIODIC MAINTENANCE AND LUBRICATION INTERVALS



NO.	ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING (× 1,000 km)					ANNUAL CHECK
			1	10	20	30	40	
21	* Rear suspension relay arm and connecting arm pivoting points	• Check operation.		√	√	√	√	
22	* Fuel injection	• Adjust engine idling speed and synchronization.	√	√	√	√	√	√
23	Engine oil	• Change. • Check oil level and vehicle for oil leakage.	√	√	√	√	√	√
24	Engine oil filter cartridge	• Replace.	√		√		√	
25	* Cooling system	• Check coolant level and vehicle for coolant leakage.		√	√	√	√	√
		• Change.	Every 3 years					
26	* Front and rear brake switches	• Check operation.	√	√	√	√	√	√
27	Moving parts and cables	• Lubricate.		√	√	√	√	√
28	* Throttle grip housing and cable	• Check operation and free play. • Adjust the throttle cable free play if necessary. • Lubricate the throttle grip housing and cable.		√	√	√	√	√
29	* Air induction system	• Check the air cut-off valve, reed valve, and hose for damage. • Replace any damaged parts if necessary.		√	√	√	√	√
30	* Muffler and exhaust pipe	• Check the screw clamp for looseness.	√	√	√	√	√	
31	* EXUP system	• Check operation, cable free play and pulley position.	√		√		√	
32	* Lights, signals and switches	• Check operation. • Adjust headlight beam.	√	√	√	√	√	√

**NOTE:** \_\_\_\_\_

- Air filter
  - This model's air filter is equipped with a disposable oil-coated paper element, which must not be cleaned with compressed air to avoid damaging it.
  - The air filter element needs to be replaced more frequently when riding in unusually wet dusty areas.
- Hydraulic brake service
  - Regularly check and, if necessary, correct the brake fluid level.
  - Every two years replace the internal components of the brake master cylinders and calipers, and change the brake fluid.
  - Replace the brake hoses every four years and if cracked or damaged.



**NOTE:**

To find the standard position, turn the adjusting bolt in direction (a) until it stop.

1. If the alignment mark on the adjusting bolt is positioned past the alignment mark on the front fork cap, turn the adjusting bolt in direction (b) until the alignment marks match.

Turn the adjusting bolt 3 complete turns in direction (b), and be sure the alignment mark match.

This is the standard position.

2. If the alignment mark on the adjusting bolt is positioned before the alignment mark on the front fork cap, turn the adjusting bolt in direction (b) until the alignment marks match.

Turn the adjusting bolt 2 complete turns in direction (b), and be sure the alignment mark match.

This is the standard position.



**Rebound damping**

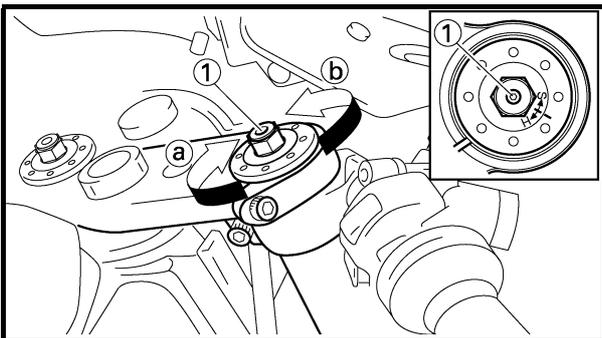
**CAUTION:**

**Never go beyond the maximum or minimum adjustment positions.**

1. Adjust:
  - rebound damping



- a. Turn the adjusting screw (1) in direction (a) or (b).



<b>Direction (a)</b>	<b>Rebound damping is increased (suspension is harder).</b>
<b>Direction (b)</b>	<b>Rebound damping is decreased (suspension is softer).</b>

<b>Adjusting positions</b>	
Minimum: 17 clicks in direction (b)*	
Standard: 12 clicks in direction (b) *	
Maximum: 1 clicks in direction (b) *	
* with the adjusting screw fully turned-in direction (a)	



# ADJUSTING THE FRONT FORK LEGS



## Compression damping

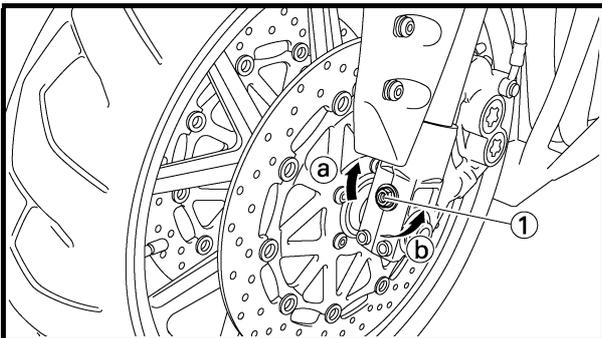
### CAUTION:

Never go beyond the maximum or minimum adjustment positions.

1. Adjust:
  - compression damping



- a. Turn the adjusting screw ① in direction ① or ②.



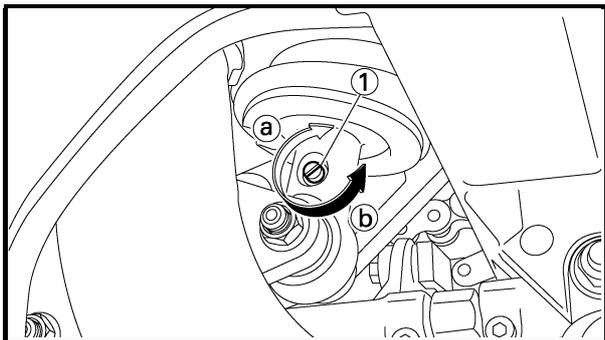
Direction ①	Compression damping is increased (suspension is harder).
Direction ②	Compression damping is decreased (suspension is softer).

**Adjusting positions**  
 Minimum: 20 clicks in direction ②\*  
 Standard: 12 clicks in direction ②\*  
 Maximum: 1 clicks in direction ②\*  
 \* with the adjusting screw fully turned-in direction ①





# ADJUSTING THE REAR SHOCK ABSORBER ASSEMBLY



1. Adjust:
  - rebound damping



- a. Turn the adjusting screw (1) in direction (a) or (b).

Direction (a)	Rebound damping is increased (suspension is harder).
Direction (b)	Rebound damping is decreased (suspension is softer).

**Adjusting positions**  
 Minimum: 18 clicks in direction (b) \*  
 Standard: 14 clicks in direction (b) \*  
 Maximum: 1 clicks in direction (b) \*  
 \* with the adjusting screw fully turned-in direction (a)



## Compression damping (fast compression damping)

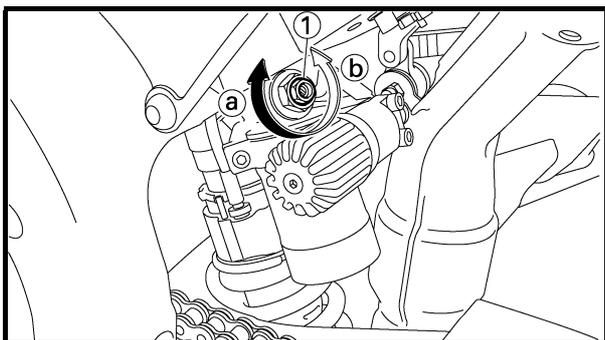
### CAUTION:

Never go beyond the maximum or minimum adjustment positions.

1. Adjust:
  - fast compression damping



- a. Turn the adjusting bolt (1) in direction (a) or (b).



Direction (a)	Compression damping is increased (suspension is harder).
Direction (b)	Compression damping is decreased (suspension is softer).

**Adjusting positions**  
 Minimum: 42 clicks in direction (b) \*  
 Standard: 30 clicks in direction (b) \*  
 Maximum: 1 clicks in direction (b) \*  
 \* with the adjusting screw fully turned-in direction (a)

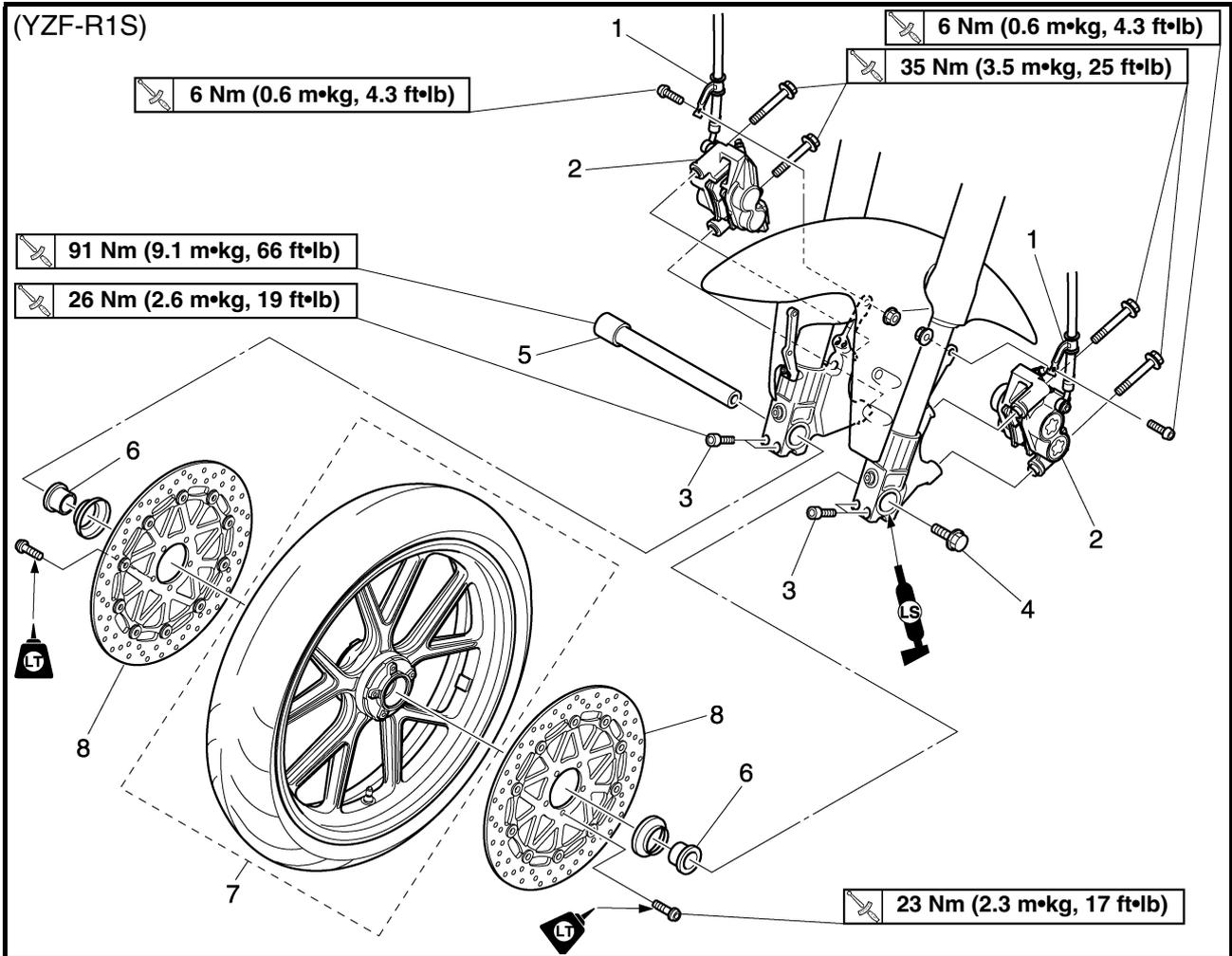




EAS00514

**CHASSIS**

**FRONT WHEEL AND BRAKE DISCS**

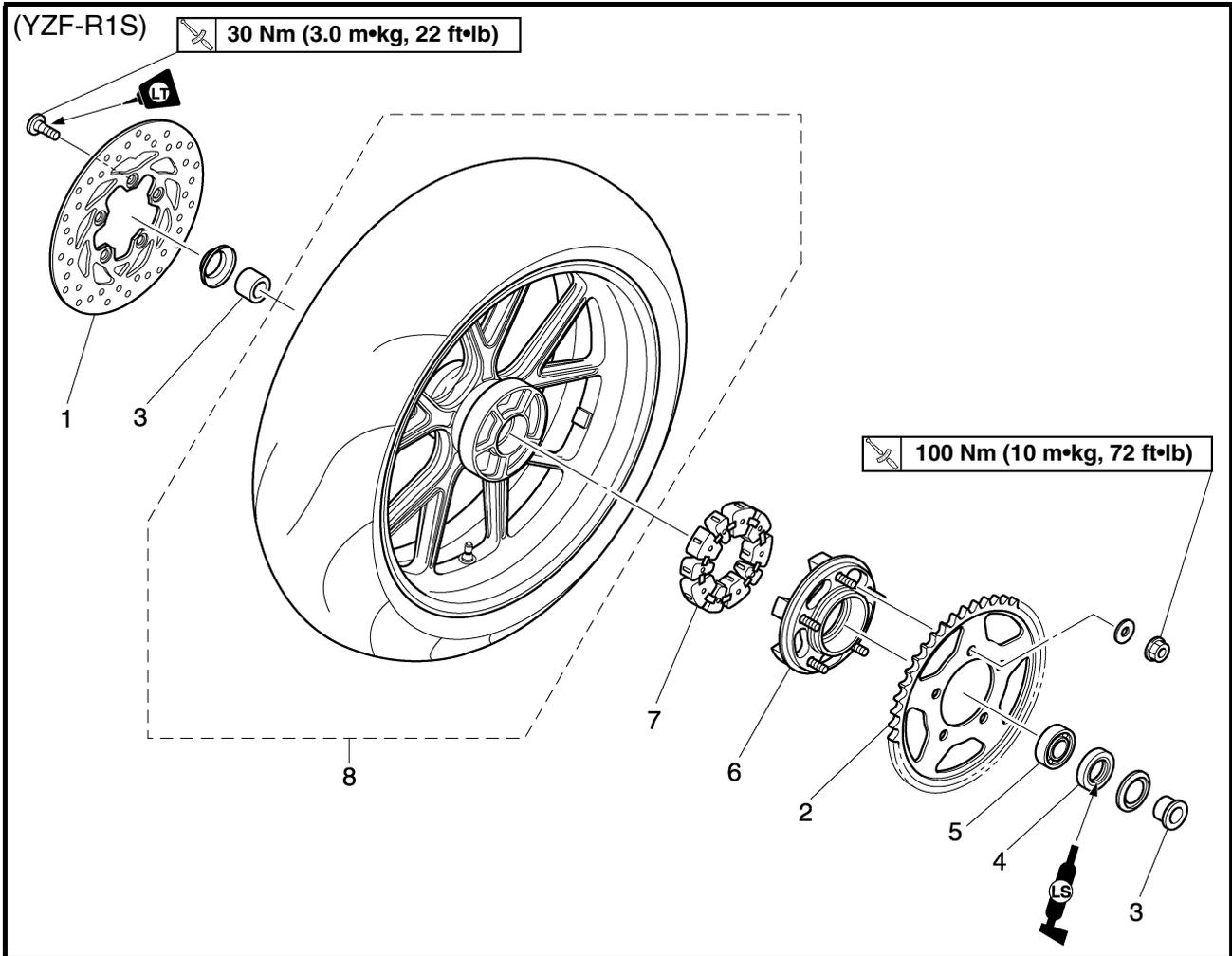


Order	Job/Part	Q'ty	Remarks
	<b>Removing the front wheel and brake discs</b>		Remove the parts in the order listed. <b>NOTE:</b> _____ Place the vehicle on a suitable stand so that the front wheel is elevated. _____
1	Brake hose holder (left and right)	2	
2	Front brake caliper (left and right)	2	
3	Front wheel axle pinch bolt	4	
4	Front wheel axle bolt	1	
5	Front wheel axle	1	
6	Collar (left and right)	2	
7	Front wheel	1	
8	Front brake disc (left and right)	2	
			For installation, reverse the removal procedure.

EAS00560

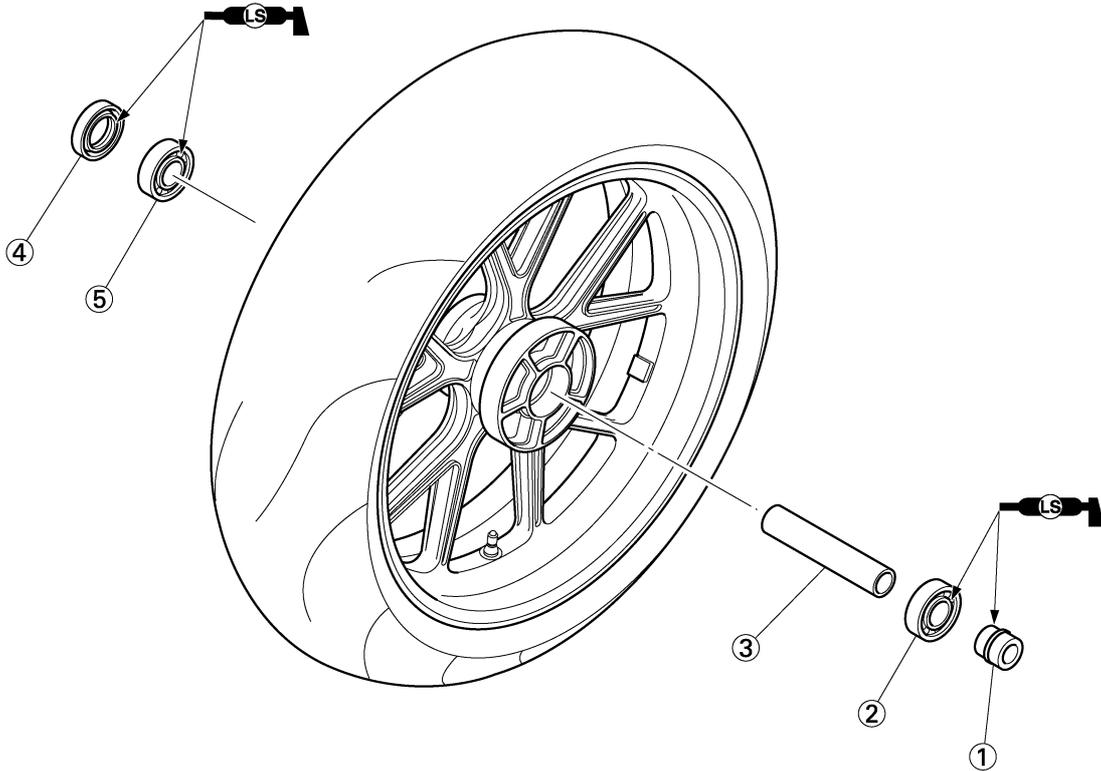
**REAR WHEEL AND BRAKE DISCS**

**REAR BRAKE DISC AND REAR WHEEL SPROCKET**



Order	Job/Part	Q'ty	Remarks
	<b>Removing the rear brake disc and rear wheel sprocket</b>		Remove the parts in the order listed.
1	Rear brake disc	1	
2	Rear wheel sprocket	1	
3	Collar	2	
4	Oil seal	1	
5	Bearing	1	
6	Rear wheel drive hub	1	
7	Rear wheel drive hub damper	5	
8	Rear wheel	1	
			For installation, reverse the disassembly procedure.

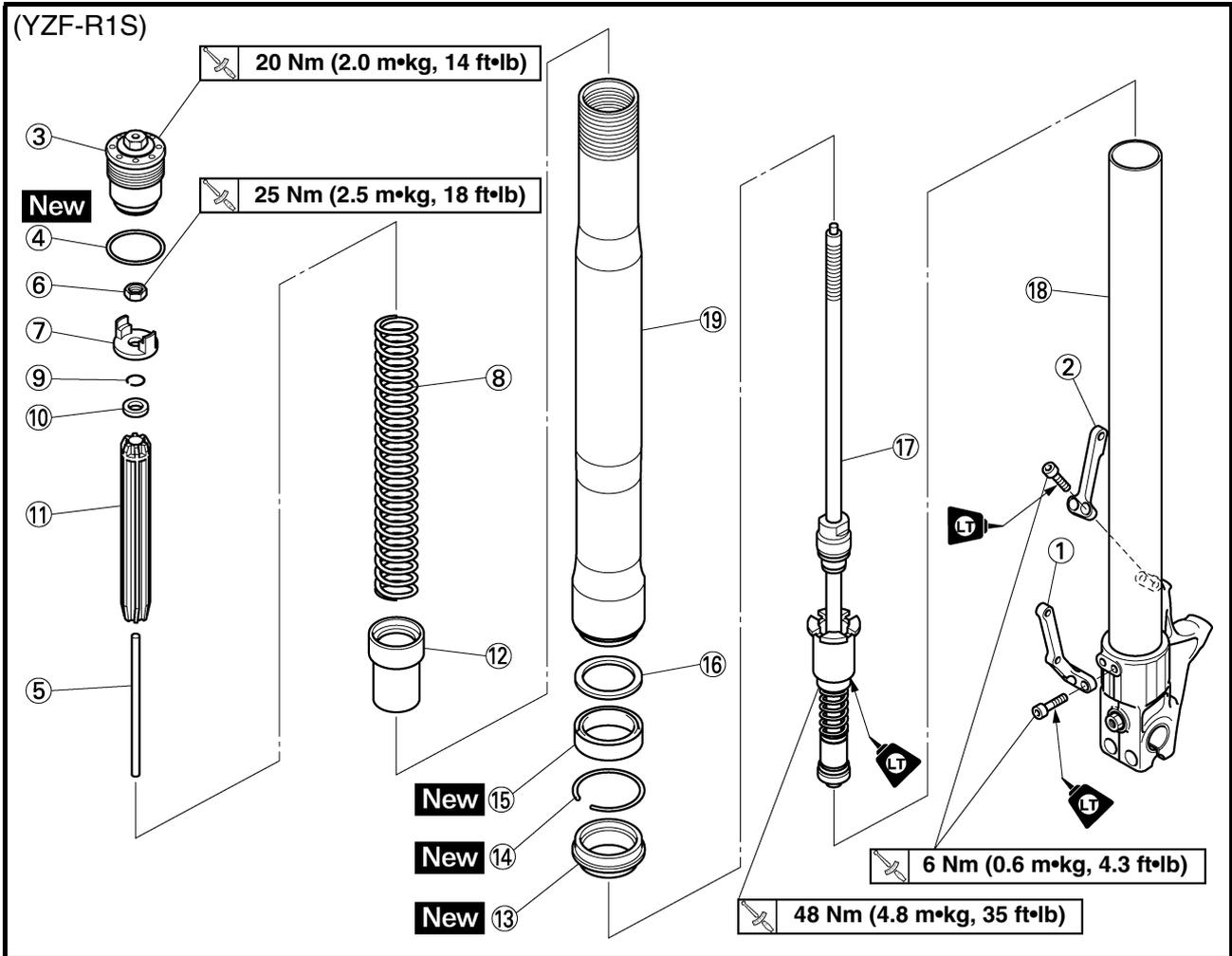
(YZF-R1S)



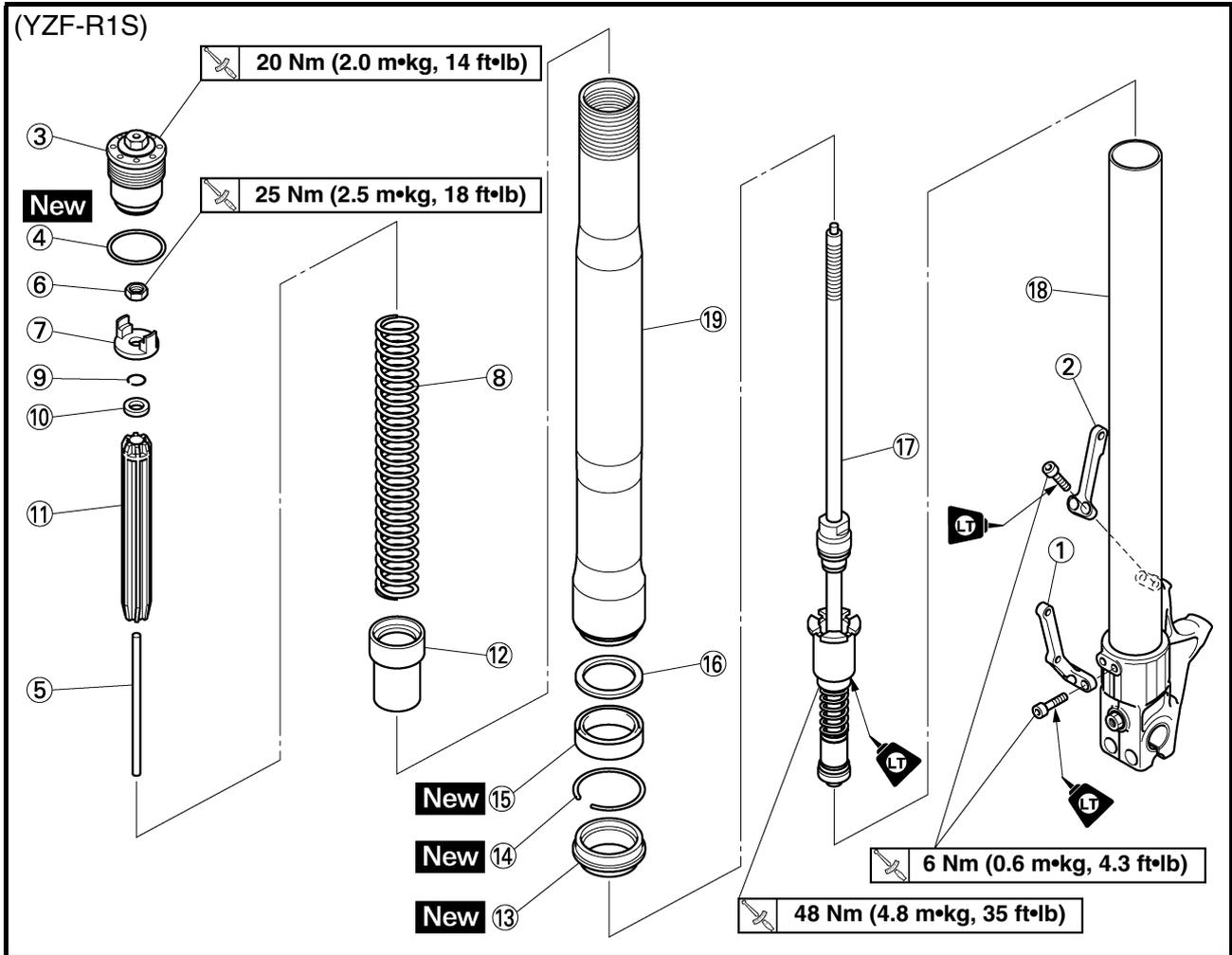
Order	Job/Part	Q'ty	Remarks
	<b>Disassembling the rear wheel</b>		Disassemble the parts in the order listed.
①	Collar	1	
②	Bearing	1	
③	Spacer	1	
④	Oil seal	1	
⑤	Bearing	1	
			For assembly, reverse the disassembly procedure.

EAS00648

**FRONT FORK**  
**FRONT FORK LEGS**

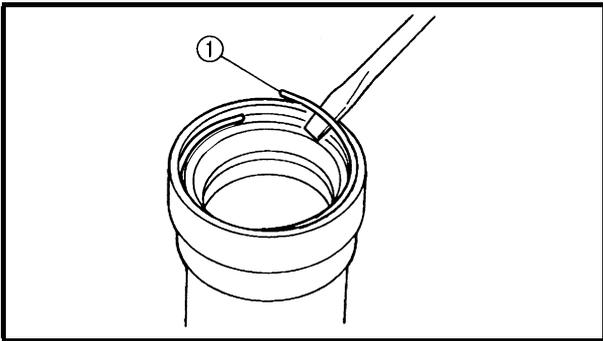


Order	Job/Part	Q'ty	Remarks
	<b>Disassembling the front fork legs</b>		Disassemble the parts in the order listed. <b>NOTE:</b> _____ The following the procedure applies to both of the front fork legs.
①	Fork stay	1	
②	Fork bracket	1	
③	Cap bolt	1	
④	O-ring	1	
⑤	Damper adjusting rod	1	
⑥	Nut	1	
⑦	Spring seat (upper)	1	
⑧	Fork spring	1	
⑨	Clip	1	
⑩	Spacer	1	



Order	Job/Part	Q'ty	Remarks
①	Spring guide	1	
②	Spring seat	1	
③	Dust seal	1	
④	Oil seal clip	1	
⑤	Oil seal	1	
⑥	Washer	1	
⑦	Damper rod assembly	1	
⑧	Inner tube	1	
⑨	Outer tube	1	
			For assembly, reverse the disassembly procedure.

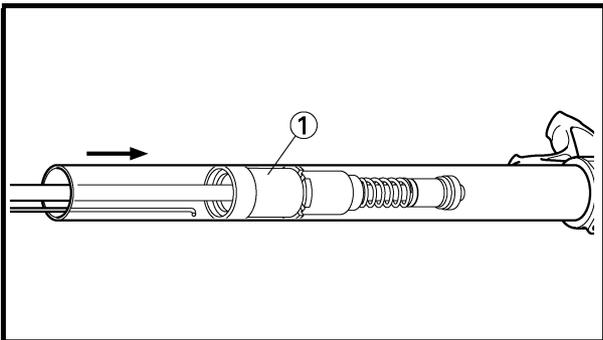




4. Remove:
- dust seal
  - oil seal clip ①
  - oil seal
  - washer  
(with a flat-head screwdriver)

**CAUTION:** \_\_\_\_\_

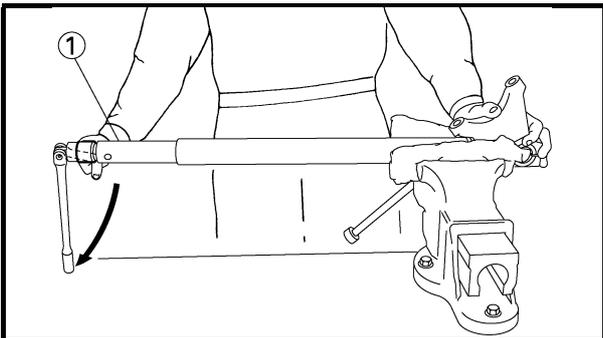
**Do not scratch the inner tube.**



5. Remove:
- spring seat ①

**NOTE:** \_\_\_\_\_

Use a wire or the like and bend the end in L-letter shape for about 10 mm (0.39 in) and hook this part to the spring seat end and pull out the spring seat.



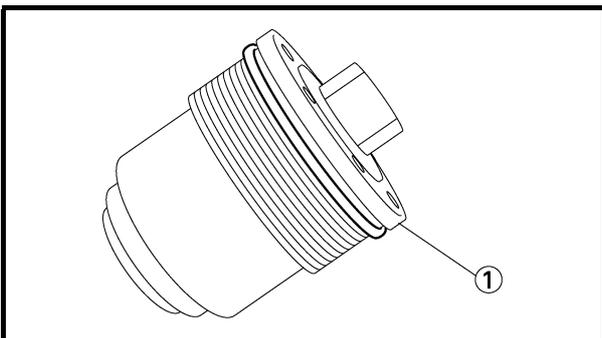
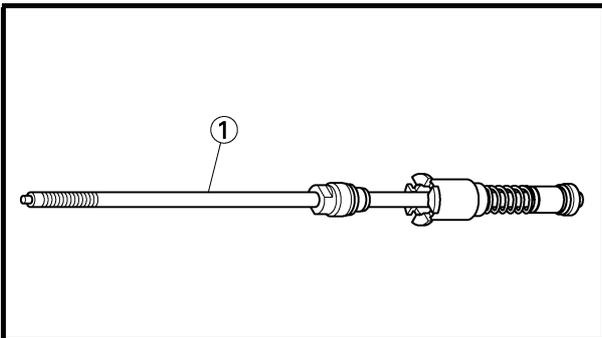
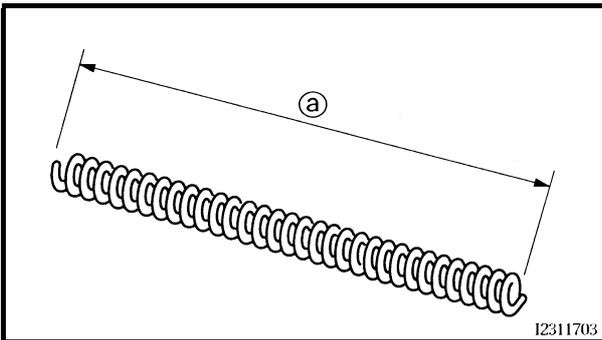
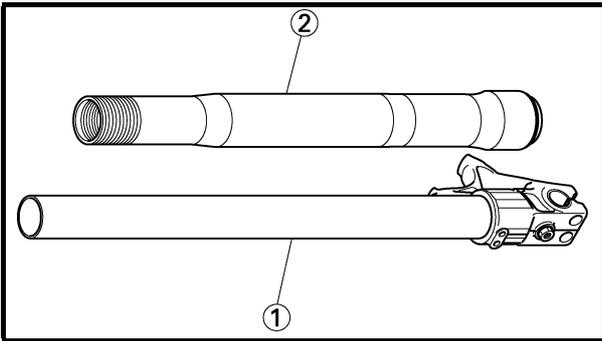
6. Remove:
- damper rod assembly

**NOTE:** \_\_\_\_\_

While holding the inner tube with the damper rod holder ①, loosen the damper rod assembly.



**Damper rod holder**  
**90890-01504**



EAS00656

### CHECKING THE FRONT FORK LEGS (YZF-R1S)

The following procedure applies to both of the front fork legs.

#### 1. Check:

- inner tube ①
- outer tube ②

Bends/damage/scratches → Replace.

### ⚠ WARNING

Do not attempt to straighten a bent inner tube as this may dangerously weaken it.

#### 2. Measure:

- spring free length (a)

Out of specification → Replace.



#### Spring free length

260 mm (10.24 in)

<Limit> : 254.8 mm (10.03 in)

#### 3. Check:

- damper rod ①

Damage/wear → Replace.

Obstruction → Blow out all of the oil passages with compressed air.

- damper rod adjusting rod

Bends/damage → Replace.

### CAUTION:

- The front fork leg has a built-in damper adjusting rod and a very sophisticated internal construction, which are particularly sensitive to foreign material.
- When disassembling and assembling the front fork leg, do not allow any foreign material to enter the front fork.

#### 4. Check:

- cap bolt ①

Damage → Replace.

- cap bolt O-ring **New**



EAS00659

## ASSEMBLING THE FRONT FORK LEGS (YZF-R1S)

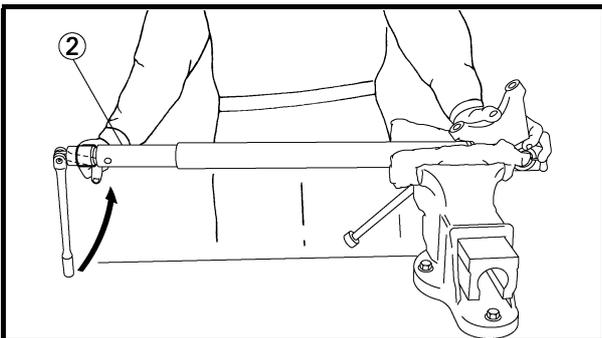
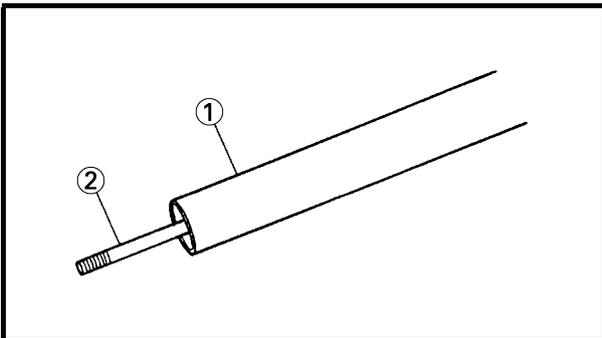
The following procedure applies to both of the front fork legs.

### ⚠ WARNING

- Make sure the oil levels in both front fork legs are equal.
- Uneven oil levels can result in poor handling and a loss of stability.

### NOTE:

- When assembling the front fork leg, be sure to replace the following parts:
  - oil seal clip
  - oil seal
  - dust seal
- Before assembling the front fork leg, make sure all of the components are clean.



#### 1. Install:

- inner tube ①
- damper rod assembly ②

#### 2. Tighten:

- damper rod assembly

48 Nm (4.8 m•kg, 35 ft•lb)  
LOCTITE®

### NOTE:

While holding the inner tube with the damper rod holder ②, tighten the damper rod assembly.



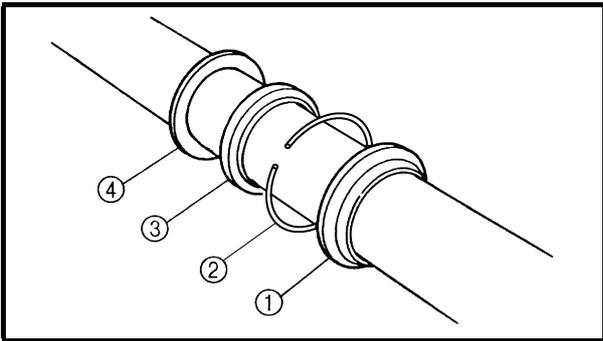
**Damper rod holder**  
90890-01504

#### 3. Lubricate:

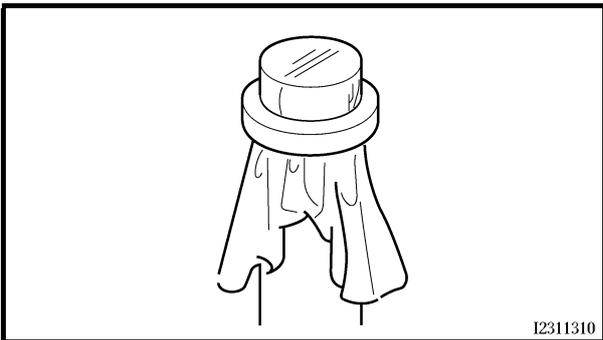
- inner tube's outer surface



**Recommended lubricant**  
Suspension oil "Ohlins R&T 43"



4. Install:
- dust seal ①
  - oil seal clip ②
  - oil seal ③
  - washer ④

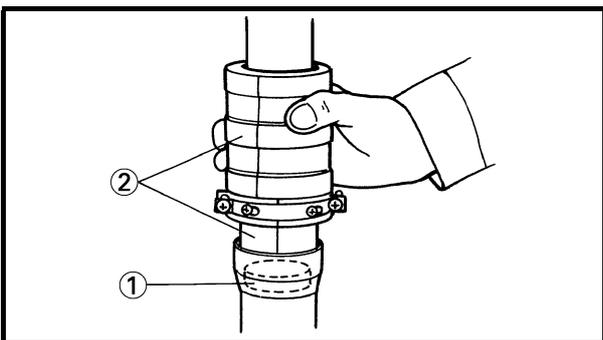


**CAUTION:** \_\_\_\_\_

Make sure the numbered side of the oil seal faces up.

**NOTE:** \_\_\_\_\_

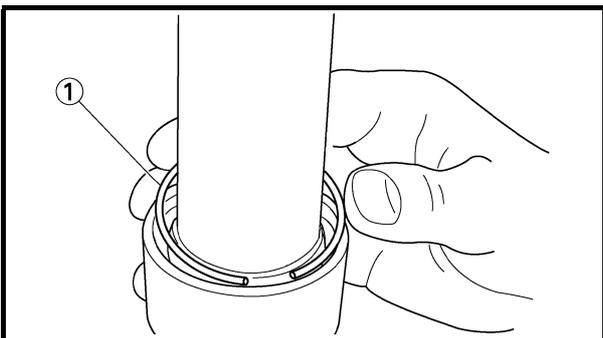
- Before installing the oil seal, lubricate its lips with lithium-soap-based grease.
- Lubricate the outer surface of the inner tube with fork oil.
- Before installing the oil seal, cover the top of the front fork leg with a plastic bag to protect the oil seal during installation.



5. Install:
- Oil seal ①  
(with the fork seal driver ②)



**Fork seal driver**  
90890-01442, YM-01442



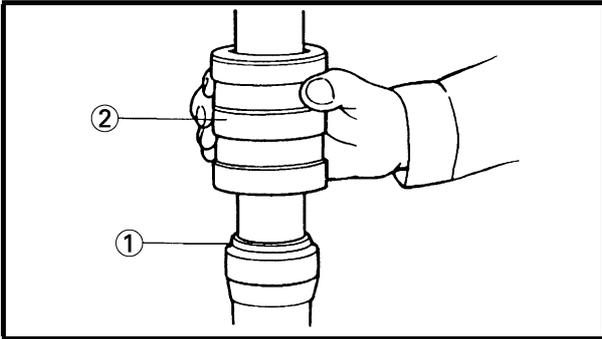
6. Install:
- oil seal clip ①

**NOTE:** \_\_\_\_\_

Adjust the oil seal clip so that it fits into the outer tube's groove.

## FRONT FORK

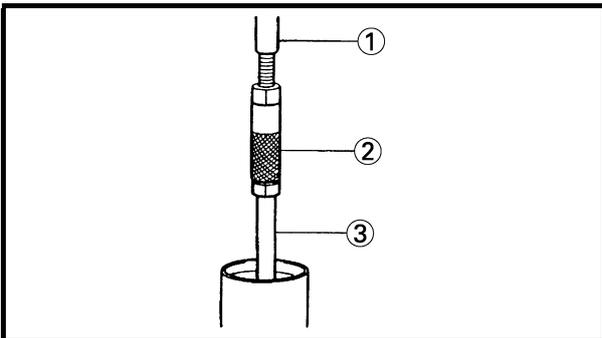
CHAS



7. Install:
- dust seal ①  
(with the fork seal driver weight ②)



**Fork seal driver**  
90890-01442, YM-01442



8. Install:
- rod puller ①
  - rod puller attachment ②  
(onto the damper rod ③)



**Rod puller**  
90890-01437, YM-A8703  
**Rod puller attachment**  
90890-01435, YM-A8703

9. Fill:
- front fork leg  
(with the specified amount of the recommended fork oil)



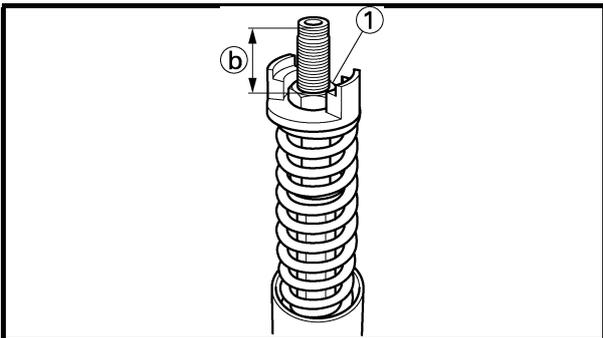
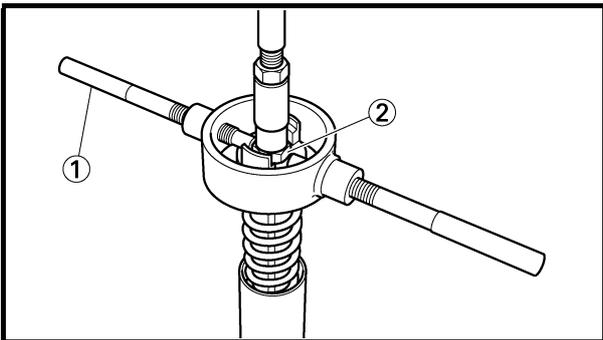
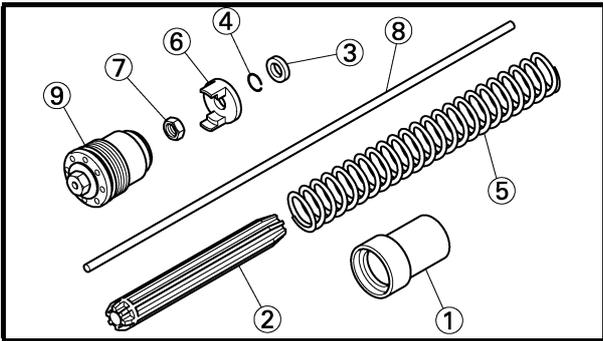
**Quantity (each front fork leg)**  
0.43 L (0.38 Imp qt, 0.45 US qt)  
**Recommended oil**  
Suspension oil "Ohlins R&T 43"



**Front fork leg oil level (from the top of the outer tube, with the outer tube fully compressed and without the fork spring)**  
145 mm (5.71 in)

### NOTE:

- While filling the front fork leg, keep it upright.
- After filling, slowly pump the front fork leg up and down to distribute the fork oil.



10. Install:

- spring seat ①
- spring guide ②
- spacer ③
- clip ④
- fork spring ⑤
- spring seat (upper) ⑥
- nut ⑦
- damper adjusting rod ⑧
- cap bolt ⑨
- fork bracket
- fork stay



- a. Install the spring seat, spring guide, spacer and circlip.
- b. Install the fork spring, spring seat (upper) and nut.
- c. Press down on the spring seat with the fork spring compressor ①.
- d. Pull up the rod puller and install the nut ②.

	<b>Fork spring compressor</b> 90890-01441, YM-01441
---	--

- e. Remove the rod puller and adapter.
- f. Install the nut ① and position it as specified ⑥.

	<b>Distance ⑥</b> More than 25 mm (0.98 in)
---	--

- g. Install the damper adjusting rod and cap bolt, and then finger tighten the cap bolt until it stop.

**NOTE:** \_\_\_\_\_  
Install the cap bolt with rebound damping screw fully loosened.

- h. Hold the cap bolt and tighten the nut to specification.

	<b>Nut</b> 25 Nm (2.5 m•kg, 18 ft•lb)
---	--

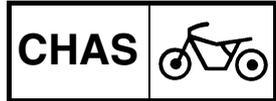
- i. Remove the fork spring compressor.

**⚠ WARNING** \_\_\_\_\_

- The fork spring is compressed.
- Always use a new cap bolt O-ring.

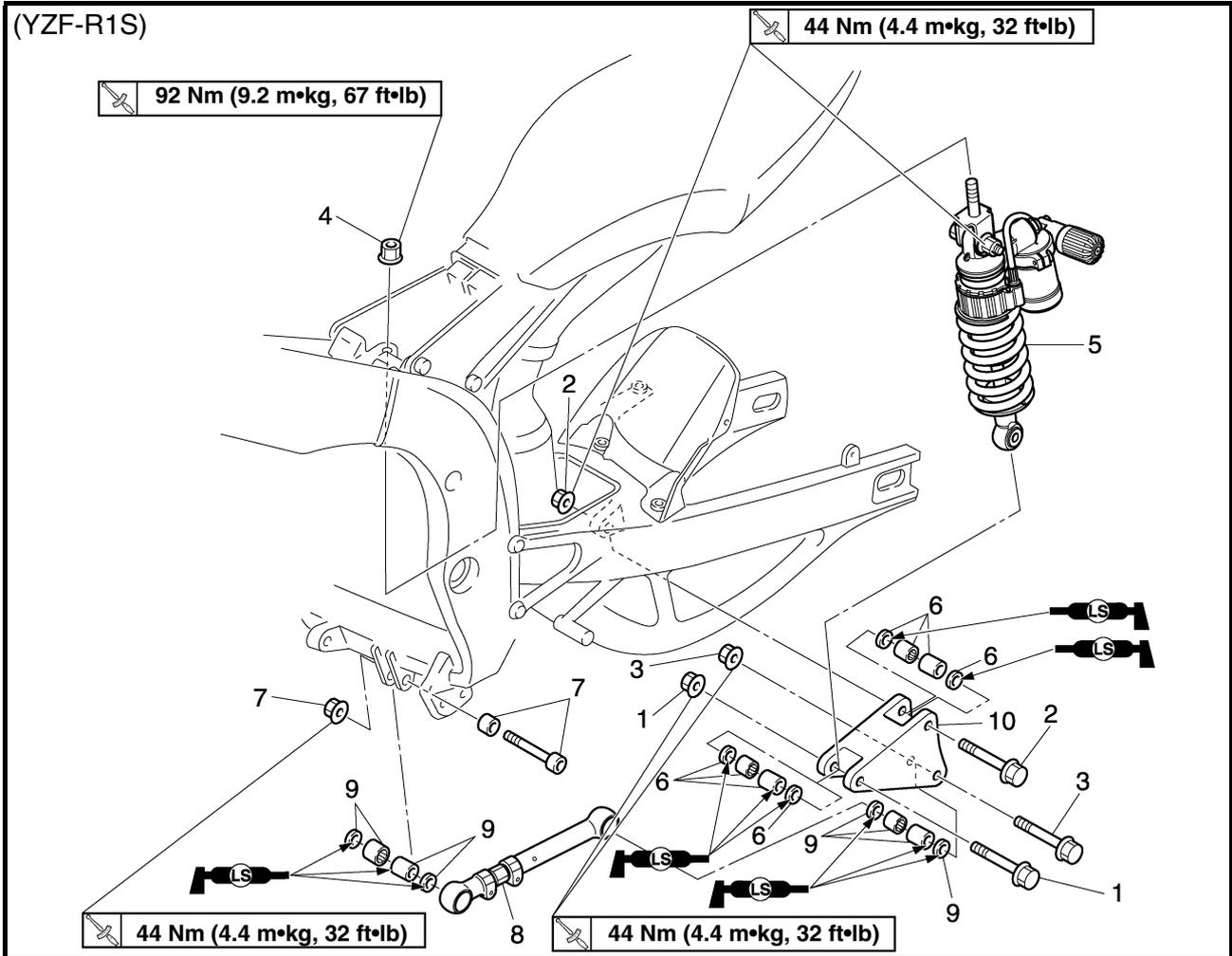


# REAR SHOCK ABSORBER ASSEMBLY



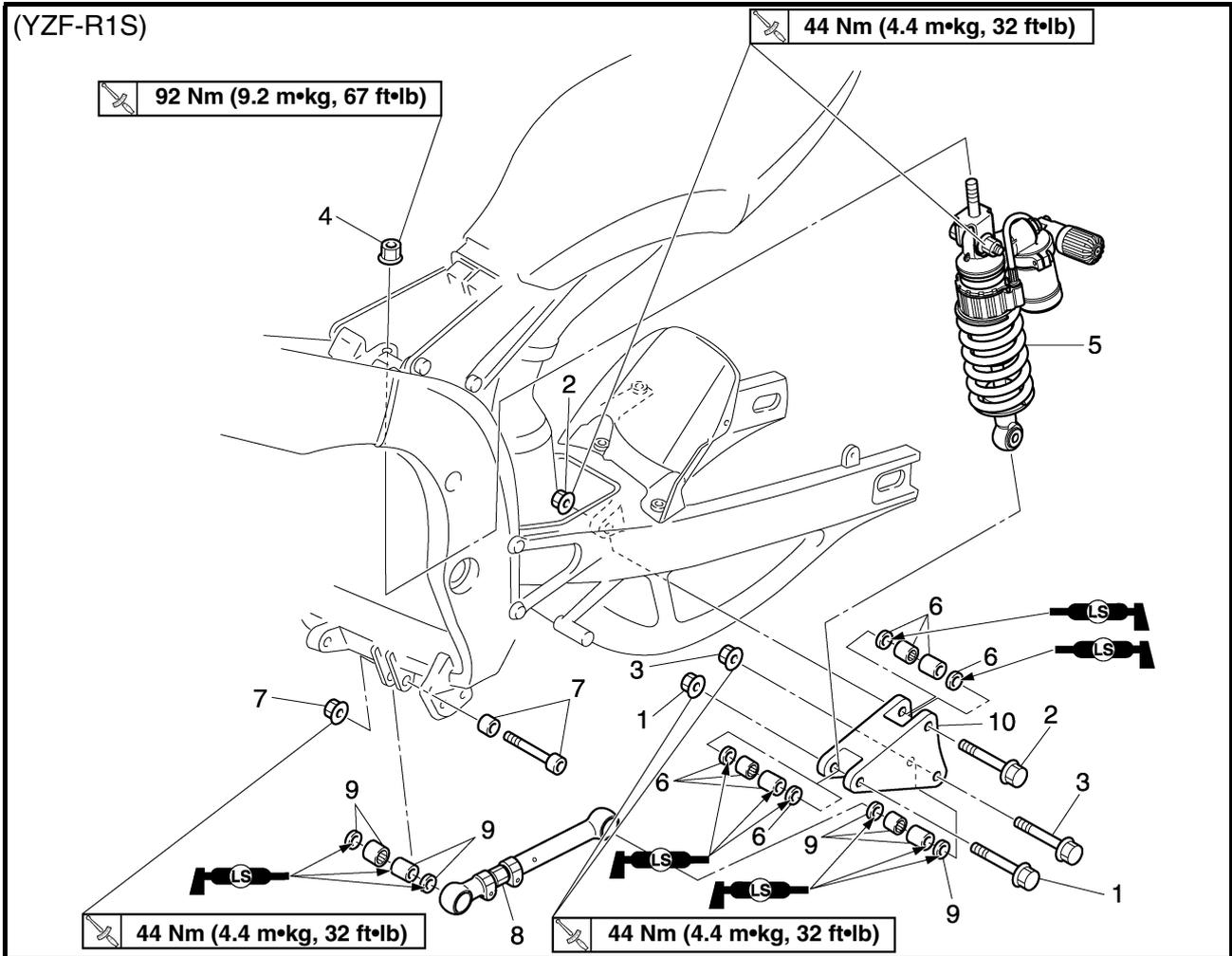
EAS00685

## REAR SHOCK ABSORBER ASSEMBLY



Order	Job/Part	Q'ty	Remarks
	<b>Removing the rear shock absorber assembly</b>		Remove the parts in the order listed.
	Rider seat and passenger seat		Refer to "SEATS" in chapter 3.
	Fuel tank		Refer to "FUEL TANK" in chapter 3.
	Bottom cowling and rear cowling (upper)		Refer to "COWLINGS" in chapter 3.
	Protector, muffler, catalyst pipe assembly and EXUP servo motor		Refer to "EXHAUST PIPE" in chapter 5.
1	Self-locking nut/bolt	1/1	
2	Self-locking nut/bolt	1/1	
3	Self-locking nut/bolt	1/1	
4	Self-locking nut	1	
5	Rear shock absorber assembly	1	
6	Oil seal/bearing/collar	4/2/2	
7	Collar/self-locking nut/bolt	1/1/1	
8	Connecting rod	1	
9	Oil seal/bearing/collar	4/2/2	

# REAR SHOCK ABSORBER ASSEMBLY



Order	Job/Part	Q'ty	Remarks
10	Relay arm	1	For installation, reverse the removal procedure.

EAS00690

## REMOVING THE REAR SHOCK ABSORBER ASSEMBLY

(YZF-R1S)

1. Stand the vehicle on a level surface.

### **⚠ WARNING**

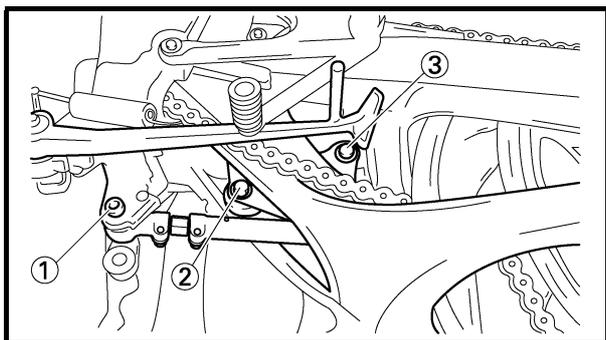
**Securely support the vehicle so that there is no danger of it falling over.**

### **NOTE:**

Place the vehicle on a suitable stand so that the rear wheel is elevated.

2. Remove:

- rider seat and passenger seat  
Refer to “SEATS” in chapter 3.
- fuel tank  
Refer to “FUEL TANK” in chapter 3.
- bottom cowling
- rear cowling (upper)  
Refer to “COWLINGS” in chapter 3.
- protector
- muffler
- catalyst pipe assembly
- EXUP servo motor  
Refer to “EXHAUST PIPE” in chapter 5.

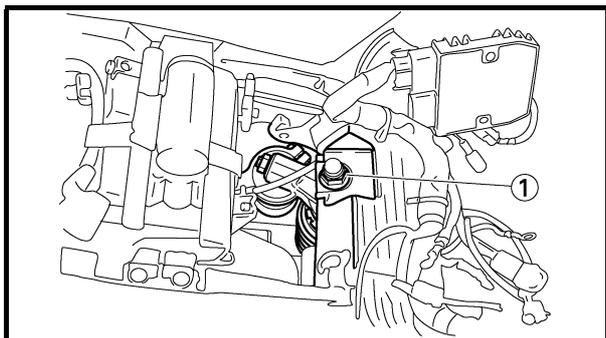


3. Remove:

- connecting rod front bolt ①
- rear shock absorber assembly lower bolt ②
- relay arm-to-swingarm bolt ③

### **NOTE:**

While removing the rear shock absorber assembly lower bolt, hold the swingarm so that it does not drop down.



4. Remove:

- rear shock absorber assembly upper nut ①
- rear shock absorber assembly

### **NOTE:**

Raise the swingarm and then remove the rear shock absorber assembly from between the swingarm.



EAS00698

## INSTALLING THE REAR SHOCK ABSORBER ASSEMBLY

(YZF-R1S)

1. Lubricate:

- spacers
- bearings

	<b>Recommended lubricant</b> <b>Lithium – soap-based grease</b>
---	--

2. Check:

- connecting rod assembly

Refer to “CHECKING THE CONNECTING ROD ASSEMBLY”

3. Install:

- rear shock absorber assembly

**NOTE:** \_\_\_\_\_

- When installing the rear shock absorber assembly, lift up the swingarm.
- Install the connecting rod front bolt from the left.

4. Tighten:

- rear shock absorber assembly upper nut

 **92 Nm (9.2 m•kg, 67 ft•lb)**

- rear shock absorber assembly lower nut

 **44 Nm (4.4 m•kg, 32 ft•lb)**

- relay arm-to swingarm nut

 **44 Nm (4.4 m•kg, 32 ft•lb)**

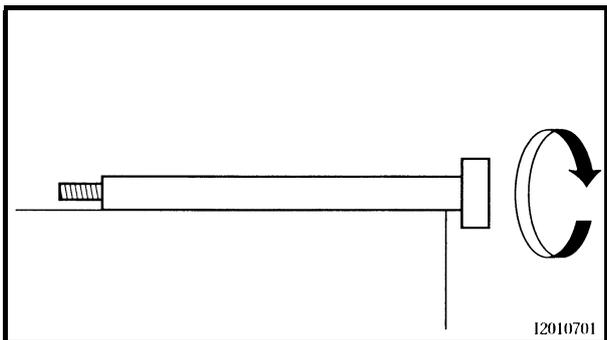
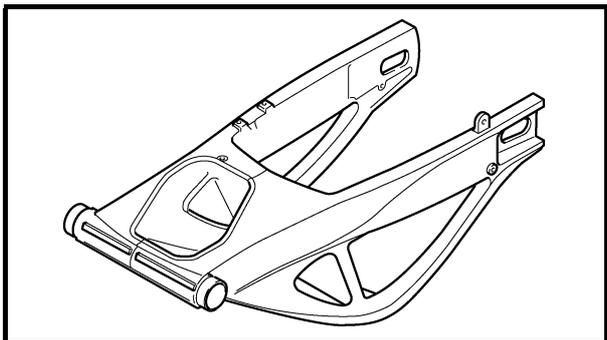
- connecting rod front nut

 **44 Nm (4.4 m•kg, 32 ft•lb)**

5. Install:

- EXUP servo motor
- catalyst pipe assembly
- muffler
- protector  
Refer to “EXHAUST PIPE” in chapter 5.
- rear cowling (upper)
- bottom cowling  
Refer to “COWLINGS” in chapter 3.
- fuel tank  
Refer to “FUEL TANK” in chapter 3.
- rider seat and passenger seat  
Refer to “SEATS” in chapter 3.





EAS00707

## CHECKING THE SWINGARM

(YZF-R1S)

1. Check:
  - swingarm
  - Bends/cracks/damage → Replace.

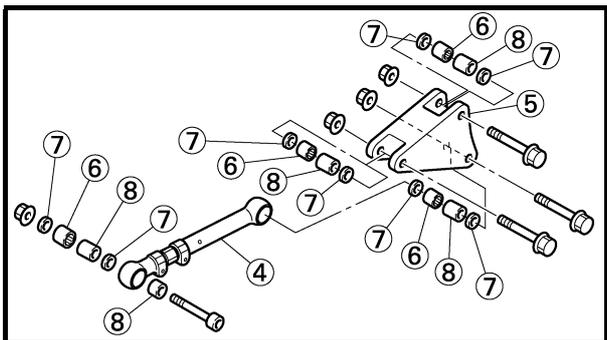
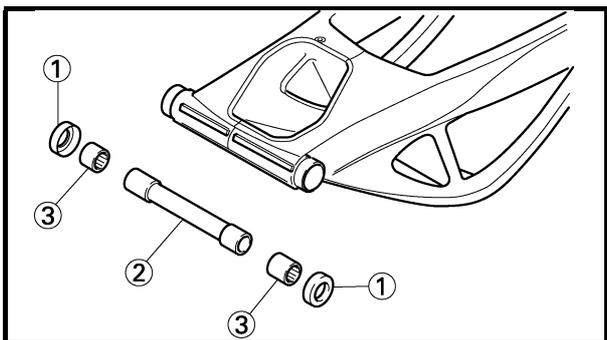
2. Check:
  - pivot shaft
  - Roll the pivot shaft on a flat surface.
  - Bends → Replace.

### **WARNING**

**Do not attempt to straighten a bent pivot shaft.**

3. Wash:
  - pivot shaft
  - dust covers
  - spacer
  - washers
  - bearings

	<b>Recommended cleaning solvent</b> <b>Kerosene</b>
---	--



4. Check:
  - dust covers ①
  - spacer ②
  - Damage/wear → Replace.
  - bearings ③
  - Damage/pitting → Replace.
5. Check:
  - connecting rod assembly ④
  - Refer to “CHECKING THE CONNECTING ROD ASSEMBLY”
  - relay arm ⑤
  - Damage/wear → Replace.
6. Check:
  - bearings ⑥
  - oil seals ⑦
  - Damage/pitting → Replace.
7. Check:
  - collars ⑧
  - Damage/scratches → Replace.

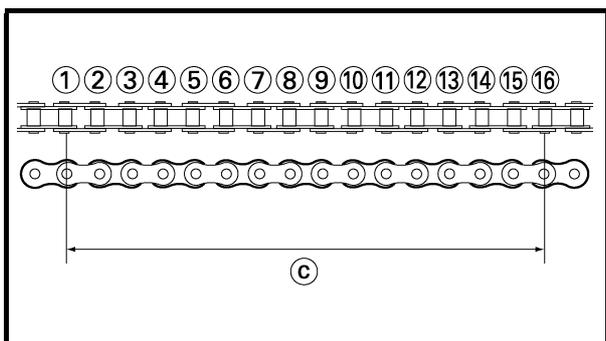
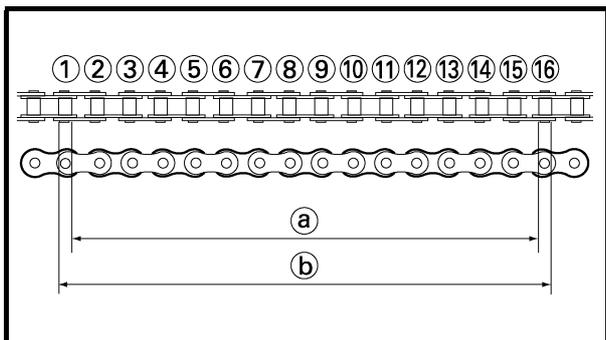


EAS00709

## CHECKING THE DRIVE CHAIN

### 1. Measure:

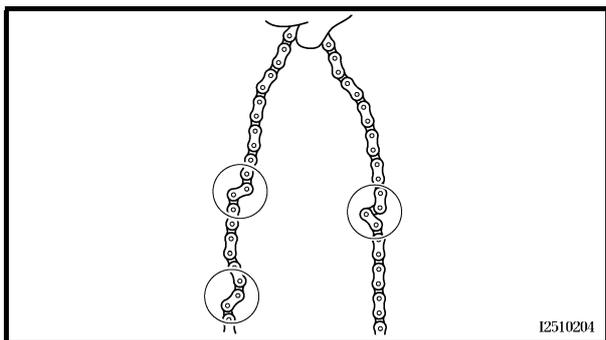
- Measure the dimension between 15-links on the inner side (a) and outer side (b) of the roller and calculate the dimension between pin centers.
- Dimension (c) between pin centers = (Inner dimension (a) + Outer dimension (b))/2
- 15-link section (c) of the drive chain  
Out of specification → Replace the drive chain, front drive sprocket and rear drive sprocket as a set.



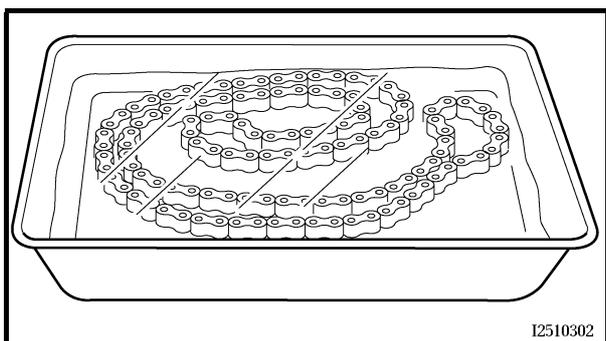
**15-link drive chain section limit (maximum)**  
239.3 mm (9.42 in)

### NOTE:

- While measuring the 15-link section, push down on the drive chain to increase its tension.
- Perform this measurement at two or three different places.



12510204



12510302

### 2. Check:

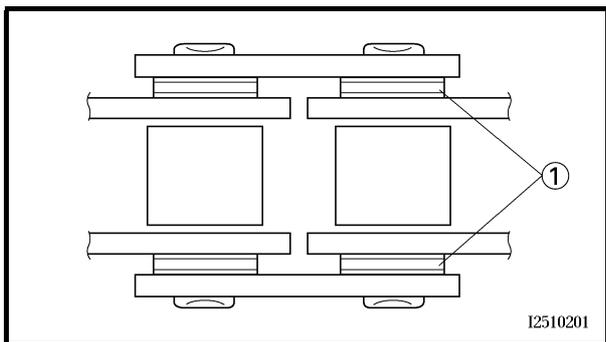
- drive chain  
Stiffness → Clean and lubricate or replace.

### 3. Clean:

- drive chain

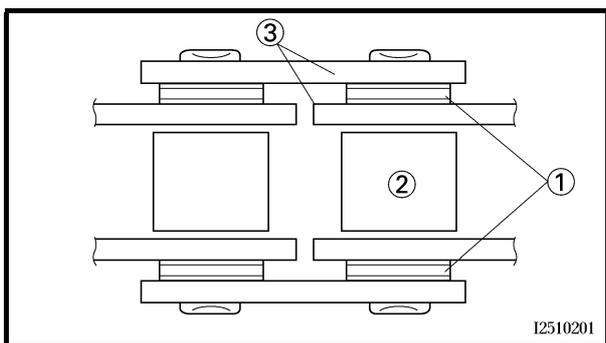


- Wipe the drive chain with a clean cloth.
- Put the drive chain in kerosene and remove any remaining dirt.
- Remove the drive chain from the kerosene and completely dry it.



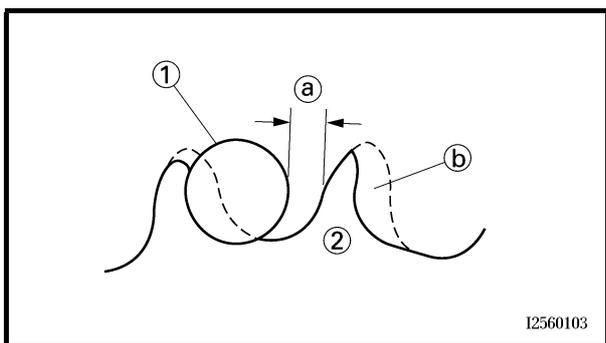
**CAUTION:**

This vehicle has a drive chain with small rubber O-rings ① between the drive chain side plates. Never use high-pressure water or air, steam, gasoline, certain solvents (e.g., benzine), or a coarse brush to clean the drive chain. High-pressure methods could force dirt or water into the drive chain's internals, and solvents will deteriorate the O-rings. A coarse brush can also damage the O-rings. Therefore, use only kerosine to clean the drive chain.



4. Check:
  - O-rings ①  
Damage → Replace the drive chain.
  - drive chain rollers ②  
Damage/wear → Replace the drive chain.
  - drive chain side plates ③  
Damage/wear → Replace the drive chain.  
Cracks → Replace the drive chain and make sure that the battery breather hose is properly routed away from the drive chain and below the swingarm.
5. Lubricate:
  - drive chain

	<p><b>Recommended lubricant</b>  <b>Engine oil or chain lubricant</b>  <b>suitable for O-ring chains</b></p>
---	--

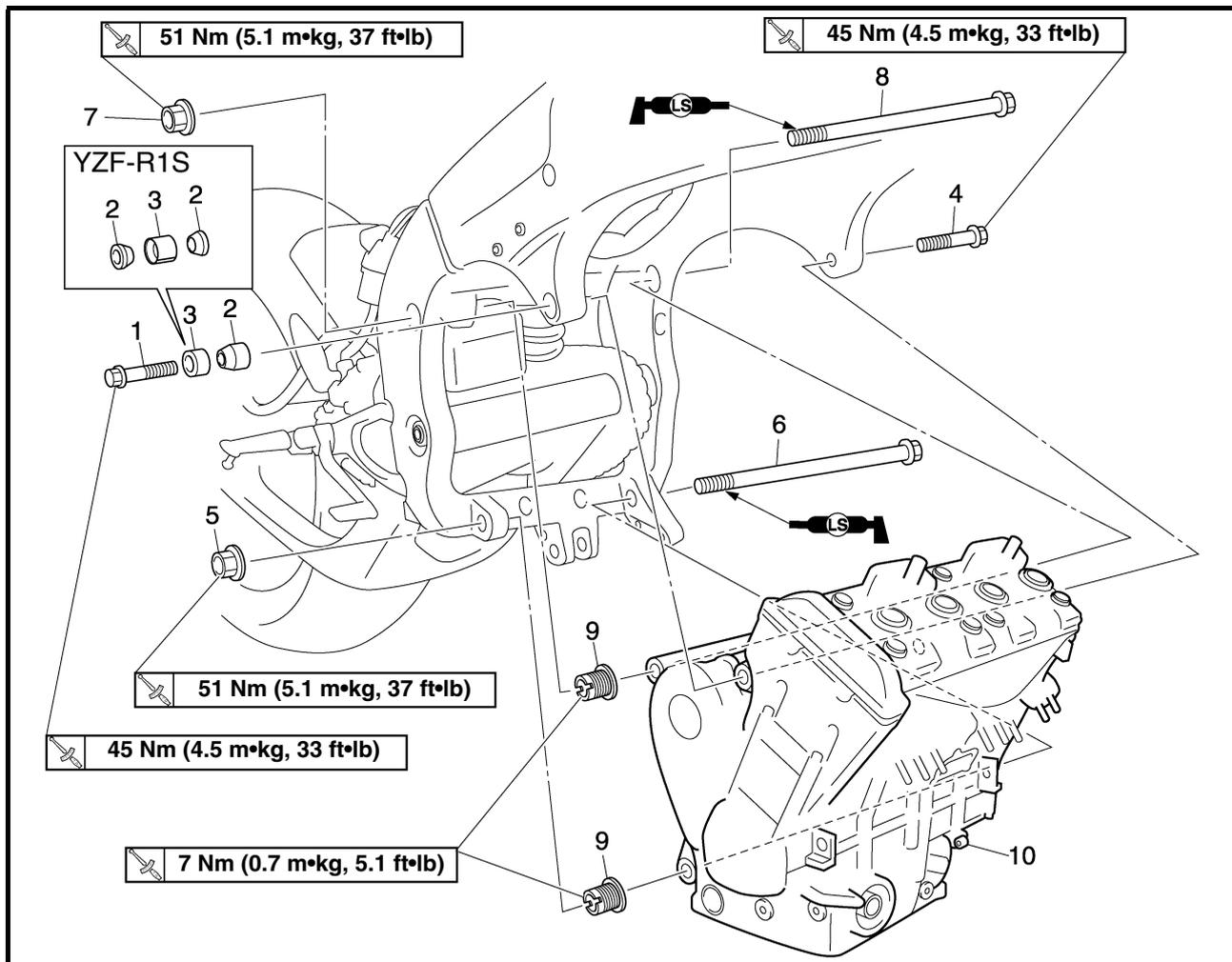


6. Check:
    - drive sprocket
    - rear wheel sprocket  
More than 1/4 tooth ① wear → Replace the drive chain sprockets as a set.  
Bent teeth → Replace the drive chain sprockets as a set.
- ① Correct  
 ② Drive chain roller  
 ③ Drive chain sprocket

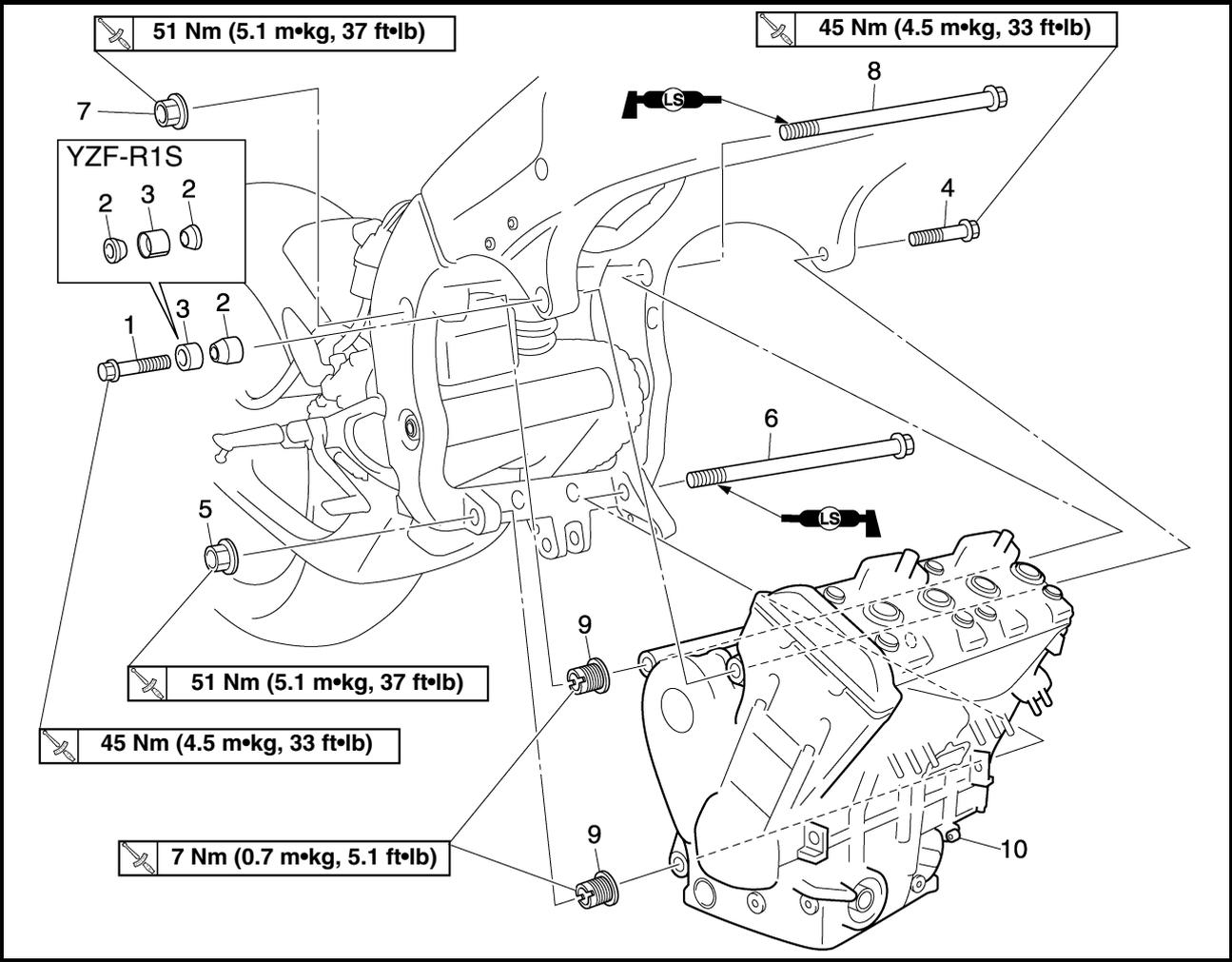


# ENGINE

## ENGINE



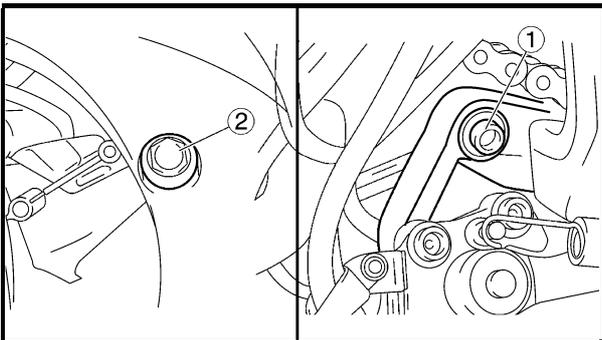
Order	Job/Part	Q'ty	Remarks
	<b>Removing the engine</b>		Remove the parts in the order listed. <b>NOTE:</b> _____ Place a suitable stand under the frame and engine.
1	Right front engine mounting bolt	1	
2	Engine mount collar (inside) (YZF-R1)	1	
	Engine mount collar (inside, outside) (YZF-R1S)	2	
3	Engine mount collar (outside) (YZF-R1)	1	
	Engine mount collar (center) (YZF-R1S)	1	
4	Left front engine mounting bolt	1	
5	Lower self locking nut	1	
6	Lower engine mounting bolt	1	
7	Upper self locking nut	1	



Order	Job/Part	Q'ty	Remarks
8	Upper engine mounting bolt	1	
9	Engine mounting adjust bolt	2	<b>NOTE:</b> _____
10	Engine	1	Use the pivot shaft wrench and adapter to loosen the engine mounting adjust bolts. _____ For installation, reverse the removal procedure.

**INSTALLING THE ENGINE**

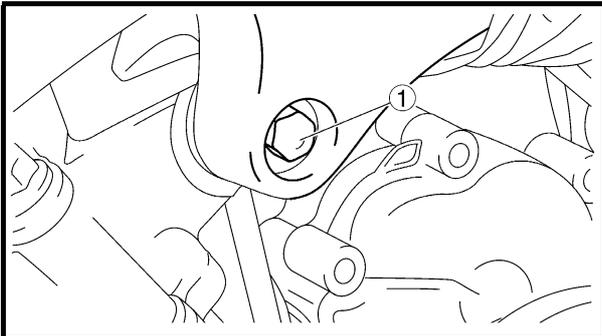
1. Install:
  - engine mounting adjust bolts (temporary tighten)
2. Install:
  - engine



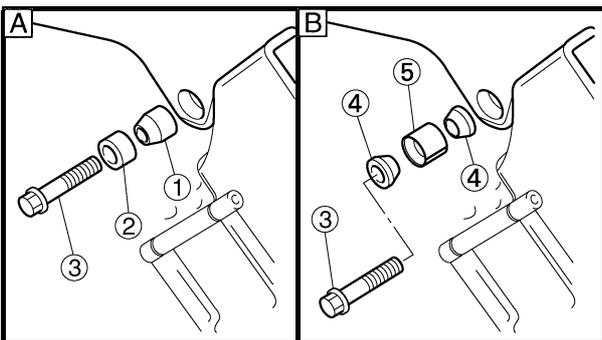
3. Install:
  - lower engine mounting bolt ①
  - upper engine mounting bolt ②
  - self locking nuts

**NOTE:**

Lubricate the lower and upper engine mounting bolts threads with lithium-soap-based grease.



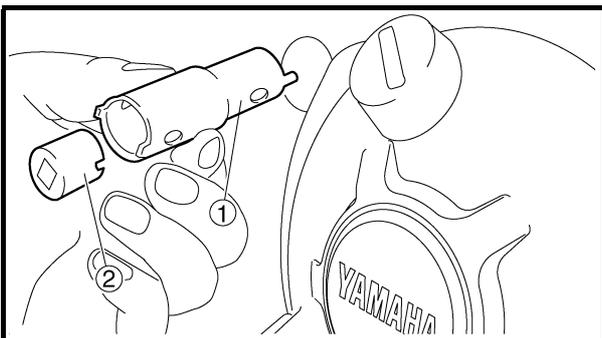
4. Install:
  - left front engine mount bolt ① (temporary tighten)



5. Install:
  - engine mount collar (inside) ①
  - engine mount collar (outside) ②
  - right front engine mount bolt ③ (temporary tighten)
  - engine mount collar (inside, outside) ④
  - engine mount collar (center) ⑤

**A** YZF-R1

**B** YZF-R1S

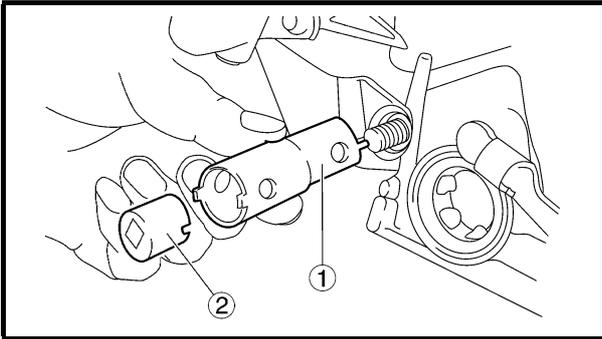


6. Tighten:
  - engine mounting adjust bolts

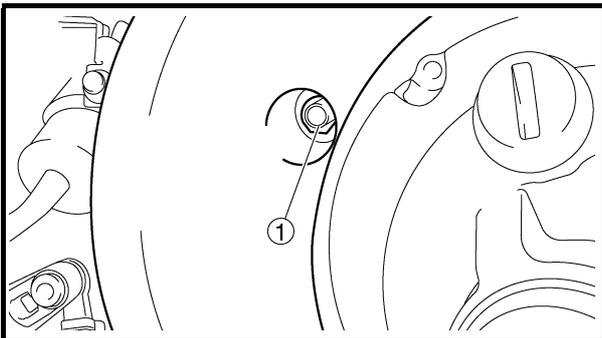
 **7 Nm (0.7 m•kg, 5.1 ft•lb)**

**NOTE:**

Use the pivot shaft wrench ① and pivot shaft wrench adapter ② to tighten the engine mounting adjust bolts.



Pivot shaft wrench  
90890-01471, YM-01471  
Pivot shaft wrench adapter  
90890-01476



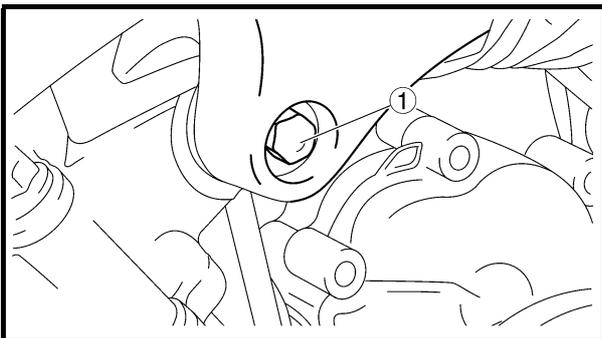
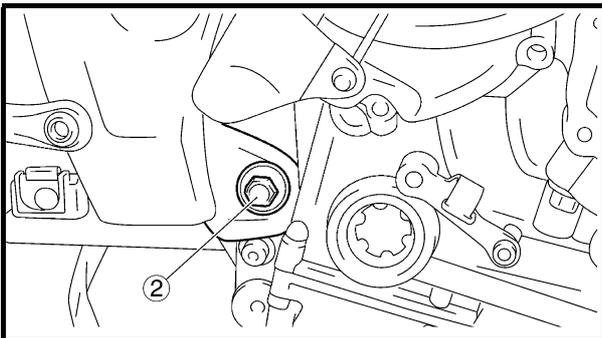
7. Tighten:

- upper self-locking nut ①
- lower self-locking nut ②

 51 Nm (5.1 m•kg, 37 ft•lb)

**NOTE:**

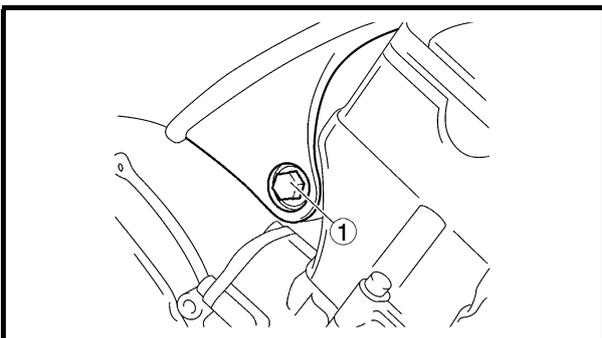
First tighten the lower self-locking nut, and then tighten the upper self-locking nut.



8. Tighten:

- left front engine mounting bolt ①

 45 Nm (4.5 m•kg, 33 ft•lb)



9. Tighten:

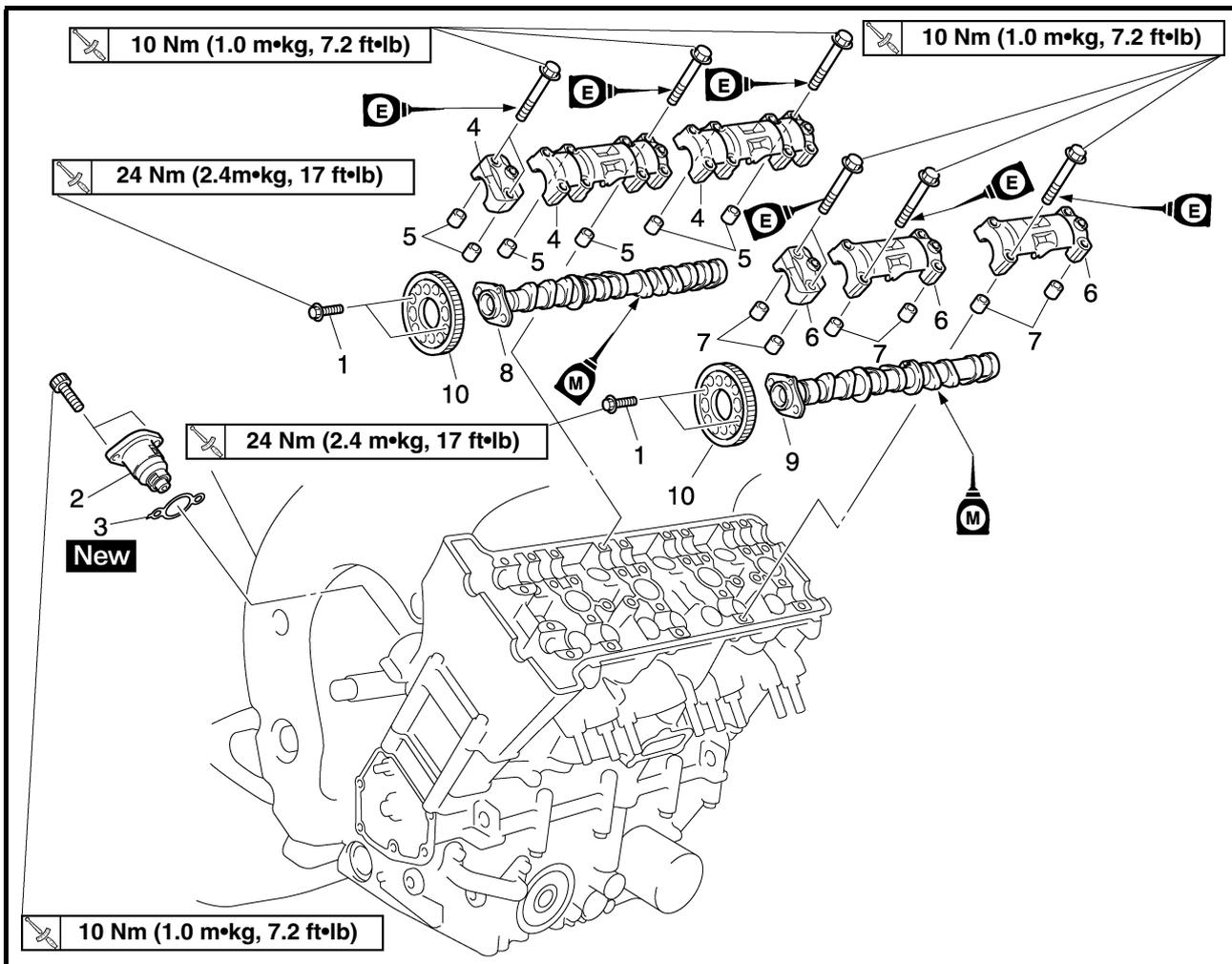
- right front engine mounting bolt ①

 45 Nm (4.5 m•kg, 33 ft•lb)



EAS00196

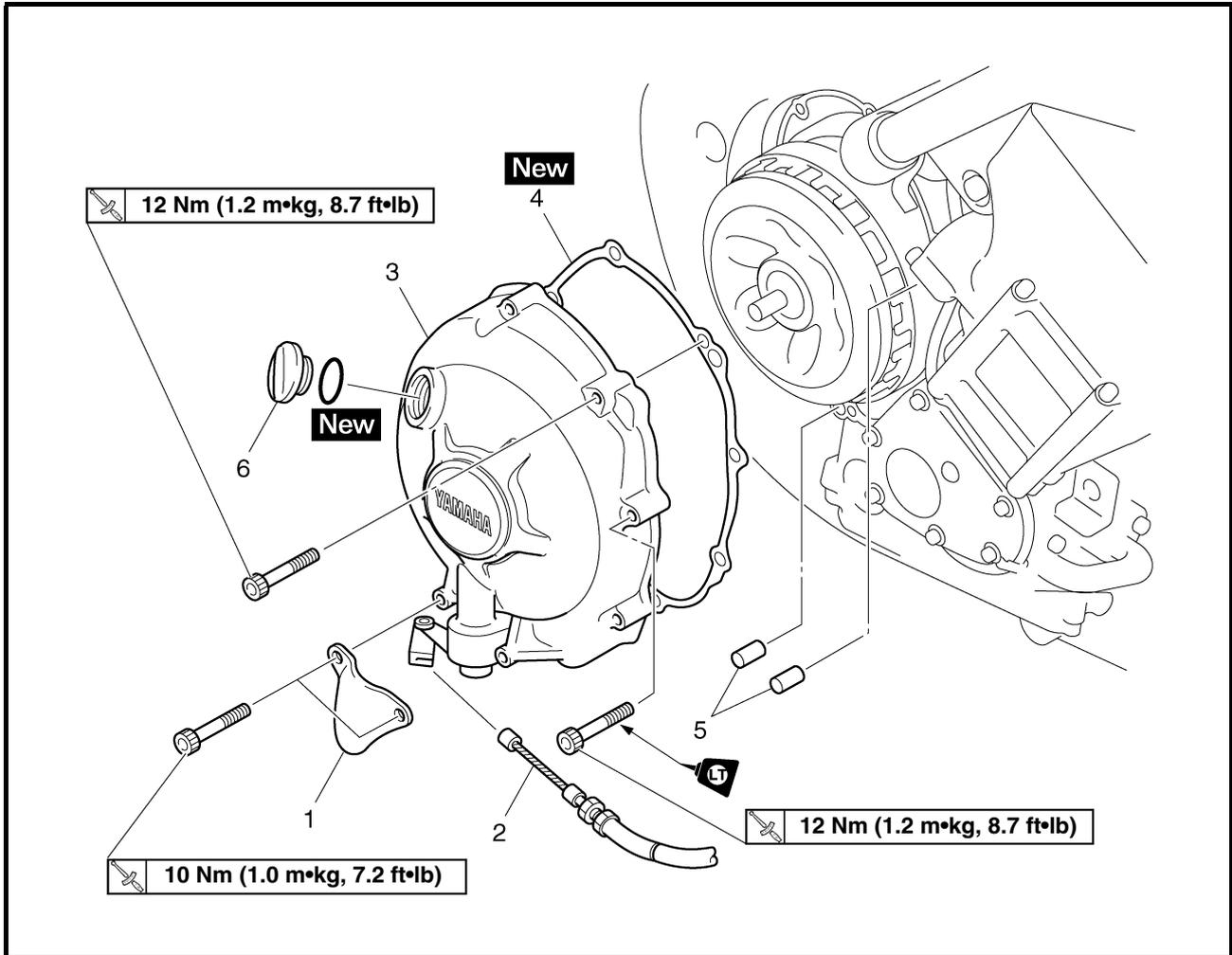
**CAMSHAFTS**



Order	Job/Part	Q'ty	Remarks
	<b>Removing the camshafts</b>		
	Pickup rotor cover		Remove the parts in the order listed. Refer to "CRANKSHAFT POSITION SENSOR AND PICKUP ROTOR".
1	Camshaft sprocket bolt	4	Loosen.
2	Timing chain tensioner	1	<b>NOTE:</b> _____ During removal, the dowel pins may still be connected to the camshaft caps.
3	Timing chain tensioner gasket	1	
4	Intake camshaft cap	3	
5	Dowel pin	6	
6	Exhaust camshaft cap	3	
7	Dowel pin	6	
8	Intake camshaft	1	
9	Exhaust camshaft	1	
10	Camshaft sprocket	2	
			For installation, reverse the removal procedure.



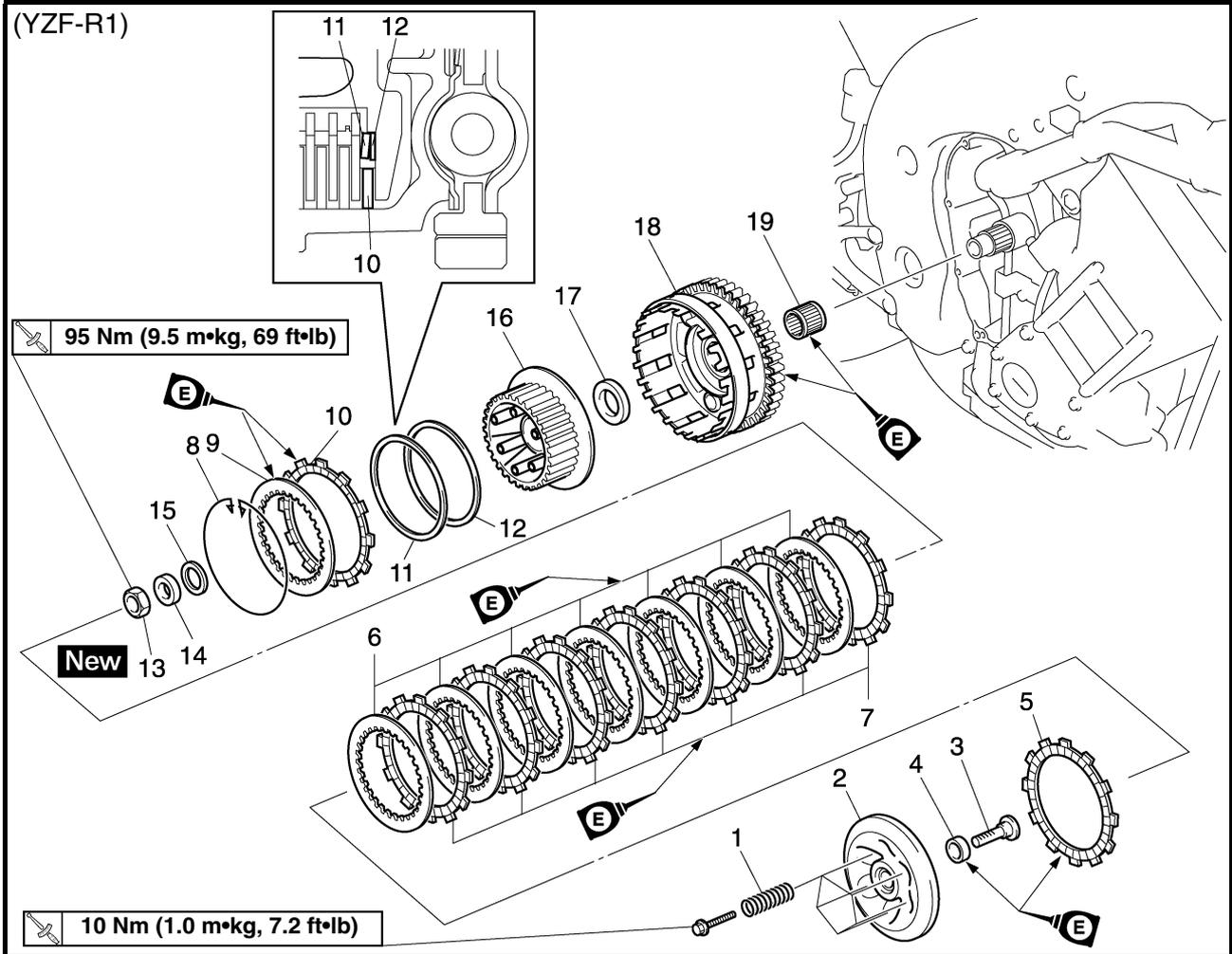
CLUTCH  
CLUTCH COVER



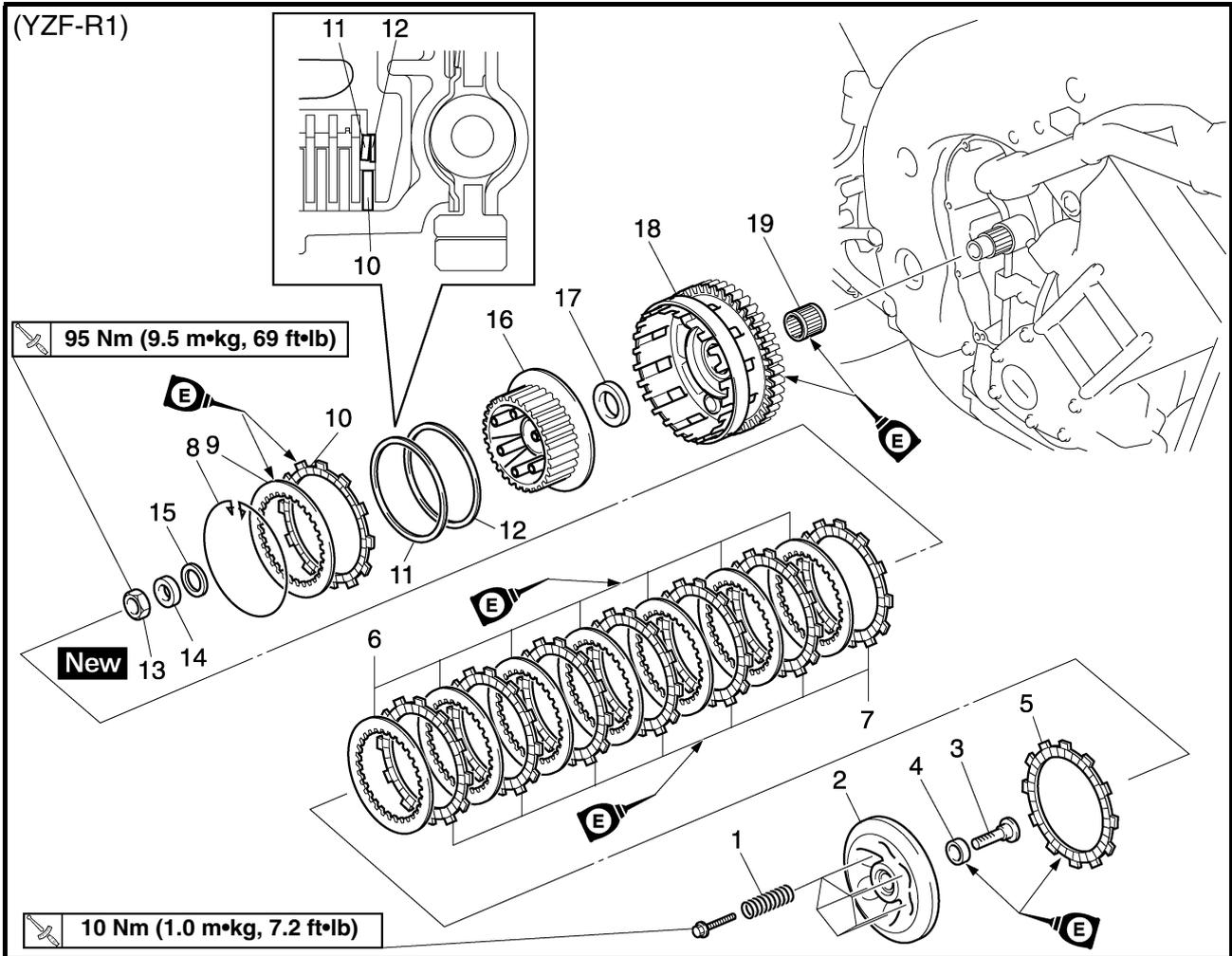
Order	Job/Part	Q'ty	Remarks
	<b>Removing the clutch cover</b>		Remove the parts in the order listed.
	Right side cowling		Refer to "COWLINGS" in chapter 3.
	Right frame side cover		
	Right frame side panel		
	Bottom cowling		
	Engine oil		Drain. Refer to "CHANGING THE ENGINE OIL" in chapter 3.
1	Cover	1	Disconnect.
2	Clutch cable	1	
3	Clutch cover	1	
4	Clutch cover gasket	1	
5	Dowel pin	2	
6	Oil filler cap	1	
			For installation, reverse the removal procedure.



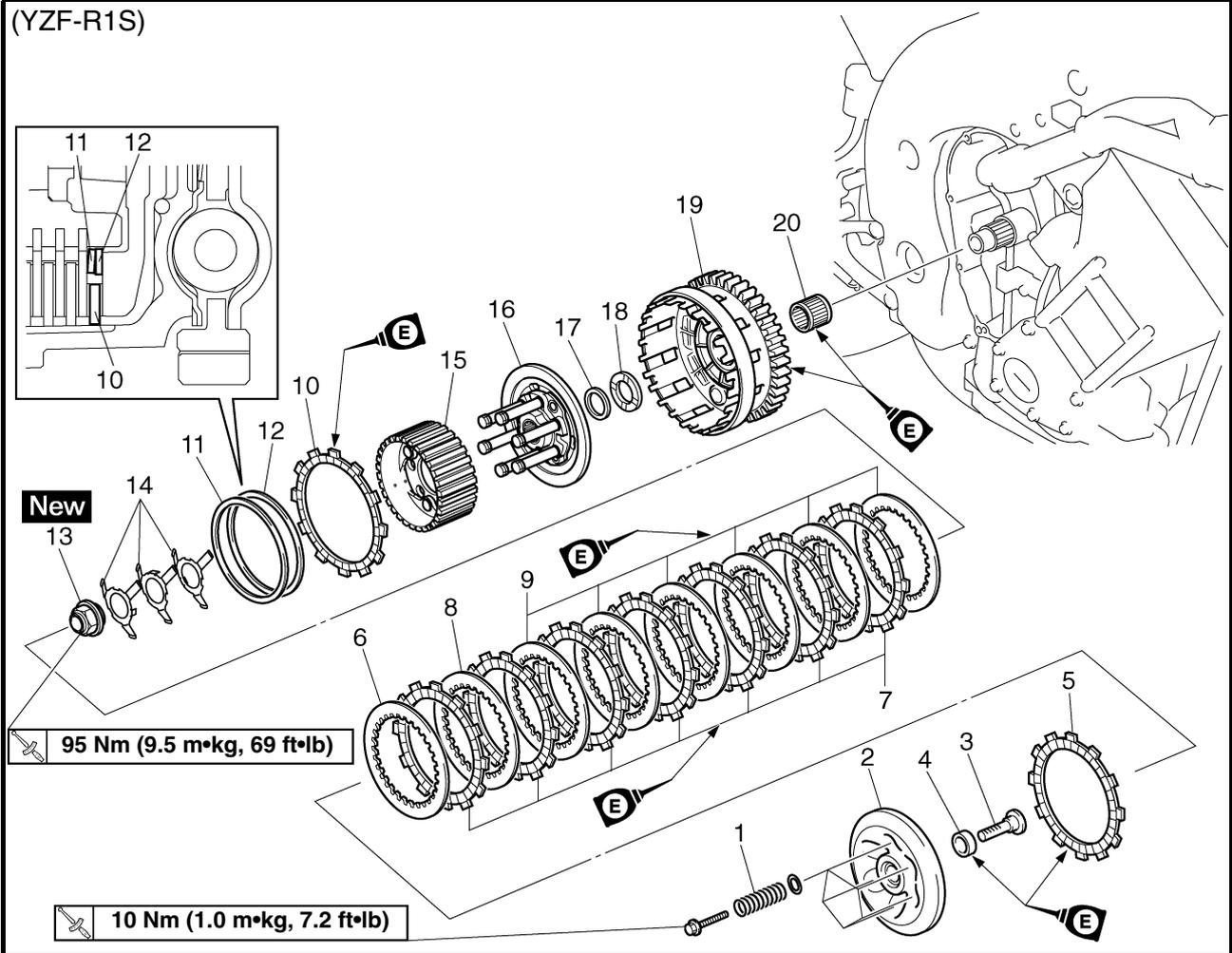
CLUTCH



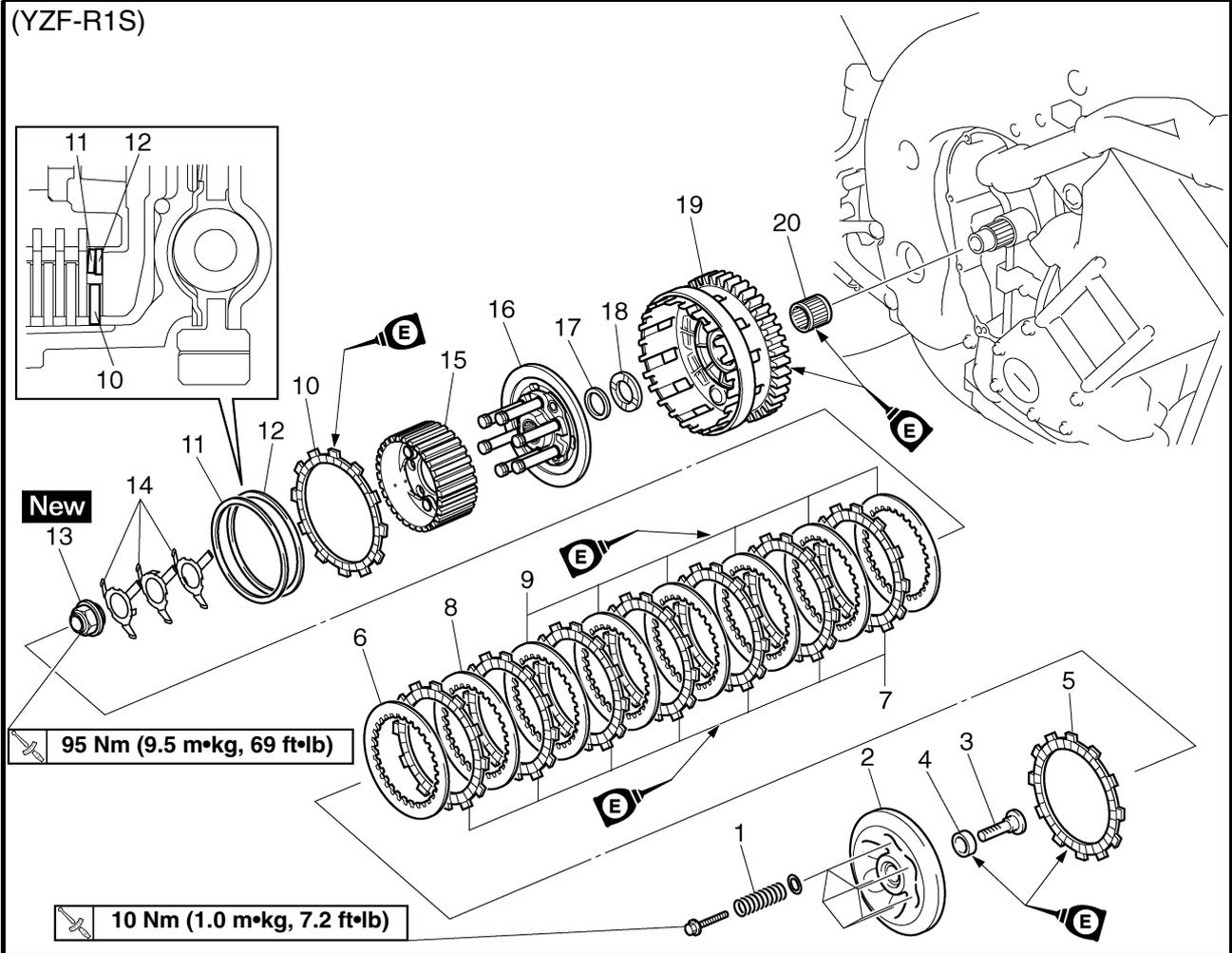
Order	Job/Part	Q'ty	Remarks
	<b>Removing the clutch</b>		Remove the parts in the order listed.
1	Compression spring	6	
2	Pressure plate	1	
3	Pull rod	1	
4	Bearing	1	
5	Friction plate 1	1	
6	Clutch plate 1	7	
7	Friction plate 2	7	
8	Wire clip	1	
9	Clutch plate 2	1	
10	Friction plate 3	1	
11	Clutch damper spring	1	
12	Clutch damper spring seat	1	



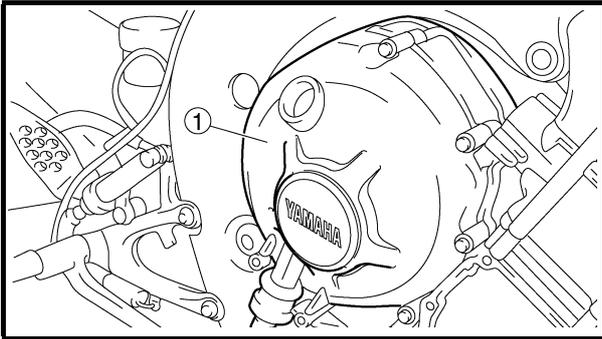
Order	Job/Part	Q'ty	Remarks
13	Clutch boss nut	1	For installation, reverse the removal procedure.
14	Washer	1	
15	Thrust plate 1	1	
16	Clutch boss	1	
17	Thrust plate 2	1	
18	Clutch housing	1	
19	Bearing	1	



Order	Job/Part	Q'ty	Remarks
	<b>Removing the clutch</b>		Remove the parts in the order listed.
1	Compression spring	6	
2	Pressure plate 1	1	
3	Pull rod	1	
4	Bearing	1	
5	Friction plate 1	1	
6	Clutch plate 1	1	
7	Friction plate 2	7	
8	Clutch plate 2	1	
9	Clutch plate 3	6	
10	Friction plate 3	1	
11	Clutch damper spring	1	
12	Clutch damper spring seat	1	
13	Clutch boss nut	1	



Order	Job/Part	Q'ty	Remarks
14	Spring	3	
15	Clutch boss	1	
16	Pressure plate 2	1	
17	Conical spring washer	1	
18	Thrust plate 2	1	
19	Clutch housing	1	
20	Bearing	1	
			For installation, reverse the removal procedure.



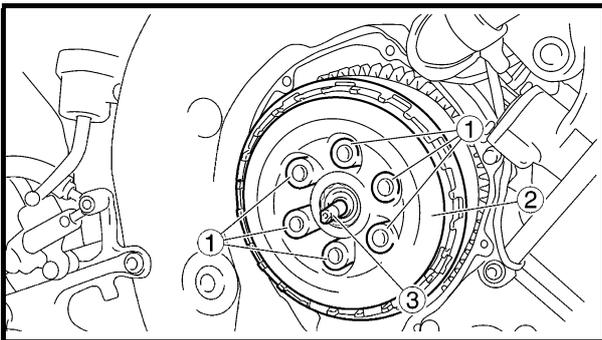
EAS00276

## REMOVING THE CLUTCH (YZF-R1S)

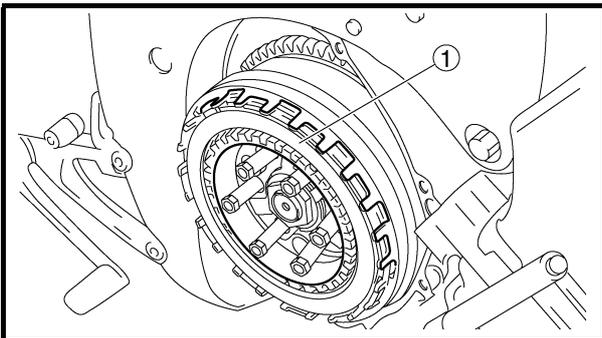
1. Remove:
  - clutch cover ①
  - gasket

### NOTE:

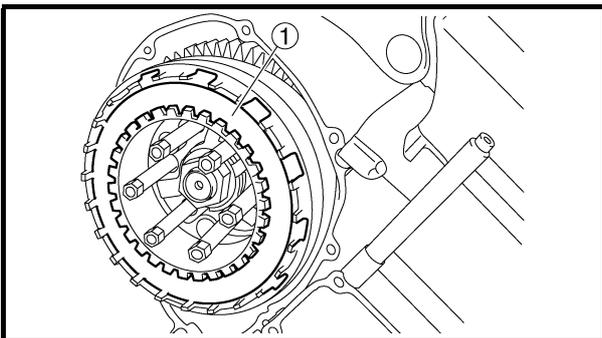
Loosen each bolt 1/4 of a turn at a time, in stages and in a crisscross pattern. After all of the bolts are fully loosened, remove them.



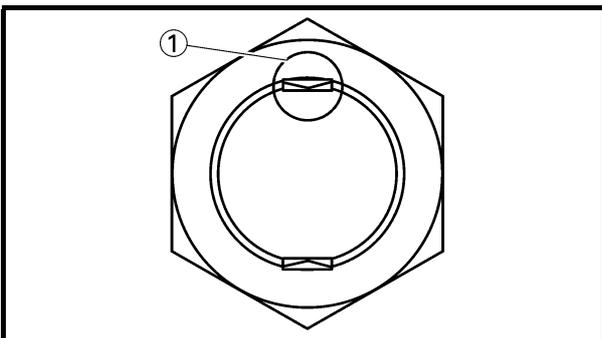
2. Remove:
  - compression spring bolts ①
  - compression springs
  - pressure plate ②
  - pull rod ③



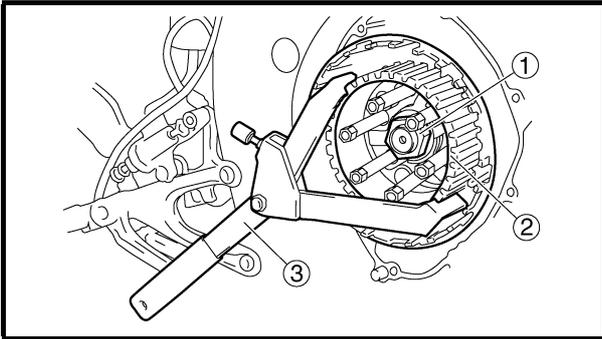
3. Remove:
  - friction plate 1 ①



4. Remove:
  - clutch plate 1 ①
  - friction plate 2
  - clutch plate 2
  - clutch plate 3
  - friction plate 3
  - clutch damper spring
  - clutch damper spring seat



5. Straighten the clutch boss nut rib ①.



6. Loosen:
- clutch boss nut ①

**NOTE:**

While holding the clutch boss ② with the universal clutch holder ③, loosen the clutch boss nut.



**Universal clutch holder**  
90890-04086, YM-91042

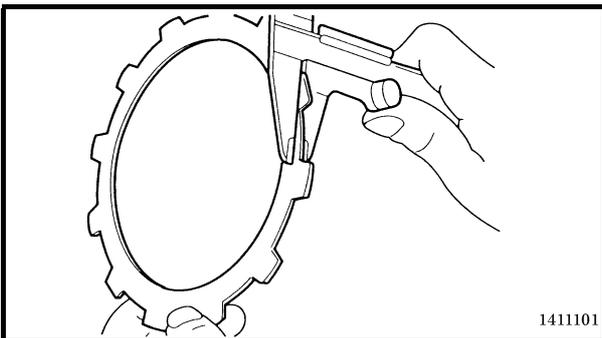
7. Remove:
- clutch boss nut
  - springs
  - clutch boss
  - pressure plate 2
  - conical spring washer
  - thrust plate 2

EAS00280

### CHECKING THE FRICTION PLATES (YZF-R1S)

The following procedure applies to all of the friction plates.

1. Check:
- friction plate
- Damage/wear → Replace the friction plates as a set.



2. Measure:
- friction plate thickness
- Out of specification → Replace the friction plates as a set.

**NOTE:**

Measure the friction plate at four places.



**Friction plate thickness**  
2.9 ~ 3.1 mm (0.114 ~ 0.122 in)  
<Limit>: 2.8 mm (0.110 in)



EAS00281

**CHECKING THE CLUTCH PLATES**

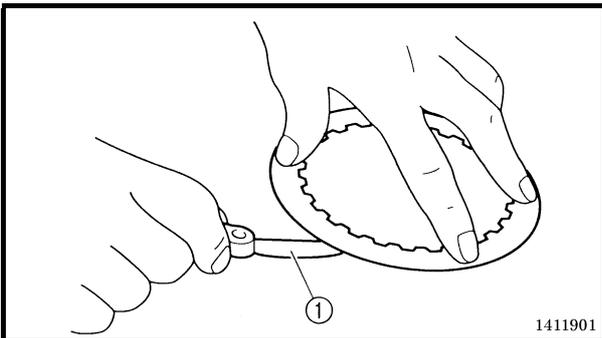
(YZF-R1S)

The following procedure applies to all of the clutch plates.

1. Check:

- clutch plate

Damage → Replace the clutch plates as a set.



1411901

2. Measure:

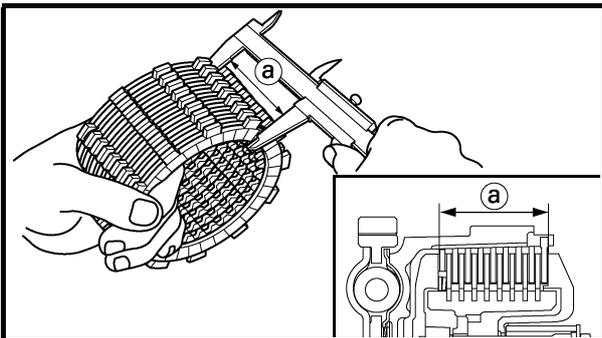
- clutch plate warpage

(with a surface plate and thickness gauge (1))

Out of specification → Replace the clutch plates as a set.



**Clutch plate warpage limit**  
0.1 mm (0.0039 in)



3. Measure:

- assembly width (a) of the friction plates and clutch plates

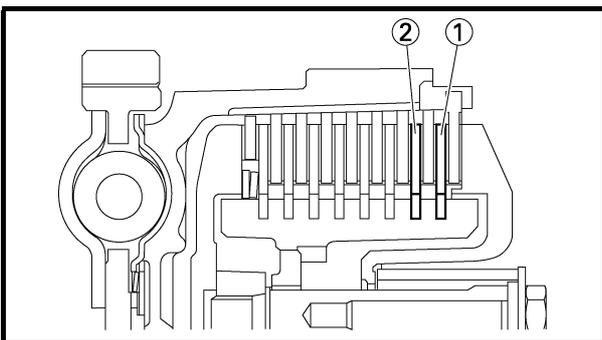
Out of specification → Adjust.



**Assembly width**  
42.4 ~ 43.0 mm (1.67 ~ 1.69 in)

**NOTE:**

Perform the thickness measurement without applying the oil.



a. Assembly width adjusted by clutch plate (1) and (2).

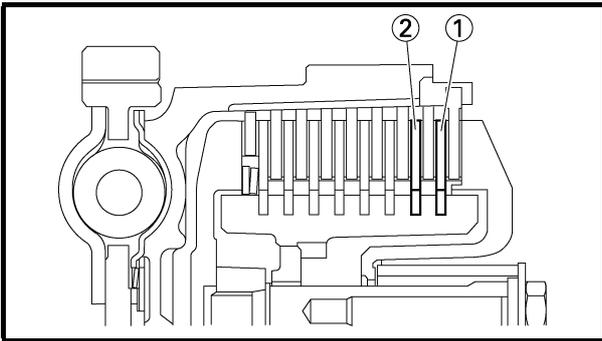
b. Select the clutch plate from the following table.

**Clutch plate (1)**

Part No.	Thickness	
4B1-16324-00	1.6 mm (0.062 in)	
5VY-16325-00	2.0 mm (0.079 in)	STD
4B1-16325-00	2.3 mm (0.091 in)	

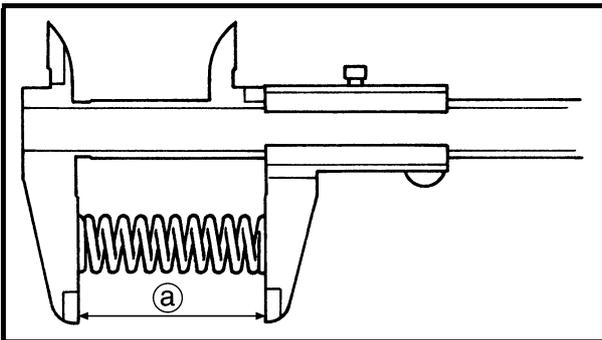
**Clutch plate (2)**

Part No.	Thickness	
5VY-16325-00	2.0 mm (0.079 in)	STD
4B1-16325-00	2.3 mm (0.091 in)	



**NOTE:**

When adjusting the clutch assembly width [by replacing the clutch plate(s)], be sure to replace the clutch plate ① fast.  
After replacing the clutch plate ①, if specifications cannot be met, replace the clutch plate ②.



EAS00282

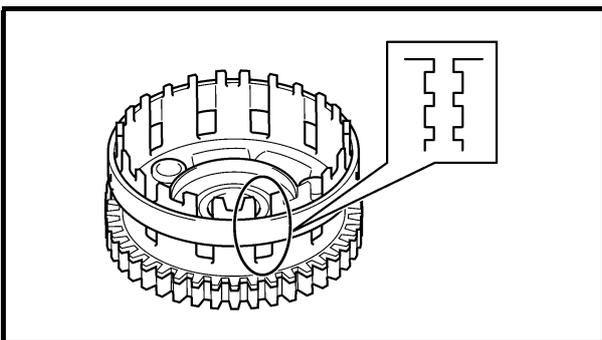
**CHECKING THE CLUTCH SPRINGS**  
(YZF-R1S)

The following procedure applies to all of the clutch springs.

1. Check:
  - clutch spring  
Damage → Replace the clutch springs as a set.
2. Measure:
  - clutch spring free length (a)  
Out of specification → Replace the clutch springs as a set.



**Clutch spring free length**  
**43.8 mm (1.72 in)**  
**<Limit>: 41.6 mm (1.64 in)**



EAS00284

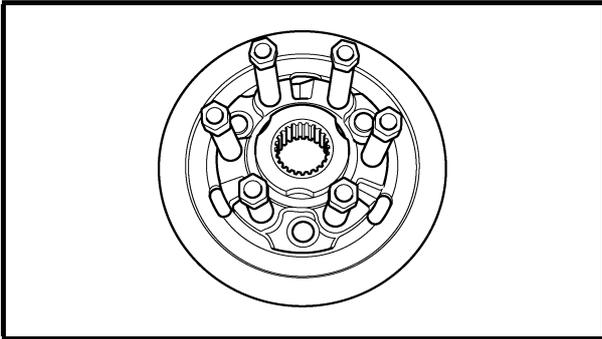
**CHECKING THE CLUTCH HOUSING**  
(YZF-R1S)

1. Check:
  - clutch housing dogs  
Damage/pitting/wear → Deburr the clutch housing dogs or replace the clutch housing.

**NOTE:**

Pitting on the clutch housing dogs will cause erratic clutch operation.

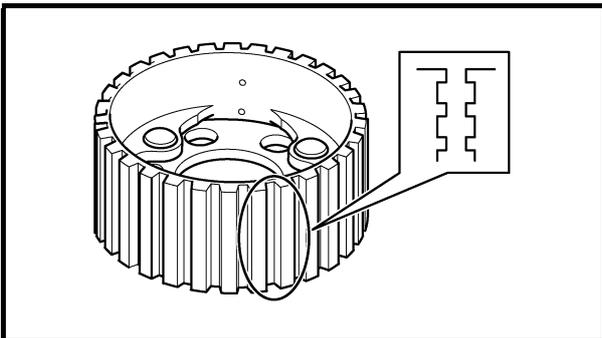
2. Check:
  - bearing  
Damage/wear → Replace the bearing and clutch housing.

**CHECKING THE PRESSUR PLATE 2**

(YZF-R1S)

## 1. Check:

- pressure plate 2  
Cracks/damage → Replace.



EAS00285

**CHECKING THE CLUTCH BOSS**

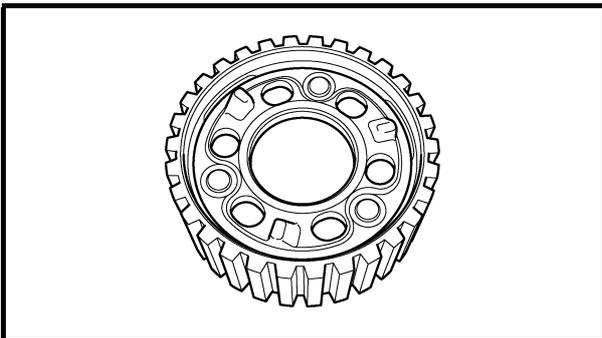
(YZF-R1S)

## 1. Check:

- clutch boss splines  
Damage/pitting/wear → Replace the clutch boss.

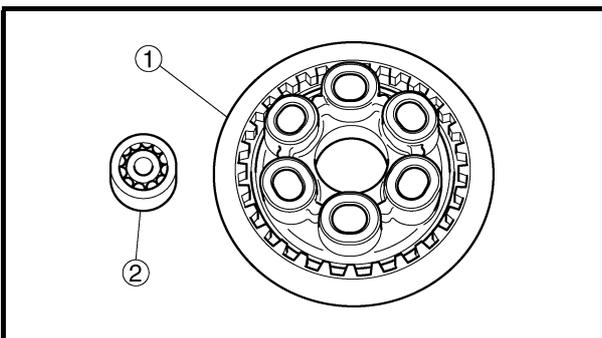
**NOTE:** \_\_\_\_\_

Pitting on the clutch boss splines will cause erratic clutch operation.



## 2. Check:

- clutch boss  
Cracks/damage → Replace.



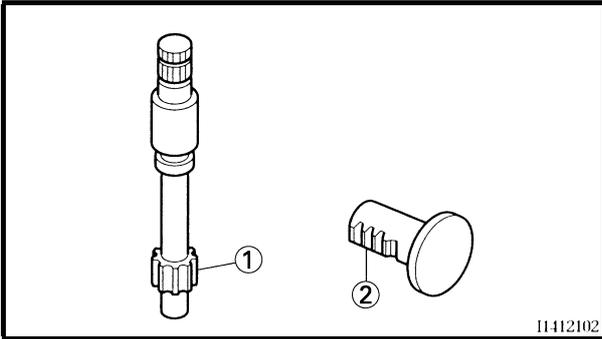
EAS00286

**CHECKING THE PRESSURE PLATE 1**

(YZF-R1S)

## 1. Check:

- pressure plate ①  
Cracks/damage → Replace.
- bearing ②  
Damage/wear → Replace.



EAS00287

### CHECKING THE PULL LEVER SHAFT AND PULL ROD (YZF-R1S)

#### 1. Check:

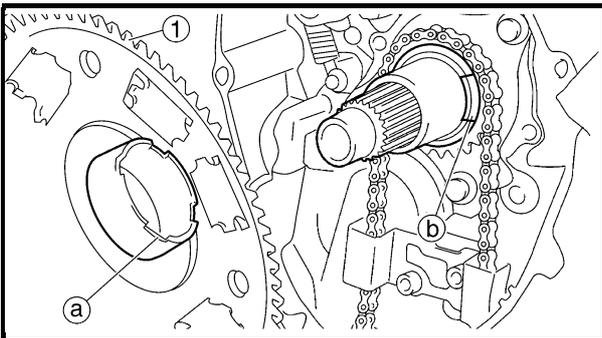
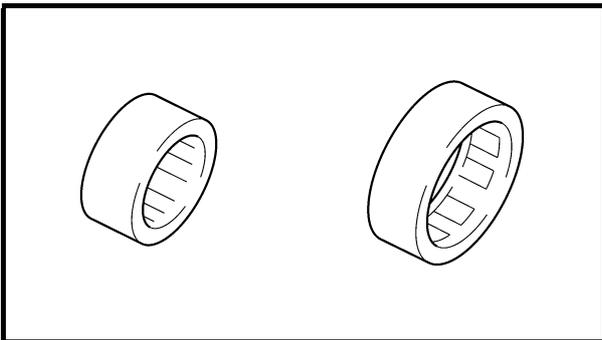
- pull lever shaft pinion gear teeth ①
- pull rod teeth ②

Damage/wear → Replace the pull rod and pull lever shaft pinion gear as a set.

#### 2. Check:

- pull rod bearing

Damage/wear → Replace.



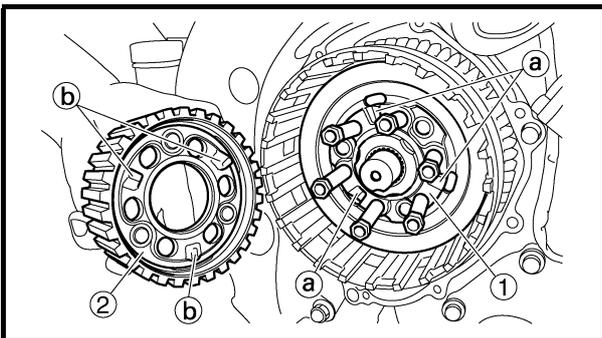
### INSTALLING THE CLUTCH (YZF-R1S)

#### 1. Install:

- clutch housing ①
- conical spring washer
- thrust plate 2

#### NOTE:

Align the projection of clutch housing (a) and hollow of the oil pump drive gear (b).

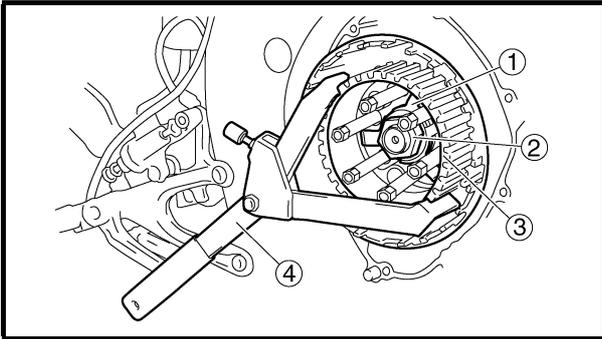


#### 2. Install:

- pressure plate 2 ①
- clutch boss ②

#### NOTE:

Fit the groove (a) of the pressure plate 2 to the projection (b) of the clutch boss to assemble.



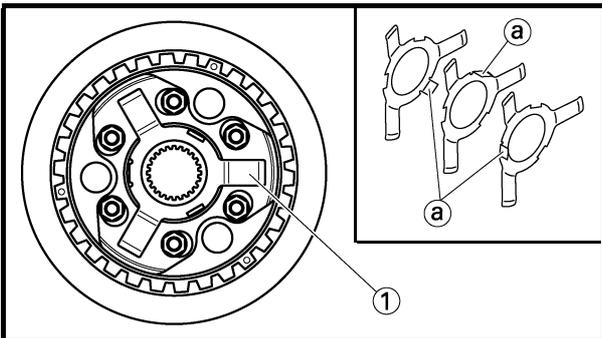
3. Install:

- spring ①
- clutch boss nut ② **New**

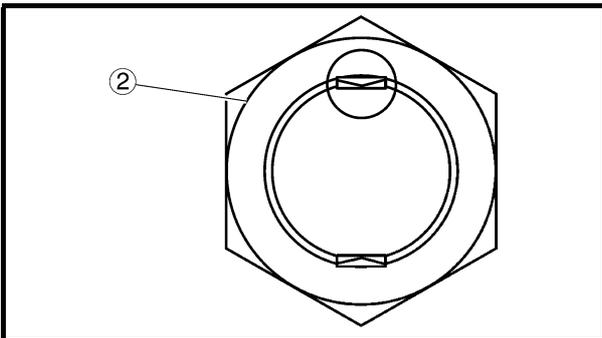
 **95 Nm (9.5 m•kg, 69 ft•lb)**

**NOTE:** \_\_\_\_\_

- Put the spring detent (a) into the groove of the pressure plate 2. Assemble so that each spring detent (a) is positioned in a different groove.
- While holding the clutch boss ③ with the clutch holding tool ④, tighten the clutch boss nut.
- Lock the threads on the clutch boss nut by staking them with a drift punch at the point aligned with the groove in the axle.



**Universal clutch holder**  
**90890-04086, YM-91042**

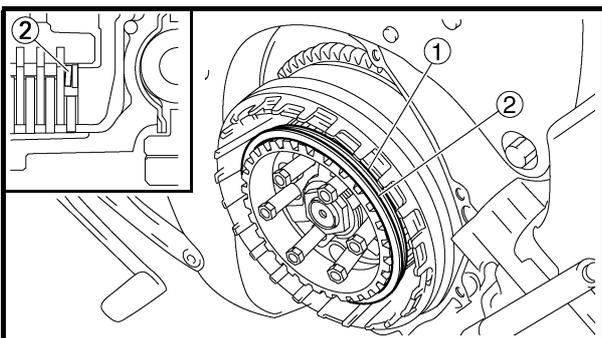


4. Install:

- clutch damper spring seat ①
- clutch damper spring ②

**NOTE:** \_\_\_\_\_

Install the clutch damper spring as shown in the illustration.

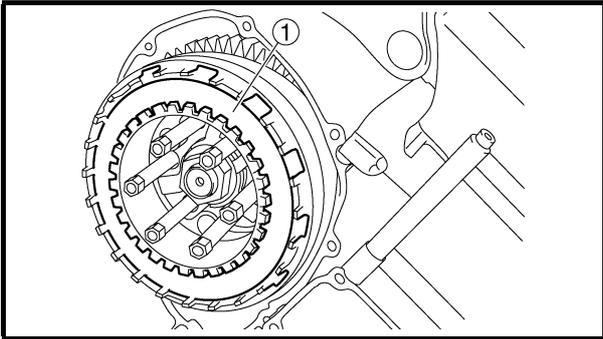


5. Lubricate:

- friction plates
- clutch plates  
(with the recommended lubricant)

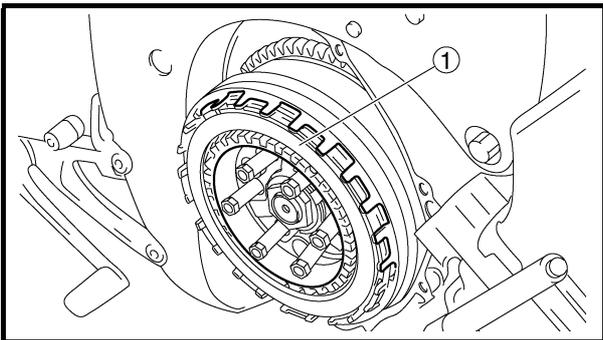


**Recommended lubricant**  
**Engine oil**



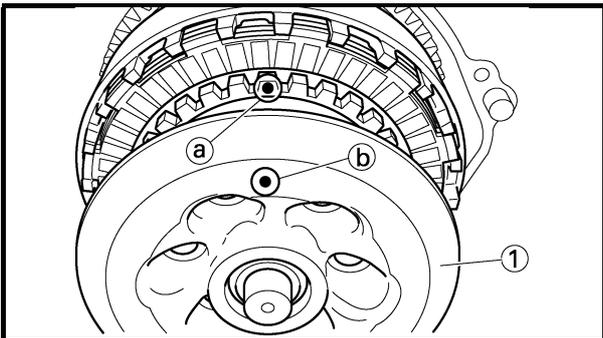
6. Install:
- friction plate 3
  - friction plate 2
  - clutch plate 3
  - clutch plate 2
  - clutch plate 1 (1)

**NOTE:** \_\_\_\_\_  
 Assemble the friction plates and clutch plates according to the installation order.



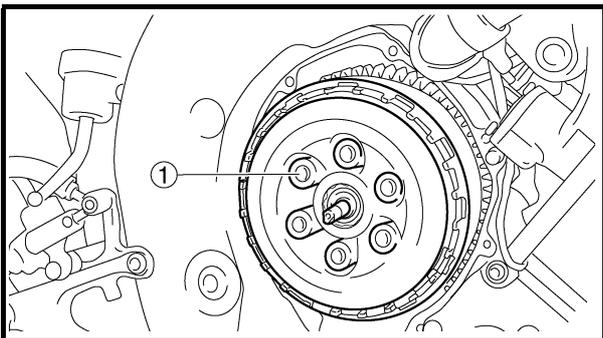
7. Install:
- friction plate 1 (1)

**NOTE:** \_\_\_\_\_  
 Install the last friction plate shifting half phase.



8. Install:
- bearing
  - pull rod
  - pressure plate 1 (1)

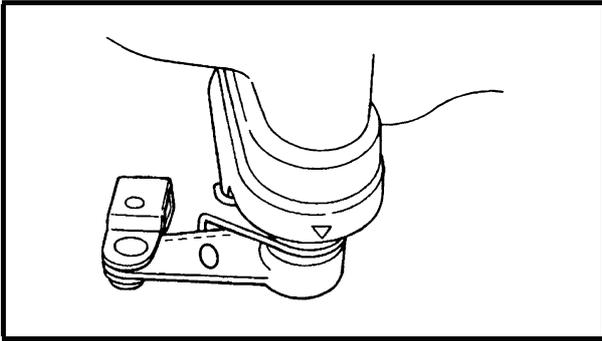
**NOTE:** \_\_\_\_\_  
 Align the punch mark (b) on the pressure plate with the punch mark (a) on the clutch boss.



9. Install:
- clutch springs
  - clutch spring bolts (1)

10 Nm (1.0 m•kg, 7.2 ft•lb)

**NOTE:** \_\_\_\_\_  
 Tighten the clutch spring bolts in stages and in a crisscross pattern.



10. Install:
- pull lever

**NOTE:**

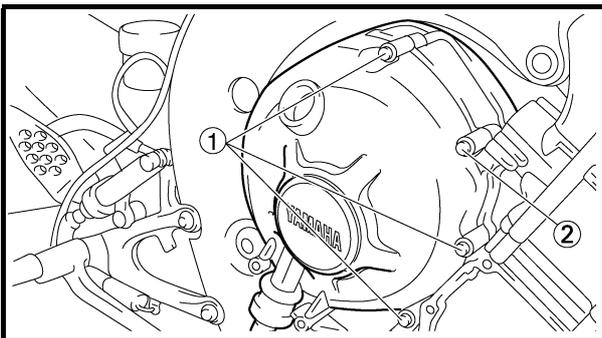
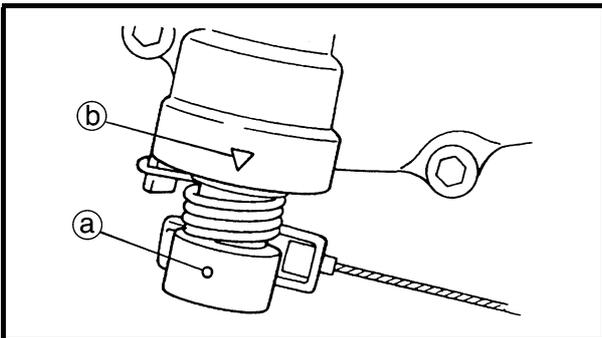
Install the pull lever with the “○” mark facing toward upper side.

11. Install:

- clutch cover
- clutch cover gasket **New**

**NOTE:**

- Install the pull rod so that the teeth a face towards the rear of the vehicle. Then, install the clutch cover.
- Apply oil onto the bearing.
- Apply molybdenum disulfide grease onto the pull rod.
- When installing the clutch cover, push the pull lever and check that the punch mark (a) on the pull lever aligns with the mark (b) on the clutch cover. Make sure that the pull rod teeth and pull lever shaft pinion gear are engaged.



12. Tighten:

- clutch cover bolts ①

 12 Nm (1.2 m•kg, 8.7 ft•lb)

- clutch cover bolt ②

 12 Nm (1.2 m•kg, 8.7 ft•lb)  
LOCTITE®

**NOTE:**

Tighten the clutch cover bolts in a stages and in a crisscross pattern.

13. Adjust:

- clutch cable free play  
Refer to “ADJUSTING THE CLUTCH CABLE FREE PLAY” in chapter 3.

## YZF-R1 (V)/ YZF-R1S (V) 2006 WIRING DIAGRAM

- ① Main switch
- ② A.C. magneto
- ③ Rectifier/regulator
- ④ Fuse (main)
- ⑤ Fuse (back up)
- ⑥ Immobilizer unit
- ⑦ Battery
- ⑧ Fuse (fuel injection)
- ⑨ Starter relay
- ⑩ Starter motor
- ⑪ Starting circuit cut-off relay
- ⑫ Neutral switch
- ⑬ Sidestand switch
- ⑭ Fuel pump
- ⑮ ECU
- ⑯ Ignition coil #1
- ⑰ Ignition coil #2
- ⑱ Ignition coil #3
- ⑲ Ignition coil #4
- ⑳ Spark plug
- ㉑ Injector #1
- ㉒ Injector #2
- ㉓ Injector #3
- ㉔ Injector #4
- ㉕ Air induction system solenoid
- ㉖ Sub-throttle position sensor
- ㉗ EXUP servo motor
- ㉘ Speed sensor
- ㉙ Coolant temperature sensor
- ㉚ Intake air temperature sensor
- ㉛ Crankshaft position sensor
- ㉜ Throttle position sensor
- ㉝ Intake air pressure sensor
- ㉞ Atmospheric pressure sensor
- ㉟ Cylinder identification sensor
- ㊱ Lean angle sensor
- ㊲ Meter assembly
- ㊳ Immobilizer indicator light
- ㊴ Fuel level warning light
- ㊵ Oil level warning light
- ㊶ Neutral indicator light
- ㊷ Tacho meter
- ㊸ Shift timing indicator light
- ㊹ Multi function meter
- ㊺ Engine trouble warning light
- ㊻ Coolant temperature indicator light
- ㊼ Hi beam indicator light
- ㊽ Turn signal indicator light (left)
- ㊾ Turn signal indicator light (right)
- ㊿ Meter light
- ① Oil level switch
- ② Right handlebar switch
- ③ Front brake light switch

- ④ Engine stop switch
- ⑤ Start switch
- ⑥ Turn signal relay
- ⑦ Left handlebar switch
- ⑧ Hazard switch
- ⑨ Pass switch
- ⑩ Dimmer switch
- ⑪ Horn switch
- ⑫ Clutch switch
- ⑬ Turn signal switch
- ⑭ Horn
- ⑮ Front turn signal light (left)
- ⑯ Front turn signal light (right)
- ⑰ Rear turn signal light (left)
- ⑱ Rear turn signal light (right)
- ⑲ Headlight
- ⑳ Auxiliary light
- ㉑ License light
- ㉒ Rear brake light switch
- ㉓ Tail/brake light
- ㉔ Headlight relay (on/off)
- ㉕ Headlight relay (dimmer)
- ㉖ Fuse (ignition)
- ㉗ Fuse (turn)
- ㉘ Fuse (signal)
- ㉙ Fuse (headlight)
- ㉚ Anti safety alarm
- ㉛ Radiator fan motor relay
- ㉜ Fuse (radiator fan motor left)
- ㉝ Fuse (radiator fan motor right)
- ㉞ Radiator fan motor 2
- ㉟ Radiator fan motor 1
- ① Ground

## 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/B . . .	Gray/Black
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/R . . . .	Yellow/Red
Y/W . . . .	Yellow/White





YAMAHA MOTOR CO., LTD.

2500 SHINGAI IWATA SHIZUOKA JAPAN

