YAMAHA 2002

FZS600(P)

5DM1-AE3

SUPPLEMENTARY SERVICE MANUAL

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and data for the FZS600 (P) 2002. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

FZS600 SERVICE MANUAL: 5DM1-AE1
FZS600 SUPPLEMENTARY SERVICE MANUAL: 5DM1-AE2

FZS600 (P) 2002
SUPPLEMENTARY
SERVICE MANUAL

First Edition, August 2001

EB001000

NOTICE

This manual was produced by the Yamaha Motor Company 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, so it is assumed that anyone who uses this book to perform maintenance and repairs on Yamaha motorcycle has a basic understanding of the mechanical ideas and the procedures of motorcycle repair. Repairs attempted by anyone without this knowledge are likely to render the motorcycle unsafe and unfit for use.

Yamaha Motor Company, Ltd. is continually striving to improve all 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 INFORMATION

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

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

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

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

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

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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 inspection 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” on the following page.

② Each chapter is divided into sections. The current section title is shown at the top of each page, except in Chapter 3 (“Periodic Inspections and Adjustments”), where the sub-section title (-s) appear.

(In Chapter 3, “Periodic Inspections and Adjustments”, the sub-section title appears at the top of each page, instead of the section title.)

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

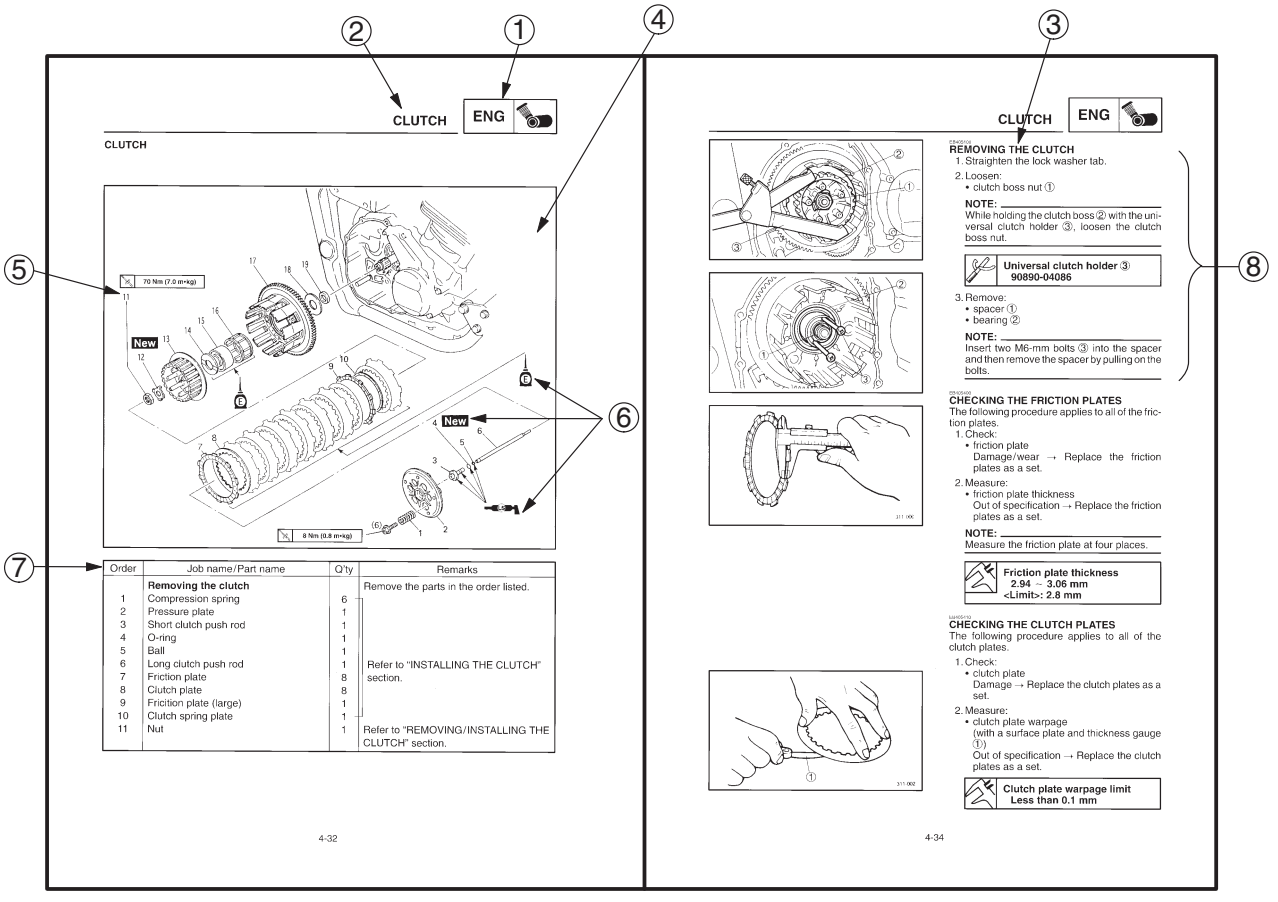
④ To help identify parts and clarify procedure steps, there are exploded diagrams at the start of each removal and disassembly section.

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

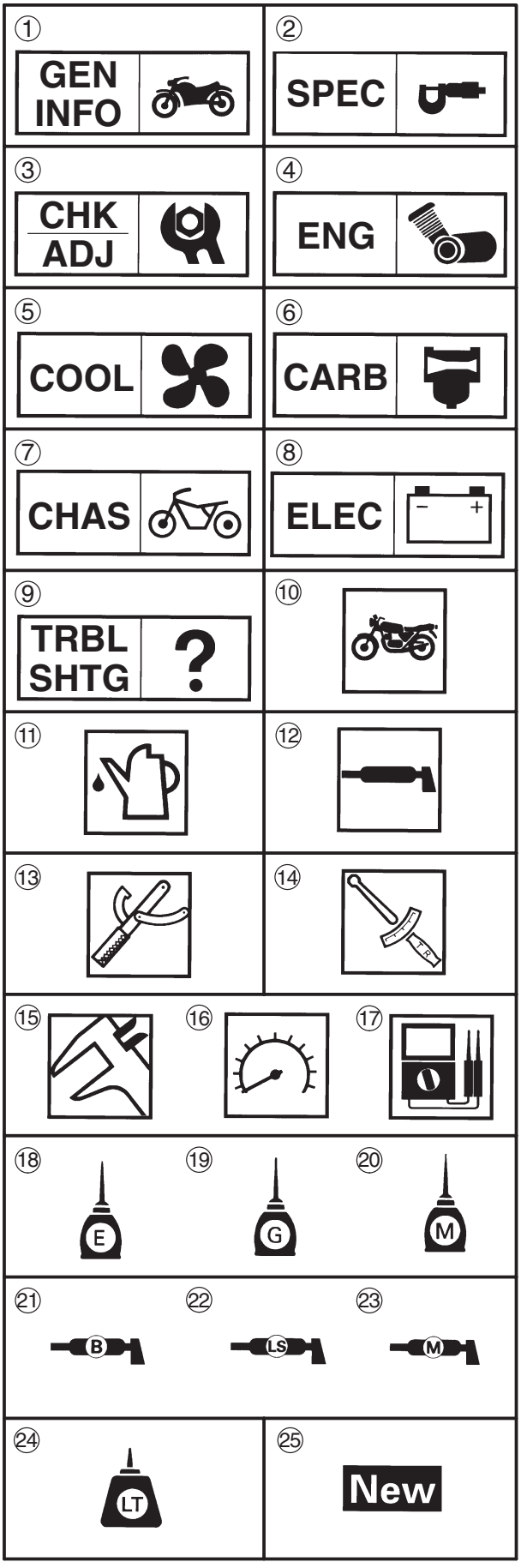
⑥ Symbols indicate parts to be lubricated or replaced (see “SYMBOLS”).

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.



Order	Job name/Part name	Q'ty	Remarks
	Removing the clutch		Remove the parts in the order listed.
1	Compression spring	6	
2	Pressure plate	1	
3	Short clutch push rod	1	
4	O-ring	1	
5	Ball	1	
6	Long clutch push rod	1	Refer to “INSTALLING THE CLUTCH” section.
7	Friction plate	8	
8	Clutch plate	8	
9	Friction plate (large)	1	
10	Clutch spring plate	1	
11	Nut	1	Refer to “REMOVING/INSTALLING THE CLUTCH” section.



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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 Engine
⑤ Cooling system
⑥ Carburetor(-s)
⑦ Chassis
⑧ Electrical system
⑨ Troubleshooting

Symbols ⑩ to ⑰ indicate the following.

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

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

⑱ Apply engine oil
⑲ Apply gear oil
⑳ Apply molybdenum disulfide oil
㉑ Apply wheel bearing grease
㉒ Apply lightweight lithium-soap base grease
㉓ Apply molybdenum disulfide grease

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

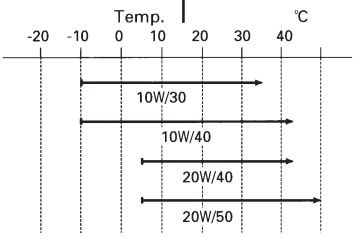
㉔ Apply locking agent (LOCTITE®)
㉕ Use new one

CONTENTS

ELECTRICAL SYSTEM

SPECIFICATIONS

GENERAL SPECIFICATIONS

Model		FZS600
Model code:		5RT1 5RT2 5RT3
Dimensions:		
Overall length		2,080 mm (Except FIN, NOR) 2,175 mm (FIN, NOR)
Overall height		1,180 mm
Basic weight:		
With oil and full fuel tank		214 kg
Oil type or grade:		
Engine oil		 SAE20W40SE or SAE10W30SE
Periodic oil change		2.5 L
With oil filter replacement		2.7 L
Total amount		3.5 L
Fuel:		
Type		Regular unleaded gasoline
Fuel tank capacity		22 L
Fuel reserve amount		3.6 L
Tire:		
Type		Tubeless
Size	front	110/70ZR 17 M/C (54W) 110/70ZR 17 (54W)
	rear	160/60ZR 17 M/C (69W) 160/60ZR 17 (69W)
Manufacturer	front	BRIDGESTONE/DUNLOP
	rear	BRIDGESTONE/DUNLOP
Type	front	BT-57F/D207F
	rear	BT-57R/D207J
Tire pressure:		
Maximum load-except motorcycle		183 kg
Loading condition A*		0 ~ 90 kg
	front	225 kPa (2.25 kg/cm^2, 2.25 bar)
	rear	250 kPa (2.5 kg/cm^2, 2.5 bar)
Loading condition B*		90 ~ 183 kg
	front	225 kPa (2.25 kg/cm^2, 2.25 bar)
	rear	290 kPa (2.9 kg/cm^2, 2.9 bar)
High-speed riding		
	front	225 kPa (2.25 kg/cm^2, 2.25 bar)
	rear	290 kPa (2.9 kg/cm^2, 2.9 bar)

* Load is the total weight of cargo, rider, passenger, and accessories.

Model	FZS600
Bulb voltage, wattage × quantity:	
Headlight	12 V 60 W/55 W × 2
Auxiliary light	12 V 5 W × 2
Tail/brake light	12 V 5 W/21 W × 2
Front turn signal light	12 V 21 W × 2
Rear turn signal light	12 V 21 W × 2
Meter light	14 V 14 W × 3
Indicator light	
Neutral indicator light	12 V 1.4 W × 1
High beam indicator light	12 V 1.4 W × 1
Oil level warning light	12 V 1.4 W × 1
Turn signal indicator light	12 V 1.4 W × 2
Fuel level warning light	12 V 2 W × 1
Engine temperature warning light	LED

MAINTENANCE SPECIFICATIONS

ENGINE

Item		Standard	Limit
Carburetor:			
I.D. mark		5DM1 01	•••
Main jet	(M.J)	#115	•••
Main air jet	(M.A.J)	#80	•••
Jet needle	(J.N)	5D86-3/5	•••
Needle jet	(N.J)	P-0M	•••
Pilot air jet	(P.A.J.1)	#130	•••
Pilot outlet	(P.O)	0.95	•••
Pilot jet	(P.J)	#12.5	•••
Bypass 1	(B.P.1)	0.9	•••
Bypass 2	(B.P.2)	0.8	•••
Bypass 3	(B.P.3)	0.8	•••
Pilot screw	(P.S)	2-1/2	•••
Valve seat size	(V.S)	1.0	•••
Starter jet	(G.S.1)	0.6	•••
Starter jet	(G.S.2)	0.8	•••
Throttle valve size	(TH.V)	#110	•••
Fuel level	(F.L) (with special tool)	3.5 mm	•••
Engine idle speed		1,150 ~ 1,250 r/min	•••
Intake vacuum		31.7 ~ 34.3 kPa (238 ~ 257 mmHg)	•••

TIGHTENING TORQUES

ENGINE

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque		Remarks
				Nm	m•kg	
Radietor cover	Bolt	M5	2	7	0.7	

CHASSIS

Item	Standard	Limit
Drive chain:		
Type/manufacturer	50VA4/DAIDO	•••
No. of links	110	•••
Chain free play	30 ~ 45 mm	•••
Maximum ten-link section	150 mm	•••

TIGHTENING TORQUES

CHASSIS

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque		Remarks
				Nm	m•kg	
Front cowling stay	Nut	M8	2	33	3.3	

ELECTRICAL

Item	Standard	Limit
Charging system:		
Type	A.C. magneto	•••
Model/manufacturer	F4T377/MITSUBISHI	•••
Standard output	14 V 21 A at 5,000 r/min	•••
Stator coil resistance	0.28 ~ 0.34 Ω at 20°C/W-W	•••
Rectifier:		
Model/manufacture	SH650C-11/SHINDENGEN	•••
Capacity	18 A	•••
Withstand voltage	200 V	•••
Fuel gauge:		
Model/manufacture	5RT/NIPPON SEIKI	•••
Sender unit resistance -full	4 ~ 10 Ω	•••
-empty	122.5 ~ 128.5 Ω	•••
Amperage for individual circuit:		
Main	30 A	•••
Headlight	20 A	•••
Signal	10 A	•••
Ignition	20 A	•••
Fan	10 A	•••
Back up	10 A	•••
Reserve	30 A	•••
	20 A	•••
	10 A	•••
Thermo unit:		
Model/manufacture	5JJ/NIPPON THERMOSTAT	•••
Resistance	3413 ~ 4007 Ω at 80°C	•••
	1645 ~ 1855 Ω at 105°C	•••

LUBRICATION POINT AND LUBRICATION TYPES

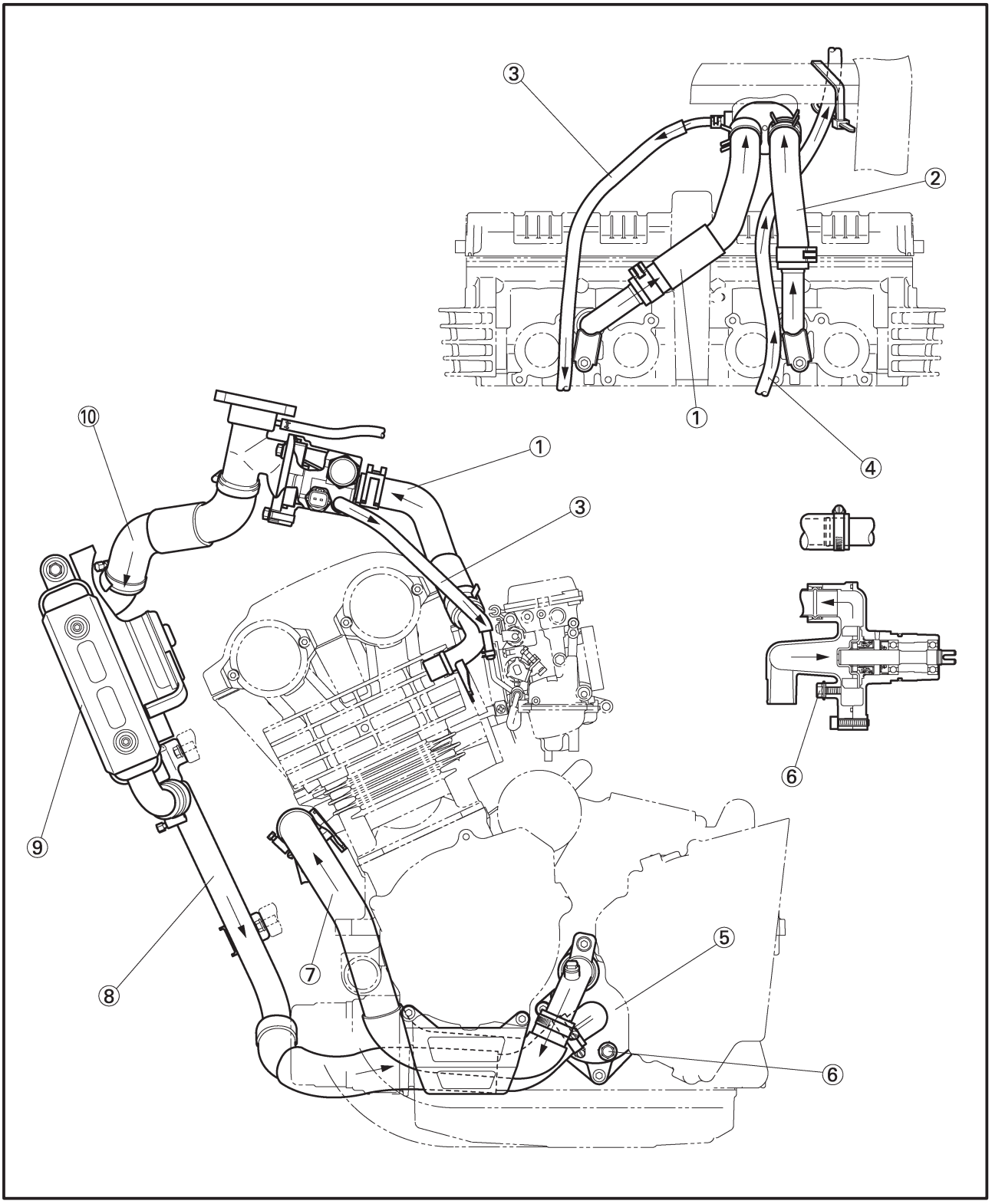
ENGINE

Lubrication Point	Symbol
Cylinder head tightening nut washer	E

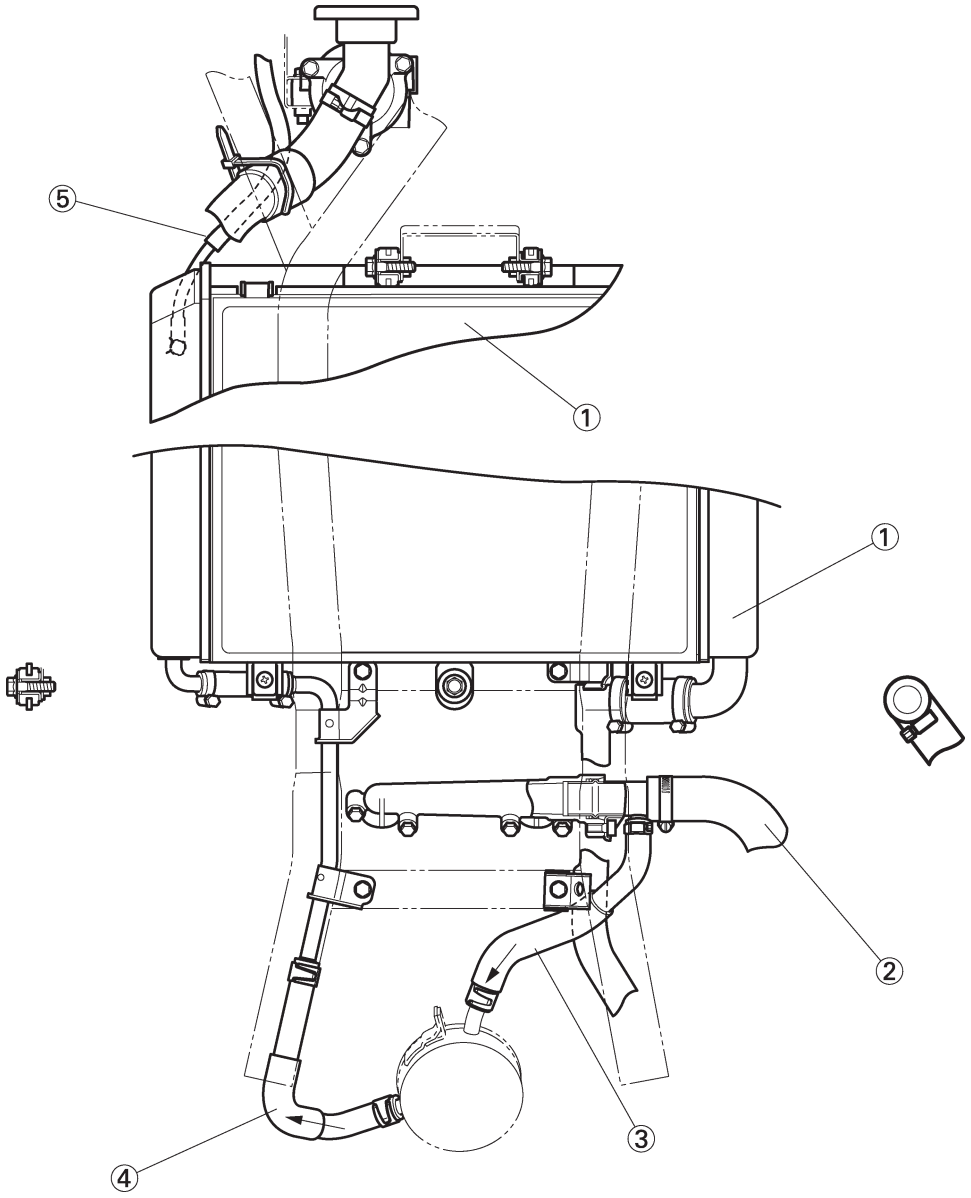
EB203000

COOLING SYSTEM DIAGRAMS

① Engine outlet hose
② Engine outlet hose
③ Carburetor inlet hose
④ Carburetor outlet hose
⑤ Water pump
⑥ Coolant drain bolt
⑦ Water pump outlet hose
⑧ Radiator outlet hose
⑨ Radiator
⑩ Radiator inlet hose



① Radiator
② Water pump outlet hose
③ Oil cooler inlet hose
④ Oil cooler outlet hose
⑤ Carburetor outlet hose



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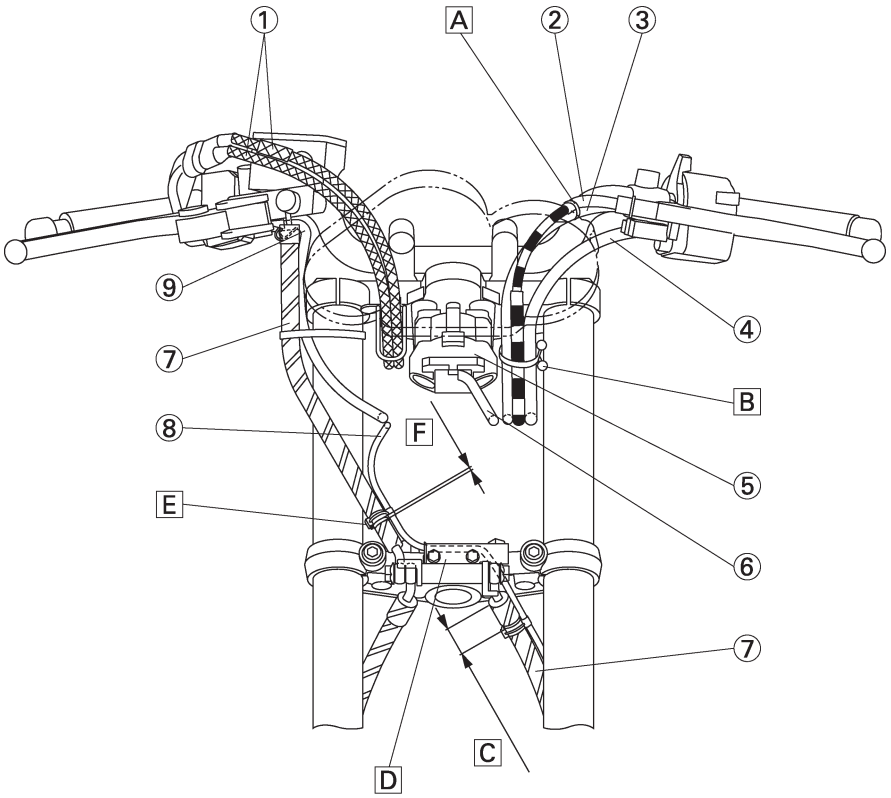
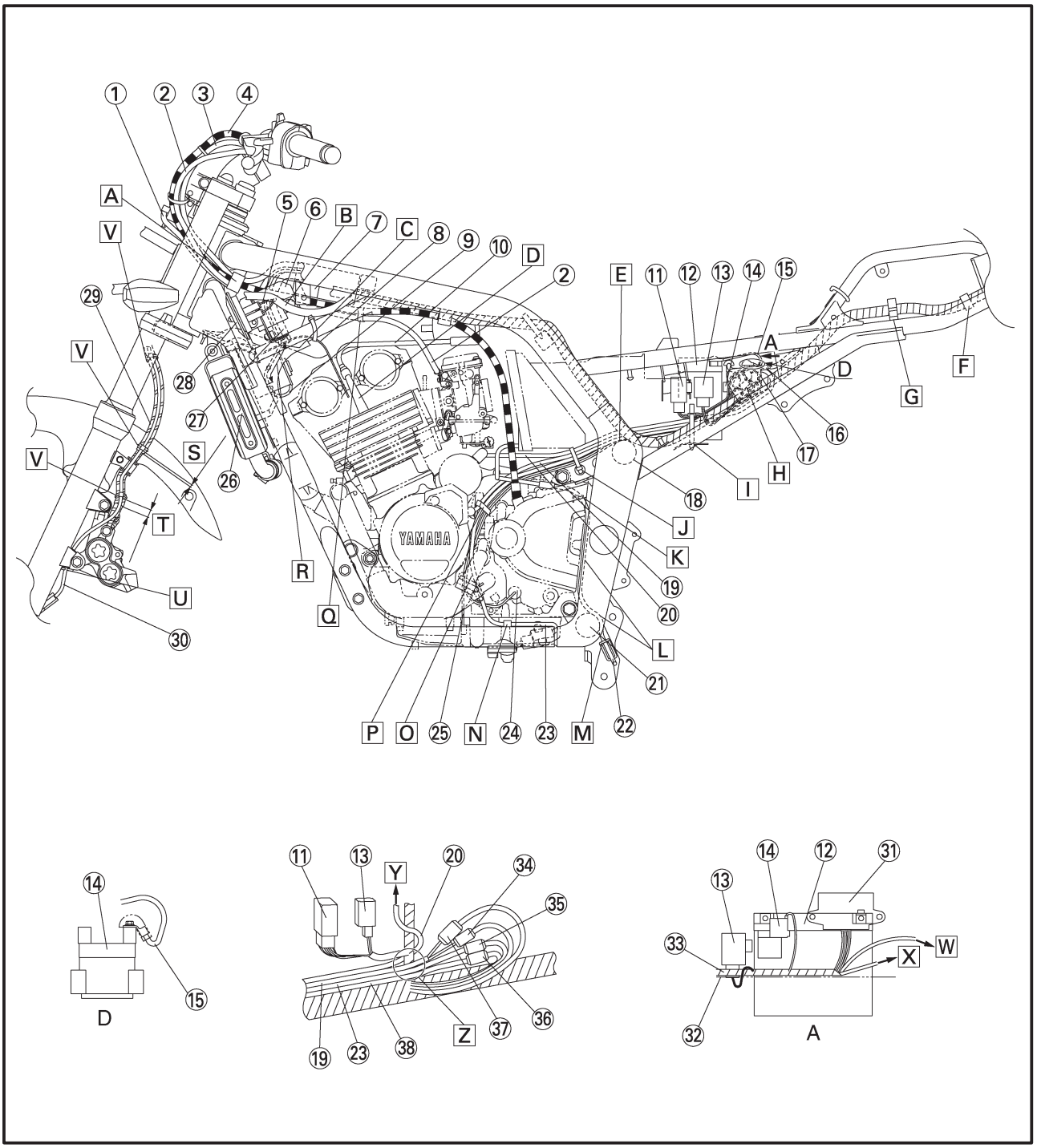
CABLE ROUTING

① Throttle cables
② Clutch cable
③ Left handlebar switch lead
④ Starter cable
⑤ Main switch
⑥ Main switch lead
⑦ Brake hose
⑧ Speed sensor lead
⑨ Right handlebar switch lead

A Using clamp, left handlebar switch lead to crimpled part of clutch cable fitting. After clamping, cut excessive portion from tip.
B Using clamp, bundle:
• Left handlebar switch lead
• Clutch cable
• Starter cable
C 30 mm or less from the top of protector.
D Pass speed sensor lead through clamp code 1.
E Fix speed sensor lead with clamp so that brake hose is on the outside of frame. Clamp the speed sensor lead after clampipng at 3 lower positions so that it can not became slack.
F 10 mm or less from the bottom of protector.



① Main switch lead
② Starter cable
③ Left handlebar switch lead
④ Clutch cable
⑤ Horn lead
⑥ Rectifier/regulator
⑦ Box
⑧ Air guide
⑨ Radiator fan motor lead
⑩ Spark plug lead 1
⑪ Starting circuit cut-off relay
⑫ Battery
⑬ Turn signal relay
⑭ Starter relay
⑮ Battery positive lead
⑯ Seat lock cable
⑰ Seat lock stay
⑱ Cross tube 3
⑲ A.C. magneto lead
⑳ Starter motor lead
㉑ Cross tube
㉒ Air filter case drain hose
㉓ Sidestand switch lead
㉔ Neutral switch
㉕ Oil level switch lead
㉖ Radiator
㉗ Rectifier/regulator lead
㉘ Horn
㉙ Brake hose
㉚ Speed sensor lead
㉛ Fuse box
㉜ Rear fender
㉝ Wire harness
㉞ Pickup coil lead coupler
㉟ Sidestand switch lead coupler
㊱ Oil level/neutral switch lead coupler
㊲ A.C. magneto lead coupler
㊳ Oil level/neutral switch lead



[A] Using clamp, fix:
- Left handlebar switch lead
- Main switch lead
- Clutch cable
- Starter cable

In so doing, locate main switch lead innermost.

[B] To headlight sub-wire harness

[C] Radiator fan motor lead, pass this lead through hole in air guide and then into box.

[D] Install plug cap so that spark plug lead face toward inside of vehicle.

[E] Wire harness, starter motor lead, A.C. magneto lead, sidestand switch lead and neutral switch lead pass the over cross tube 3.

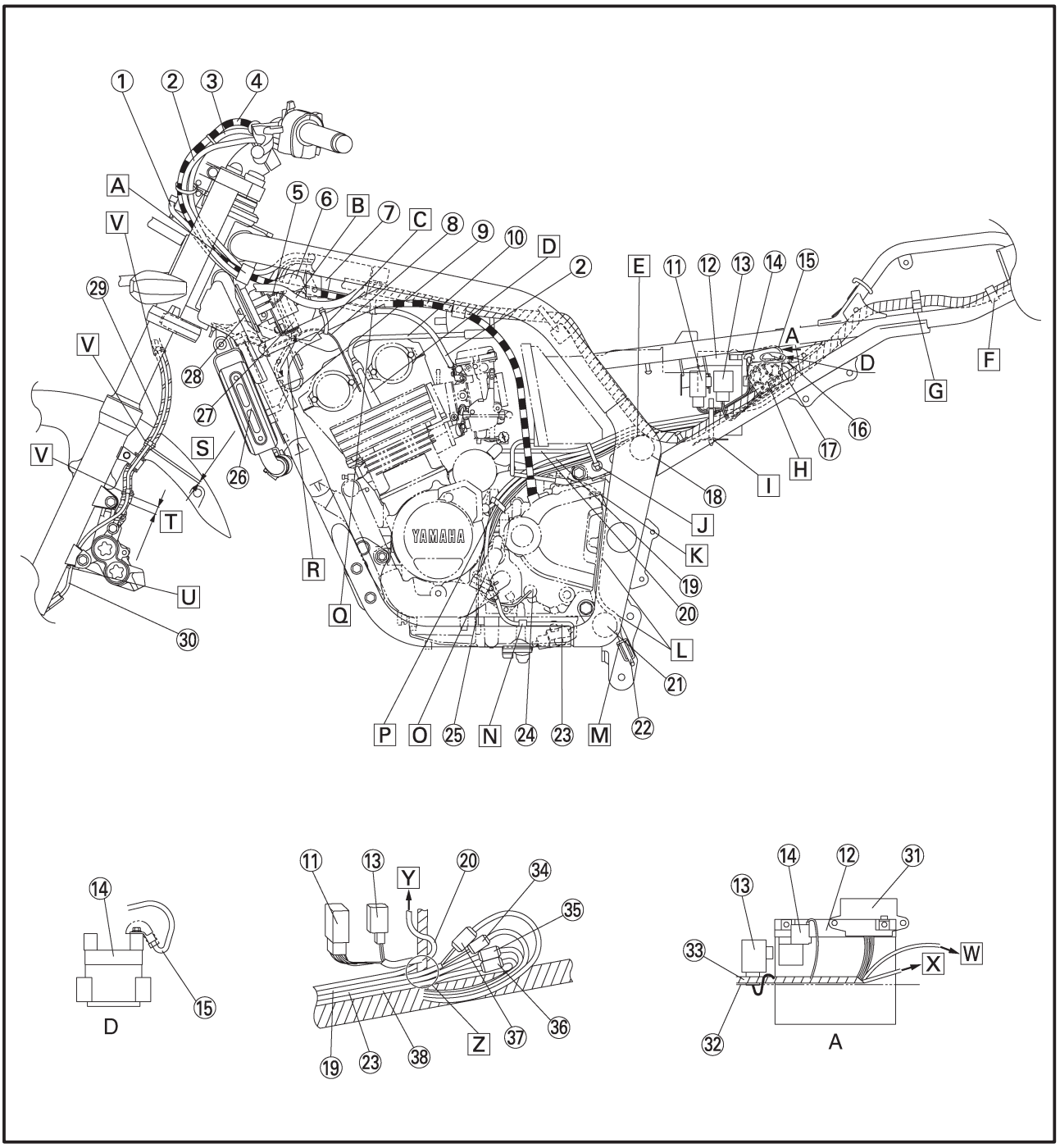
[F] Using clamp, fix wire harness to the frame.

[G] Using clamp, fix wire harness to the frame.

[H] After connecting coupler, push then on the inside of lock stay on the frame.

[I] Using clamp, fix to bracket on the frame:
- Wire harness (at white taping)
- Starter motor lead
- A.C. magneto lead
- Sidestand switch lead
- Oil level switch lead
- Neutral switch lead

Locate wire harness outermost. Locate clamp with its tip outward of frame so that it does not protrude through clearance between side cover and frame.



[J] Using clamp, fix to bracket on frame:
- Stater motor lead
- Sidestand switch lead
- Oil level switch lead
- Neutral switch lead

Locate wire harness outermost. Locate clamp with its tip downward and cut off excessive length.

[K] Pass air filter drain hose through clamp on engine.

[L] Air filter case drain hose in front of swingarm pivot shaft and in rear of cross tube.

[M] Pass air filter case drain hose through the rear suspension bracket holder and out on left side of vehicle.

[N] Using clamp, fix sidestand switch lead to frame.

[O] Pass sidestand switch lead behind water pipe.

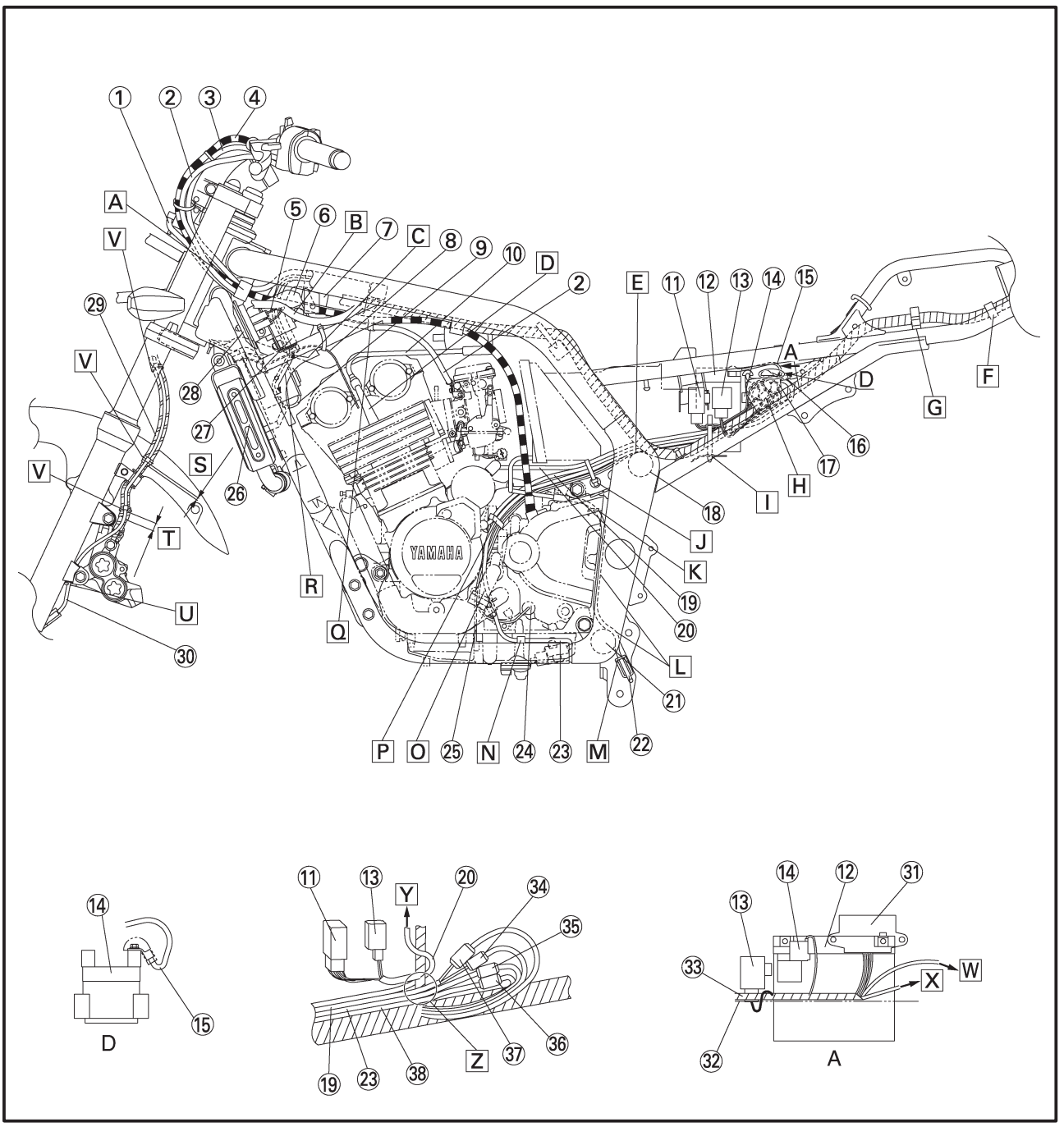
[P] Using clamp on engine, fix:
- A.C. magneto lead
- Sidestand switch lead
- Oil level switch lead
- Neutral switch lead

[Q] Pass on the outside of spark plug lead 1
- Clutch cable
- Starter cable

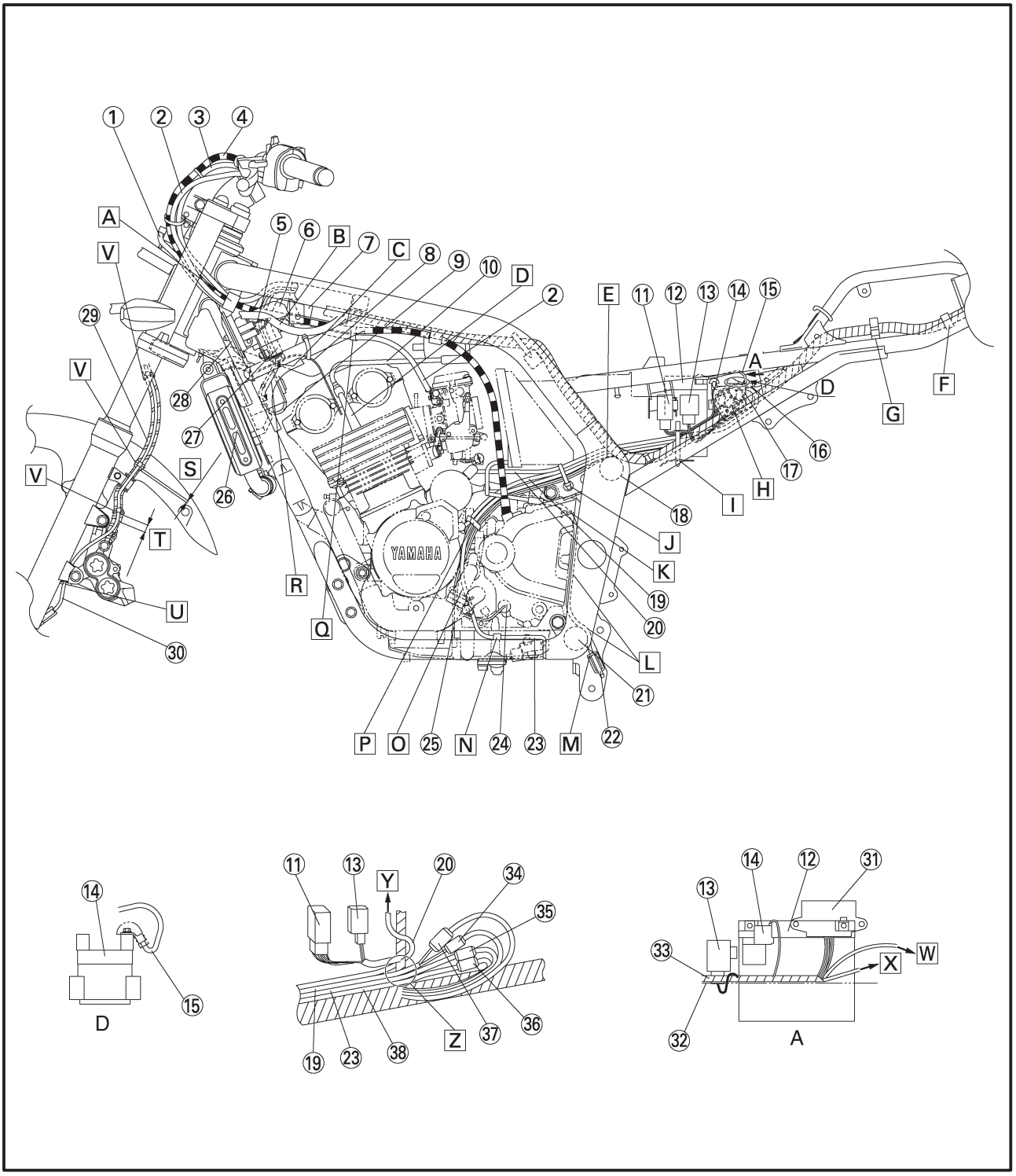
[R] Radiator fan motor lead shall permit no slack in this range.

[S] 10 mm or less from the bottom of protector.

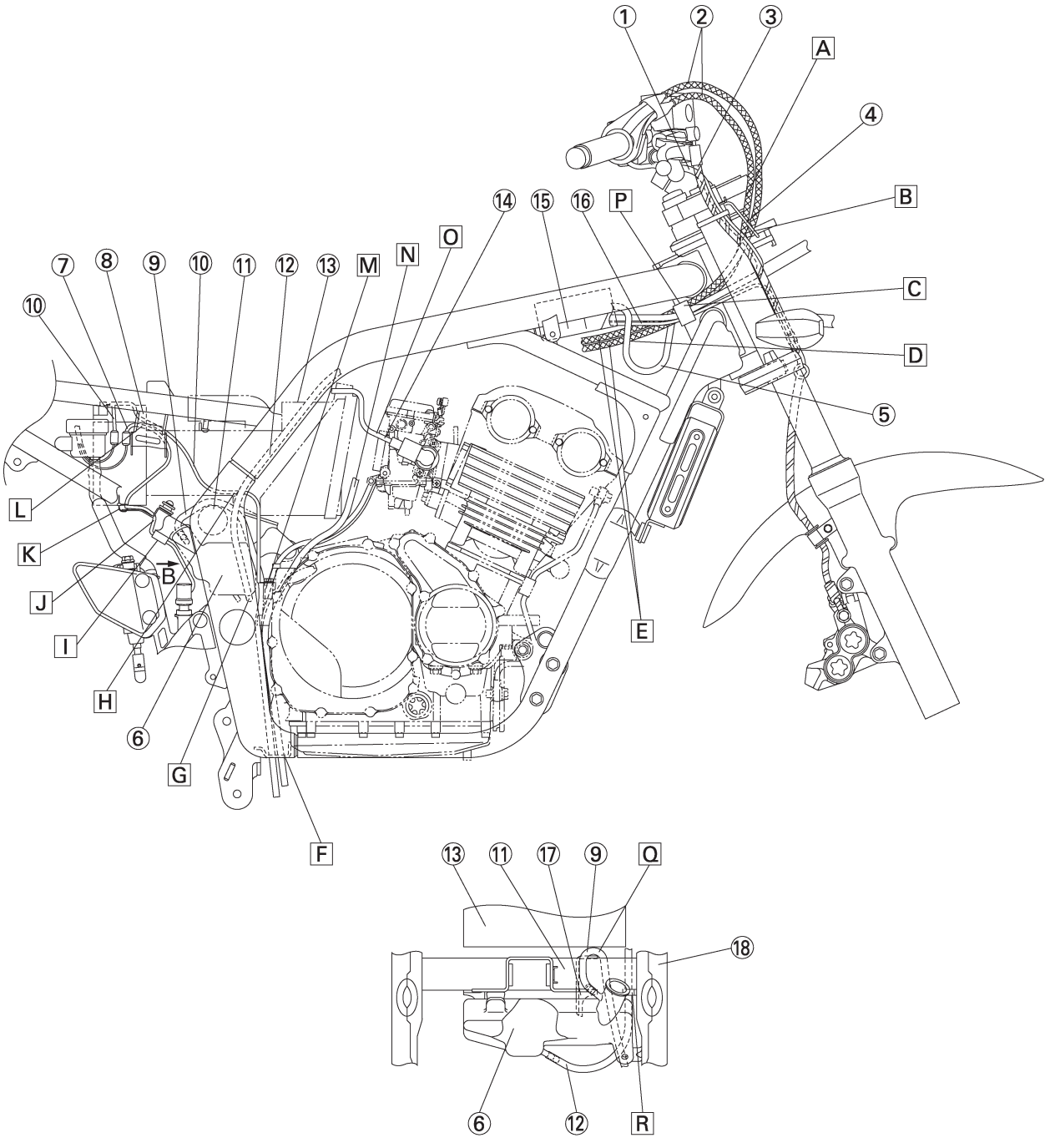
[T] 10 mm or less from the bottom of protector.



U Using holder, fix speed sensor lead to outer tube.
V Pass speed sensor lead along brake hose on the outside of frame and fix it with clamp (at 3 positions).
W To stop switch
X To battery negative lead
Y To starter relay
Z Pass only starter motor lead behind wire harness branch.



① Right handlebar switch lead
② Throttle cables
③ Brake hose
④ Cable guide
⑤ Main switch lead
⑥ Radiator reservoir tank
⑦ Rear brake light switch lead
⑧ Battery
⑨ Radiator reservoir tank breather hose
⑩ Battery negative lead
⑪ Cross tube 3
⑫ Radiator reservoir tank breather hose
⑬ Air filter
⑭ Throttle position sensor lead
⑮ Box
⑯ Speed sensor lead
⑰ Engine bracket 3
⑱ Swingarm bracket



B

A Using clamp, fix to the front fork:
- Right handlebar switch lead
- Brake hose

Locate clamp with its head inward of frame.

B Pass throttle cables through guide.
Throttle cable installed to upper bracket.

C With its pulling side on top. Pass throttle cable innermost of clamp.

D Pass main switch lead under:
- Throttle cable (2 pcs)
- Right handlebar switch lead
- Speed sensor lead

And them into box at right side. In so doing, give leads some slack.

E Pass throttle cable under box.

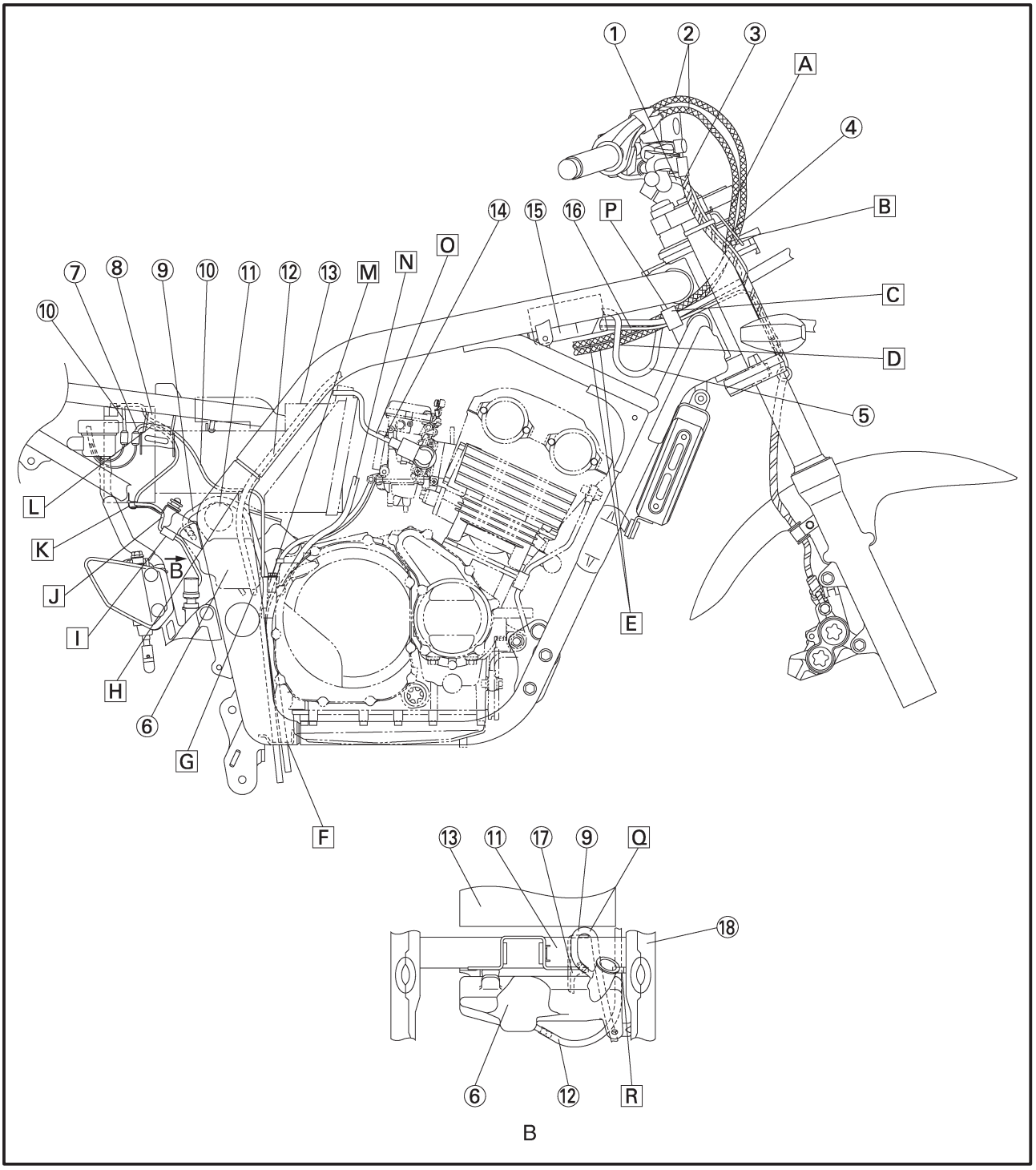
F Pass through holder on frame:
- Radiator reservoir tank breather hose
- Fuel tank breather hose

G To reservoir tank

H Pass battery negative lead on the inside of radiator reservoir tank breather hose.

I Using clamp, fix stop switch lead to frame. Locate clamp with its latch outward of frame.

J Pass on the inside of side cover insertion position.

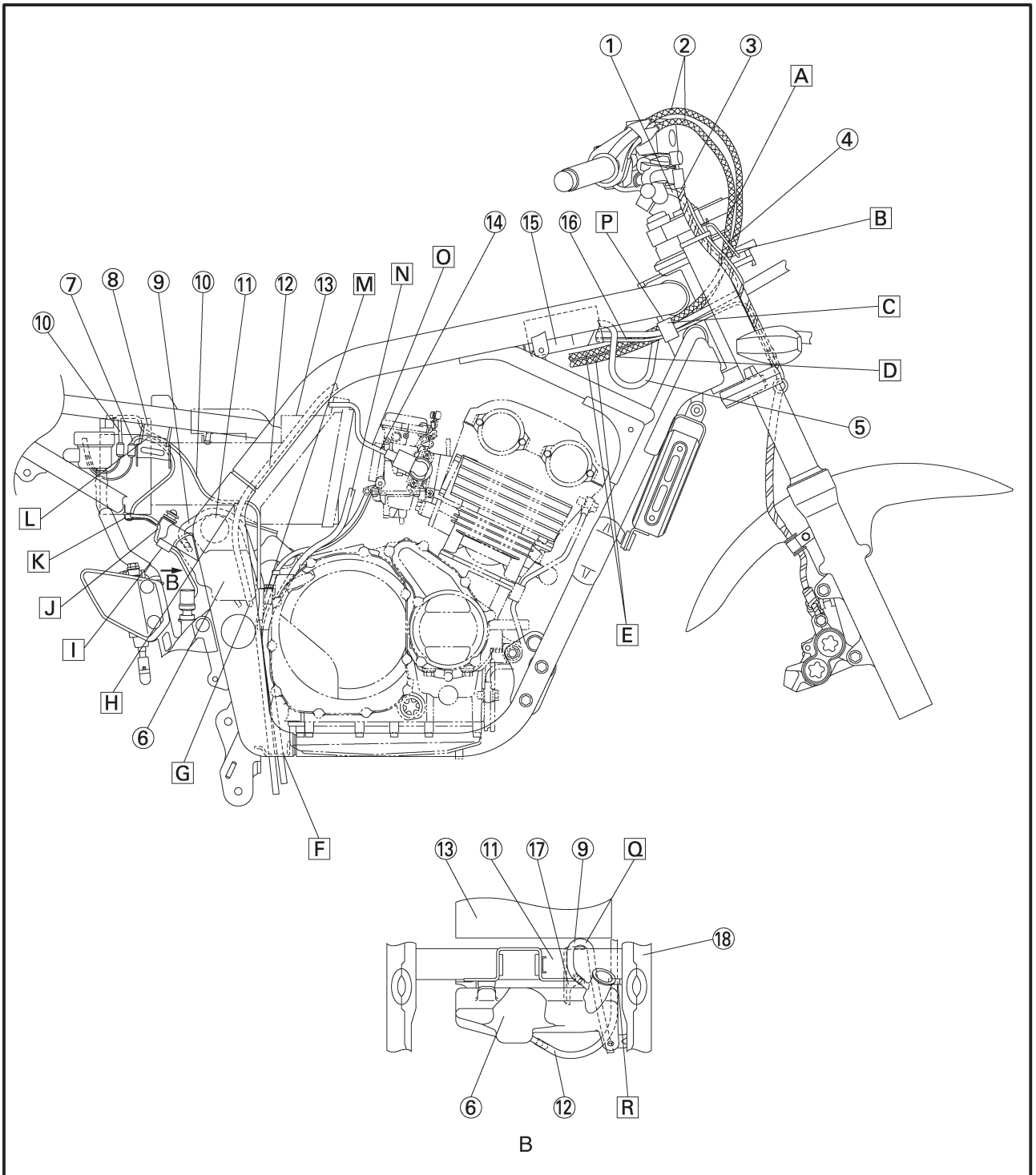


B

[K] Pass through hole in bracket battery and clamp rear brake light switch lead.
[L] Pass on the inside of air filter bracket, on frame:
- Battery negative lead
- Brake light switch lead

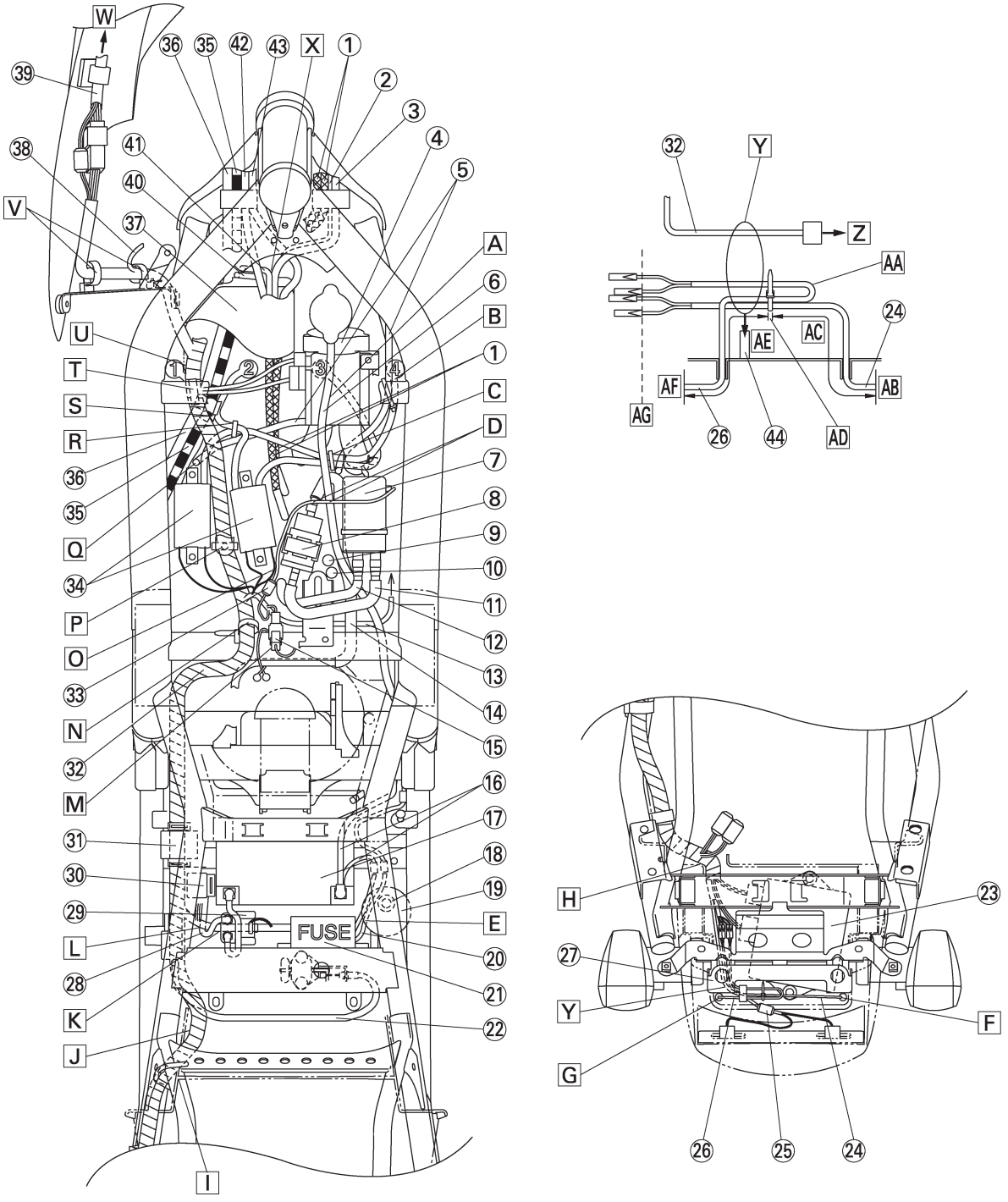
[M] Pass between swingarm head pipe and engine crankcase:
- Fuel tank drain hose
- Fuel tank breather hose
- Radiator reservoir tank breathe hose

[N] Fuel tank drain hose install so that it is not bent or slack.
[O] After passing throttle position sensor lead as shown, install cover 2 to air filter.
[P] Fix throttle cables, right handlebar switch lead and speed sensor lead to the frame with a clamp.
[Q] Pass radiator reservoir tank breather hose between air filter and cross tube 3, and on the outside of the engine bracket 3.
[R] Fix radiator reservoir tank breathe hose to swingarm bracket on frame with a clamp.

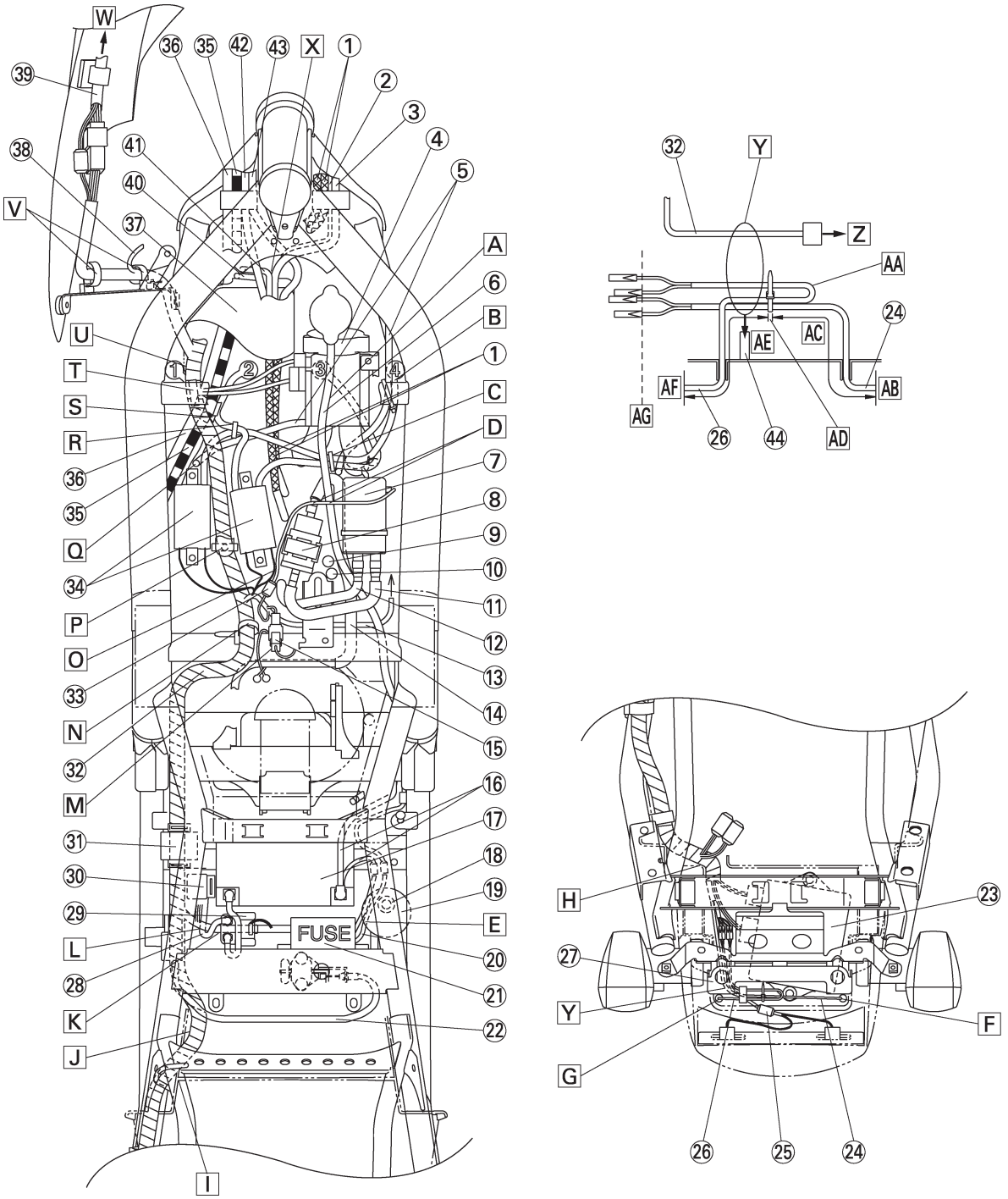


B

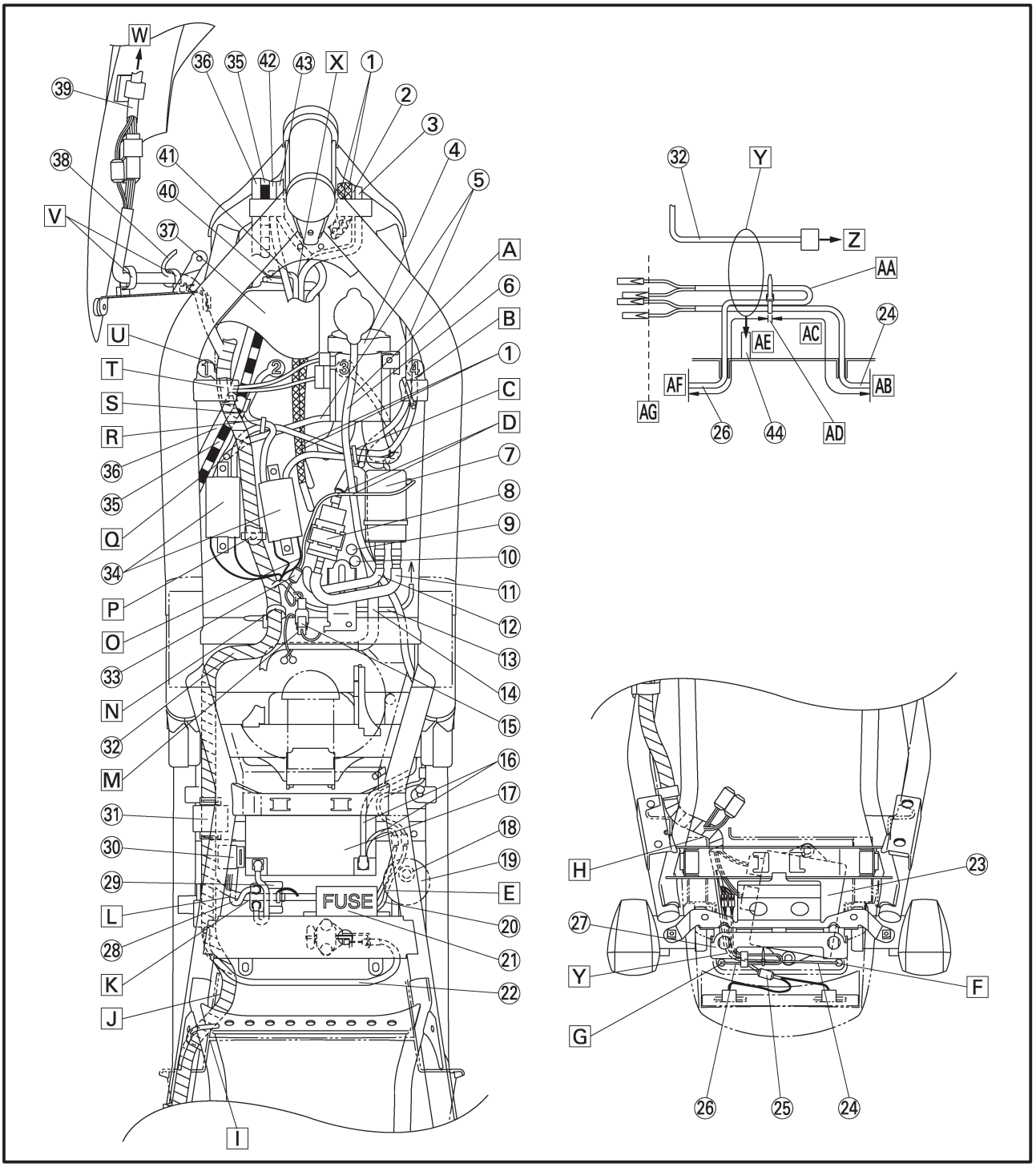
① Throttle cables
② Speed sensor lead
③ Right handlebar switch lead
④ Thermostat housing
⑤ Carburetor heater hot water hose
⑥ Radiator reservoir tank breather hose
⑦ Fuel pump
⑧ Fuel filter
⑨ Fuel tank breather hose
⑩ Fuel tank drain hose
⑪ Pipe 2
⑫ Fuel hose
⑬ Throttle position sensor lead
⑭ Fuel pipe
⑮ Fuel sender coupler
⑯ Battery negative lead
⑰ Battery
⑱ Rear brake reservoir tank hose
⑲ Rear brake reservoir tank
⑳ Rear brake right switch lead
㉑ Fuse box
㉒ Seat lock cable
㉓ Ignitor unit
㉔ Rear turn signal light lead (right)
㉕ Tail/brake light lead
㉖ Rear turn signal light lead (left)
㉗ Tail/brake light bracket
㉘ Starter motor lead



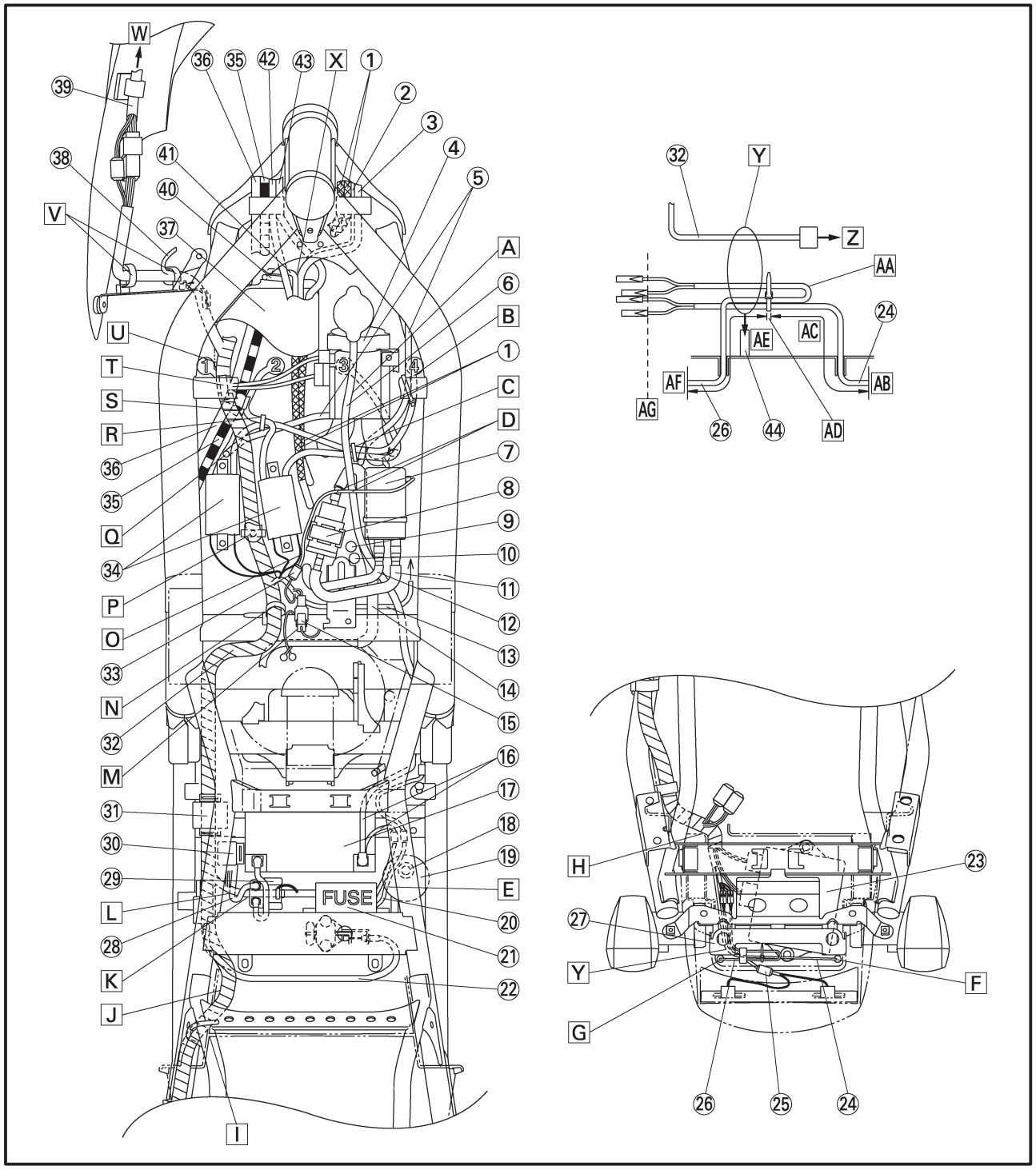
㉙ Starter relay
㉚ Turn signal relay
㉛ Starting circuit cut-off relay
㉜ Wire harness
㉝ Fuel pump lead coupler
㉞ Ignition coil
㉟ Clutch cable
㊱ Starter cable
㊲ Box
㊳ Horn lead
㊴ Headlight sub-wire harness
㊵ Radiator fan motor lead
㊶ Rectifier/regulator lead
㊷ Left handlebar switch lead
㊸ Main switch lead
㊹ Clamp



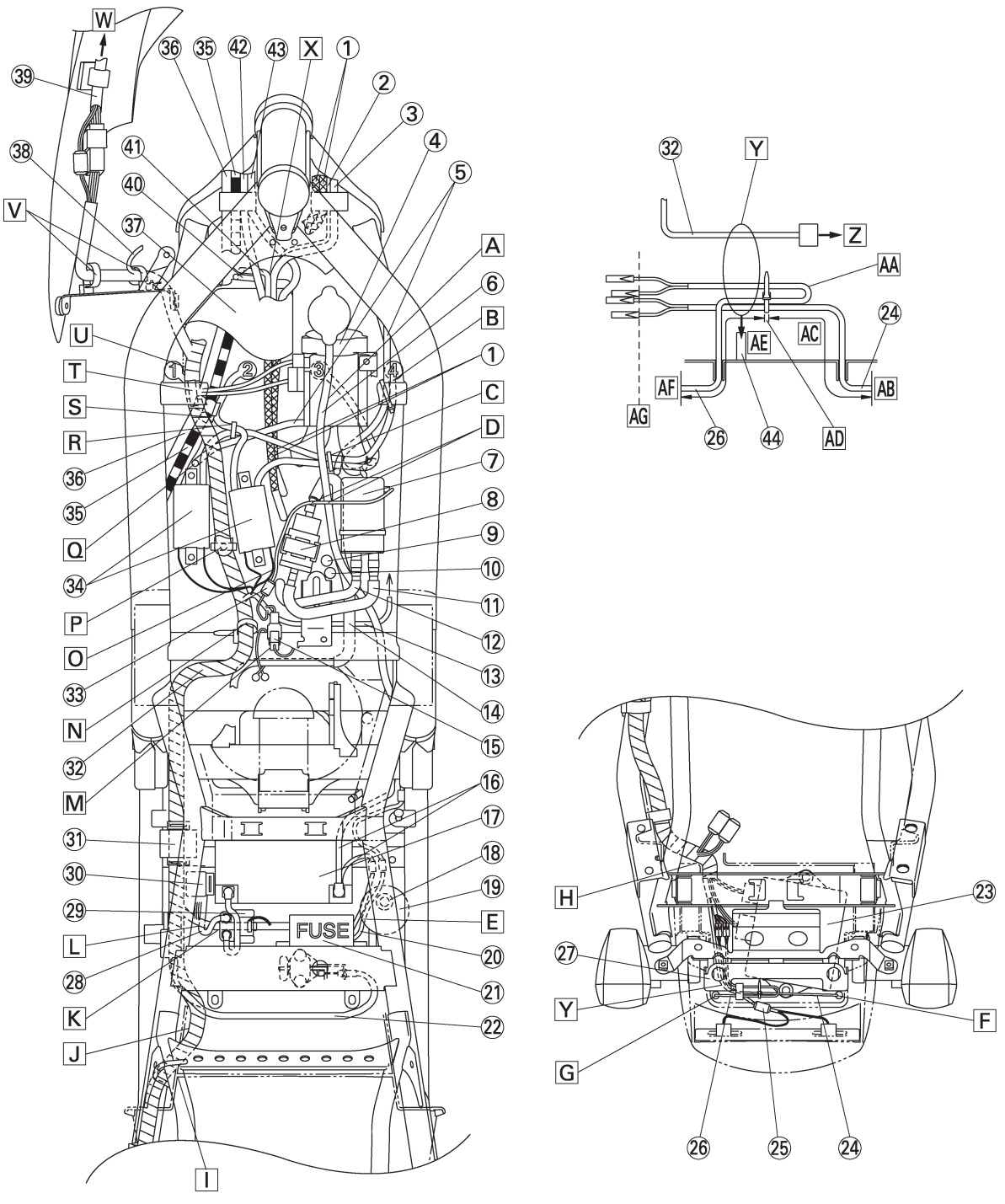
A Pass radiator reservoir tank breather hose at left side of thermostat housing.
B Do not fix #4 spark plug lead with a band.
C Using clamp, fix #3 and #4 spark plug lead and pass them under radiator reservoir tank breather hose, over the throttle cable, back of radiator hose and outside hot water hose for carburetor heater.
D Place fuel pump lead so that it comes on top.
E Pass brake light switch lead and battery negative lead under radiator reservoir tank, and between radiator reservoir hose and battery, and connect them at right side of battery.
F Pass rear turn signal light lead (right) through hole in rear fender.
G Pass rear turn signal light lead (left) through hole in rear fender.
H Pass the wire harness through cut in rear fender.
I Do not allow wire harness to ride over rear fender rib.



[J] Pass wire harness on the inside of vehicle from rear fender rib.
[K] Pass wire harness under starter relay.
[L] Pass starter motor lead under branched harness and put it upward.
[M] Fit fuel sender coupler onto cross pipe on frame.
[N] Using clamp, fix wire harness to cross pipe on frame. Locate clamp tip forward of vehicle.
[O] Pass fuel pump lead between ignition coil and filter, and push it downward.
[P] Using clamp, fix wire harness to the stay.
[Q] Pass under #2 and #4 spark plug leads for layout.
[R] Using clamp, fix clutch cable and starter cable.
[S] Using clamp, fix #2 and #4 spark plug leads.
[T] Fit clamp fastened to wire harness onto T-stud on frame.
[U] Pass wire harenss through cut in box rear and connect it inside box.
[V] Using clamp, fix wire harness to bracket (at 2 positions)



[W] To headlight lead
[X] Pass rectifier/regulator lead, radiator fan motor lead, left handlebar switch lead, main switch lead, right handlebar switch lead and speed sensor lead through cut in box front and connect them inside box.
[Y] Using clamp, fix wire harness after making sure to pass it under taillight bracket.
[Z] To taillight
[AA] Bend
[AB] Into turn signal light
[AC] No slack is permitted.
[AD] Clamp rear turn signal light leads (L and R) without slack.
[AE] Mate turn signal light reads (L and R) at coupler position, bend them and clamp them together with wire harness.
[AF] Into turn signal light
[AG] Mate at coupler position.



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/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	*	**Fuel filter**	• Check condition.			√		√	
3		**Spark plugs**	• Check condition. • Clean and regap.		√		√		
			• Replace.			√		√	
4	*	**Valves**	• Check valve clearance. • Adjust	Every 40,000 km					
5		**Air filter element**	• Clean.		√		√		
			• Replace.			√		√	
6		**Clutch**	• Check operation. • Adjust	√	√	√	√	√	
7	*	**Front brake**	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	√
			• Replace brake pads.	Whenever worn to the limit					
8	*	**Rear brake**	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	√
			• Replace brake pads.	Whenever worn to the limit					
9	*	**Brake hoses**	• Check for cracks or damage.		√	√	√	√	√
			• Replace.	Every 4 years					
10	*	**Wheels**	• Check runout and for damage.		√	√	√	√	
11	*	**Tires**	• Check tread depth and for damage. • Replace if necessary. • Check air pressure. • Correct if necessary.		√	√	√	√	√
12	*	**Wheel bearings**	• Check bearing for looseness or damage.		√	√	√	√	
13	*	**Swingarm**	• Check operation and for excessive play.		√	√	√	√	
			• Lubricate with lithium-soap-based grease.	Every 50,000 km					
14		**Drive chain**	• Check chain slack. • Make sure that the rear wheel is properly aligned. • Clean and lubricate.	Every 1,000 km and after washing the motorcycle or riding in the rain					
15	*	**Steering bearings**	• Check bearing play and steering for roughness.	√	√	√	√	√	
			• Lubricate with lithium-soap-based grease.	Every 20,000 km					

PERIODIC MAINTENANCE/LUBRICATION INTERVALS

CHK ADJ

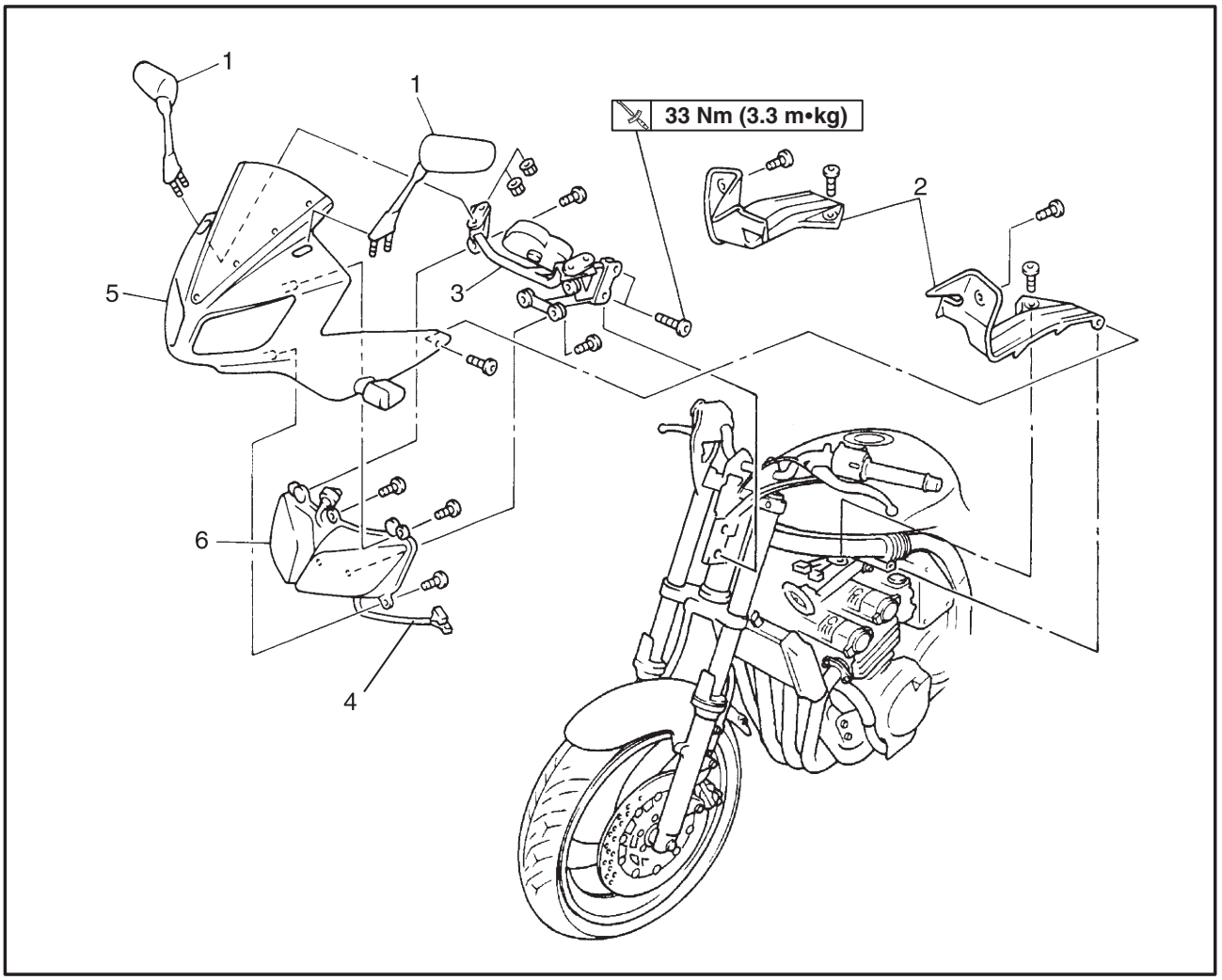
NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING (× 1,000 km)					ANNUAL CHECK
				1	10	20	30	40	
16	*	**Chassis fasteners**	• Make sure that all nuts, bolts and screws are properly tightened.		√	√	√	√	√
17		**Sidestand, centerstand**	• Check operation. • Lubricate.		√	√	√	√	√
18	*	**Sidestand switch**	• Check operation.	√	√	√	√	√	√
19	*	**Front fork**	• Check operation and for oil leakage.		√	√	√	√	
20	*	**Shock absorber assembly**	• Check operation and shock absorber for oil leakage.		√	√	√	√	
21	*	**Rear suspension relay arm and connecting arm pivoting points**	• Check operation.		√	√	√	√	
			• Lubricate with lithium-soap-based grease.			√		√	
22	*	**Carburetors**	• Check starter (choke) operation. • 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	*	**Lights, signals and switches**	• Check operation. • Adjust headlight beam.	√	√	√	√	√	√

NOTE:

- The air filter needs more frequent service if you are riding in unusually wet or 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.

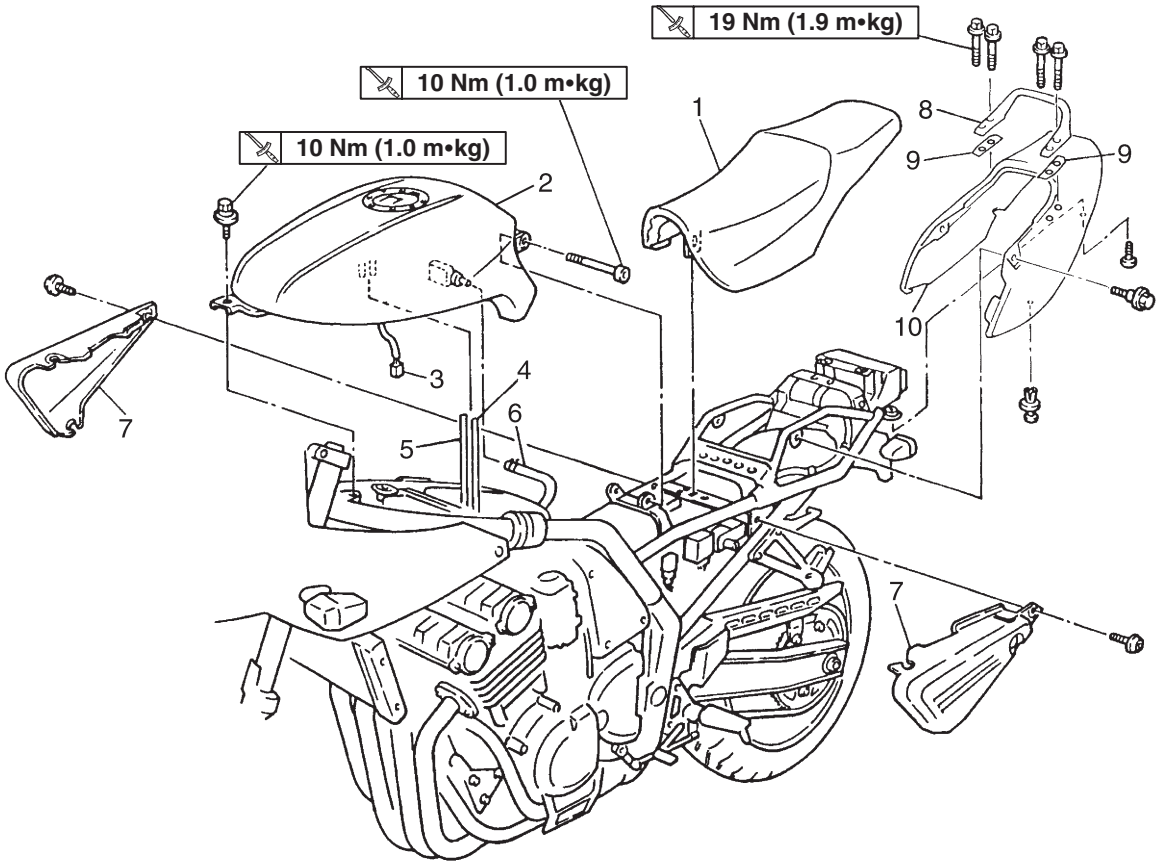
FRONT COWLING/SEAT/SIDE COVER/FUEL TANK

FRONT COWLING

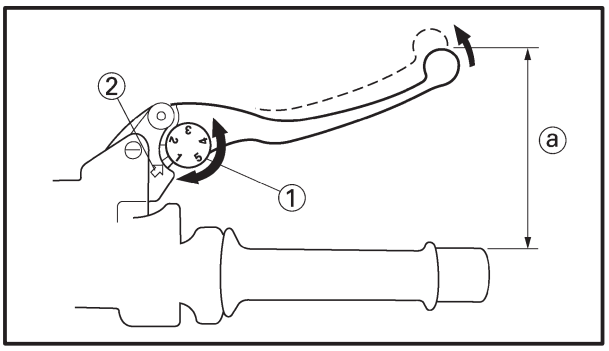


Order	Job name/Part name	Q'ty	Remarks
	Removing the front cowling		Remove the parts in the order listed.
1	Rear view mirror (left/right)	1/1	
2	Inner panel (left/right)	1/1	
3	Cowling stay	1	**NOTE:**
4	Headlight sub-harness	1	Disconnect the couplers.
5	Front cowling	1	
6	Headlight assembly	1	
			For installation, reverse the removal procedure.

SEAT, SIDE COVER AND FUEL TANK



Order	Job name/Part name	Q'ty	Remarks
	Removing the seat, side cover and fuel tank		Remove the parts in the order listed.
1	Seat	1	
2	Fuel tank	1	**NOTE:**
3	Fuel sender lead coupler	1	Disconnect the couplers.
4	Fuel tank breather hose	1	
5	Fuel tank drain hose	1	
6	Fuel hose	1	
7	Side cover (left/right)	1/1	
8	Grab bar	1	
9	Plate	2	
10	Rear cowling	1	
			For installation, reverse the removal procedure.



EB304001

CHASSIS

ADJUSTING THE FRONT BRAKE

1. Adjust:
   • brake lever position
   (distance ⓐ from the throttle grip to the brake lever)

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   a. While pushing the brake lever forward, turn the adjusting dial ① until the brake lever is in the desired position.

NOTE:

Be sure to align the setting on the adjusting dial with the arrow mark ②

Position #1	**Distance ⓐ is the largest.**
Position #5	**Distance ⓐ is the smallest.**

⚠ WARNING

After adjusting the brake lever position, make sure that the pin on the brake lever holder is firmly inserted in the hole in the adjusting dial.

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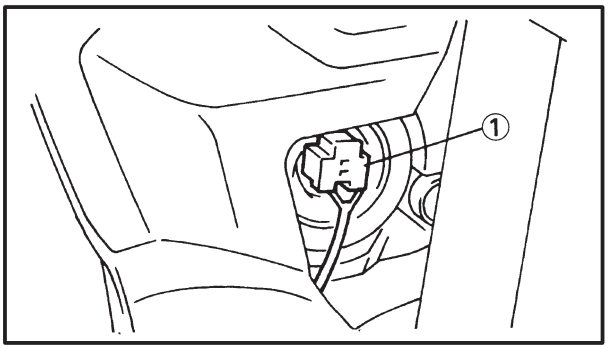
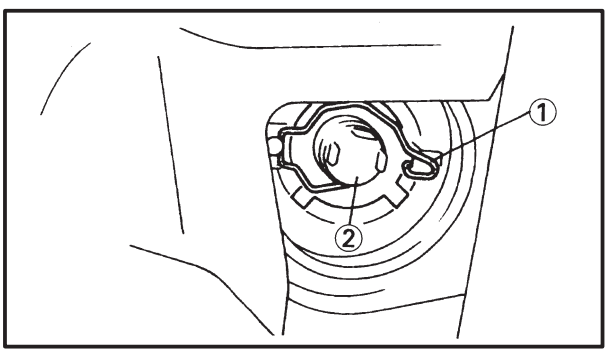




ELECTRICAL SYSTEM

EB305051

REPLACING THE HEADLIGHT BULBS

The following procedure applies to both of the headlight bulbs.

1. Disconnect:
   • headlight lead ①

2. Remove:
   • headlight bulb holder ①
3. Remove:
   • headlight bulb ②

⚠ WARNING

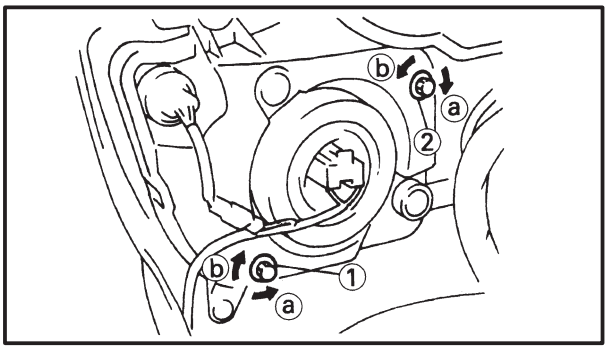
Since the headlight bulb gets extremely hot, keep flammable products and your hands away from the bulb until it has cooled down.

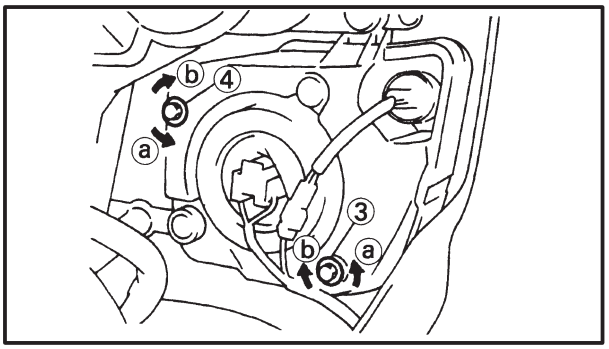
4. Install:
   • headlight bulb New
   Secure the new headlight bulb with the headlight bulb holder.

CAUTION:

Avoid touching the glass part of the headlight bulb to keep it free from oil, otherwise the transparency of the glass, the life of the bulb and the luminous flux will be adversely affected. If the headlight bulb gets soiled, thoroughly clean it with a cloth moistened with alcohol or lacquer thinner.

5. Install:
   • headlight bulb holder
6. Connect:
   • headlight lead





EB305061

ADJUSTING THE HEADLIGHT BEAMS

The following procedure applies to both of the headlights.

1. Adjust:
   • headlight beam (vertically)

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   a. Turn the adjusting screw ① ③ in direction ⓐ or ⓑ.

Direction ⓐ →	**Headlight beam is raised.**
Direction ⓑ →	**Headlight beam is lowered.**

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2. Adjust:
   • headlight beam (horizontally)

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   a. Turn the adjusting knob ② ④ in direction ⓐ or ⓑ.
   Left headlight ②

Direction ⓐ →	**Headlight beam moves to the right.**
Direction ⓑ →	**Headlight beam moves to the left.**

   Right headlight ④

Direction ⓑ →	**Headlight beam moves to the left.**
Direction ⓐ →	**Headlight beam moves to the right.**

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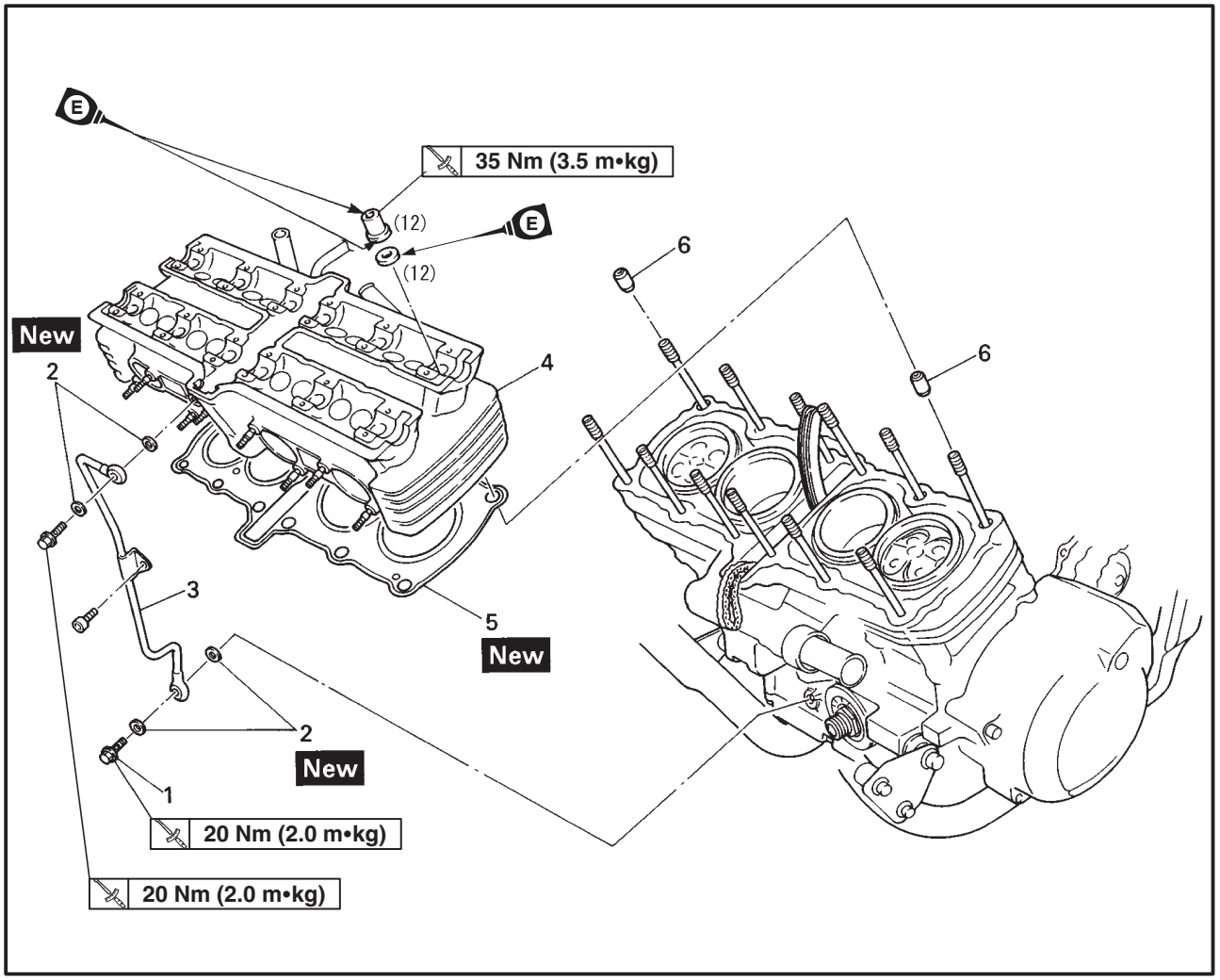
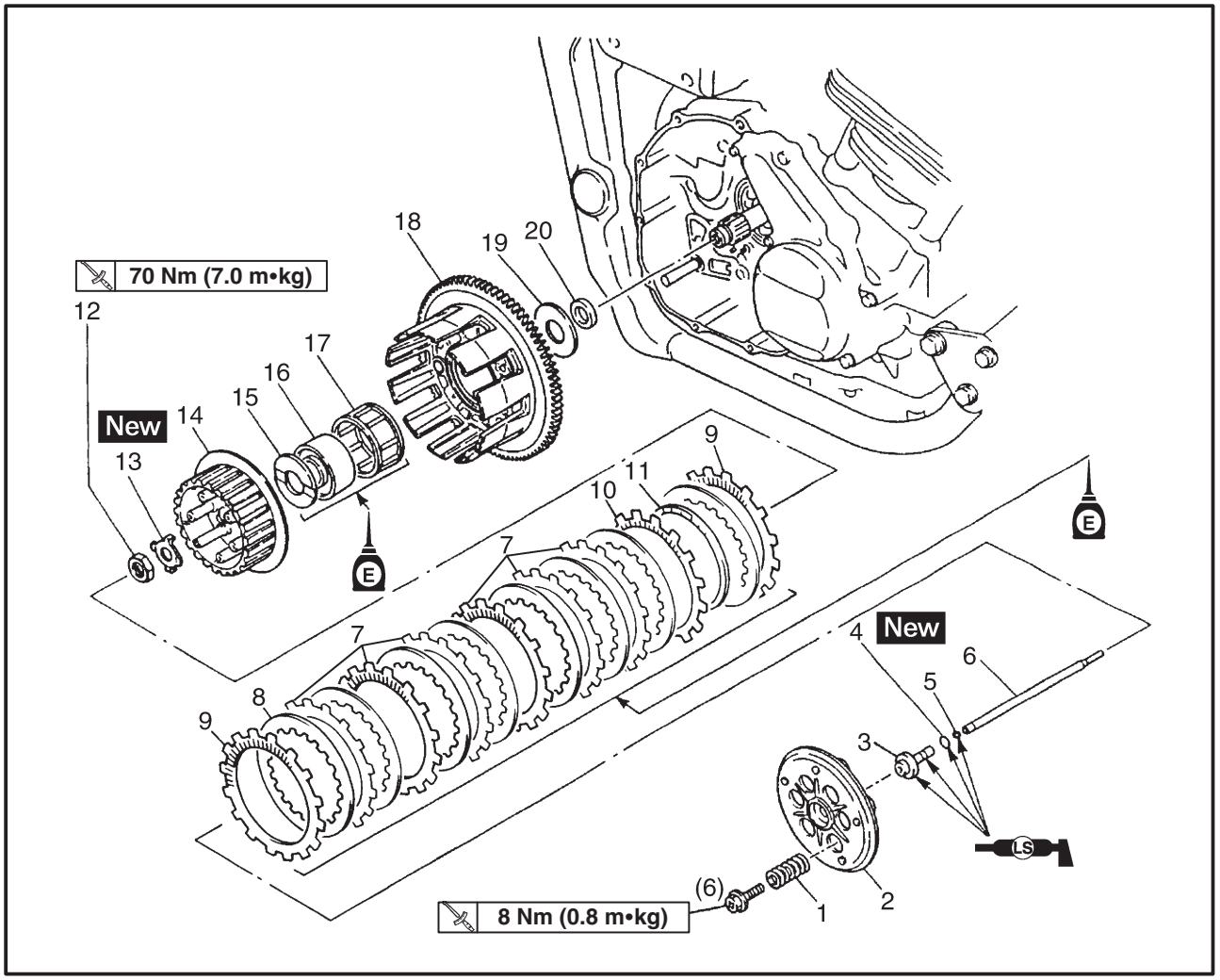
ENGINE

CYLINDER HEAD

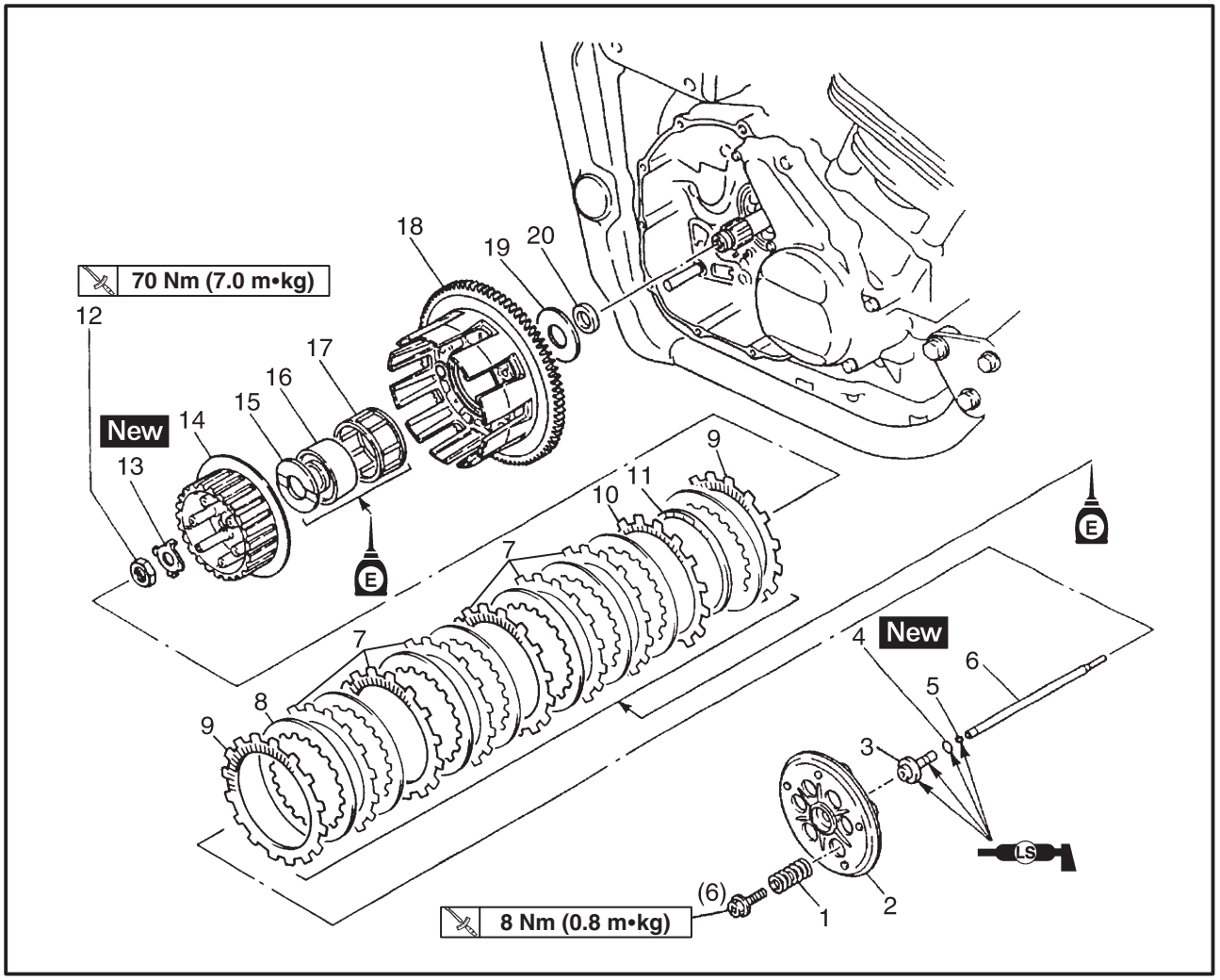


Order	Job name/Part name	Q'ty	Remarks
	Removing the cylinder head		Remove the parts in the order listed.
	Camshaft		Refer to "CAMSHAFT" section in chapter 4. (Manual No.: 5DM1-AE1)
1	Union bolt	2	
2	Copper washer	4	
3	Oil delivery pipe	1	
4	Cylinder head	1	Refer to "REMOVING/INSTALLING THE CYLINDER HEAD" section in chapter 4. (Manual No.: 5DM1-AE1)
5	Cylinder head gasket	1	
6	Dowel pin	2	
			For installation, reverse the removal procedure.

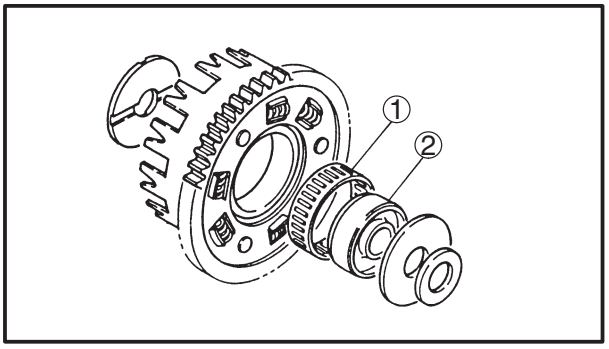
CLUTCH

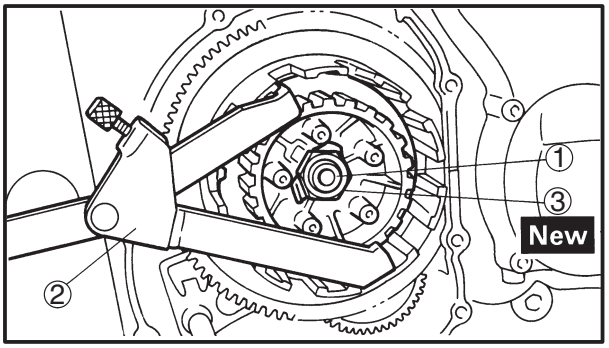


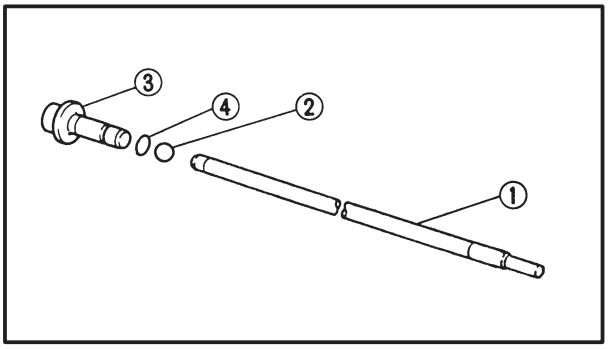
Order	Job name/Part	Q'ty	Remarks
	Removing the clutch		Remove the parts in the order listed.
1	Compression spring	6	
2	Pressure plate	1	
3	Short clutch push rod	1	
4	O-ring	1	
5	Ball	1	Refer to "INSTALLING THE CLUTCH" section.
6	Long clutch push rod	1	
7	Friction plate 1	6	
8	Clutch plate	8	
9	Friction plate 2	2	
10	Friction plate (large)	1	
11	Clutch spring plate	1	
12	Nut	1	Refer to "REMOVING/INSTALLING THE CLUTCH" section.



Order	Job name/Part name	Q'ty	Remarks
13	Lock washer	1	Refer to "REMOVING/INSTALLING THE CLUTCH" section.
14	Clutch boss	1	
15	Thrust washer	1	Refer to "INSTALLING THE CLUTCH" section.
16	Spacer	1	Refer to "REMOVING/INSTALLING THE CLUTCH" section.
17	Bearing	1	
18	Clutch housing	1	Refer to "INSTALLING THE CLUTCH" section.
19	Thrust washer	1	
20	Spacer	1	
			For installation, reverse the removal procedure.







EB405701

INSTALLING THE CLUTCH

1. Install:
   - bearing ①
   - spacer ②

   NOTE:

   Install the spacer with the two screw holes facing towards the clutch boss.

2. Tighten:
   - clutch boss nut ①

   70 Nm (7.0 m•kg)

   NOTE:

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

   Universal clutch holder
   90890-04086

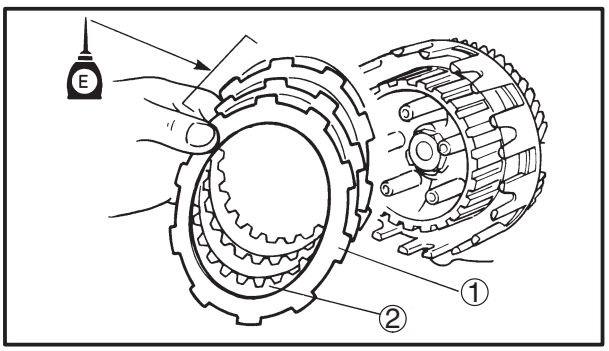
3. Bend the lock washer ③ tab along a flat side of the nut.
4. Lubricate:
   - long clutch push rod ①
   - ball ②
   - short clutch push rod ③
   - O-ring ④

   (with the recommended lubricant)

   Recommended lubricant
   Lithium soap base grease

5. Install:
   - long clutch push rod
   - ball
   - short clutch push rod

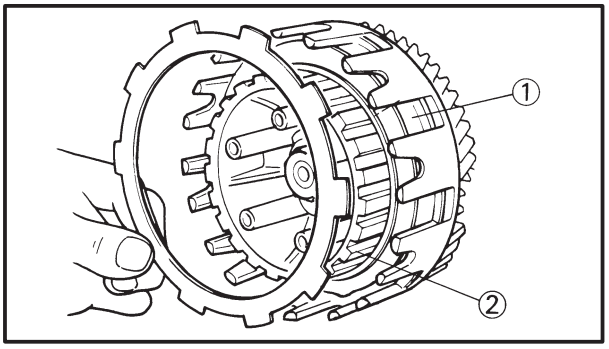
   (along with a new O-ring ④)



6. Lubricate:
   - friction plates ①
   - clutch plates ②

   (with the recommended lubricant)

   Recommended lubricant
   Engine oil



7. Install:
   • friction plates ①
   • clutch plates ②

CAUTION:

There are two kinds of friction plates, so do not mix the plates up when installing them.

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a. Install a friction plate and clutch plate.
b. Install a clutch spring plate, friction plate (large of inside dia.) and clutch plate.
c. Install a friction plate and then alternate between a clutch plate and a friction plate.

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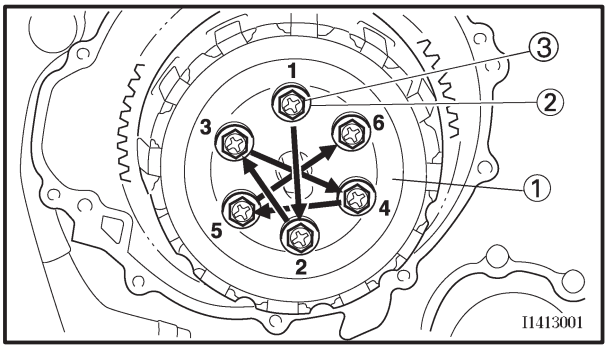
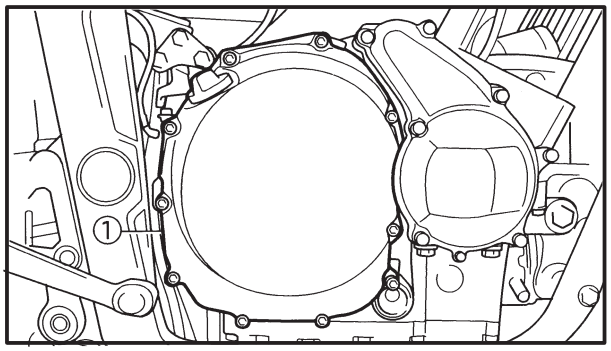


8. Install:
   • pressure plate ①
   • clutch springs ②
   • clutch spring bolts ③ 8.0 Nm (0.8 m•kg)

NOTE:

• When installing the clutch springs, alternate between long and short clutch springs.
• Tighten the clutch spring bolts in stages and in a crisscross pattern.

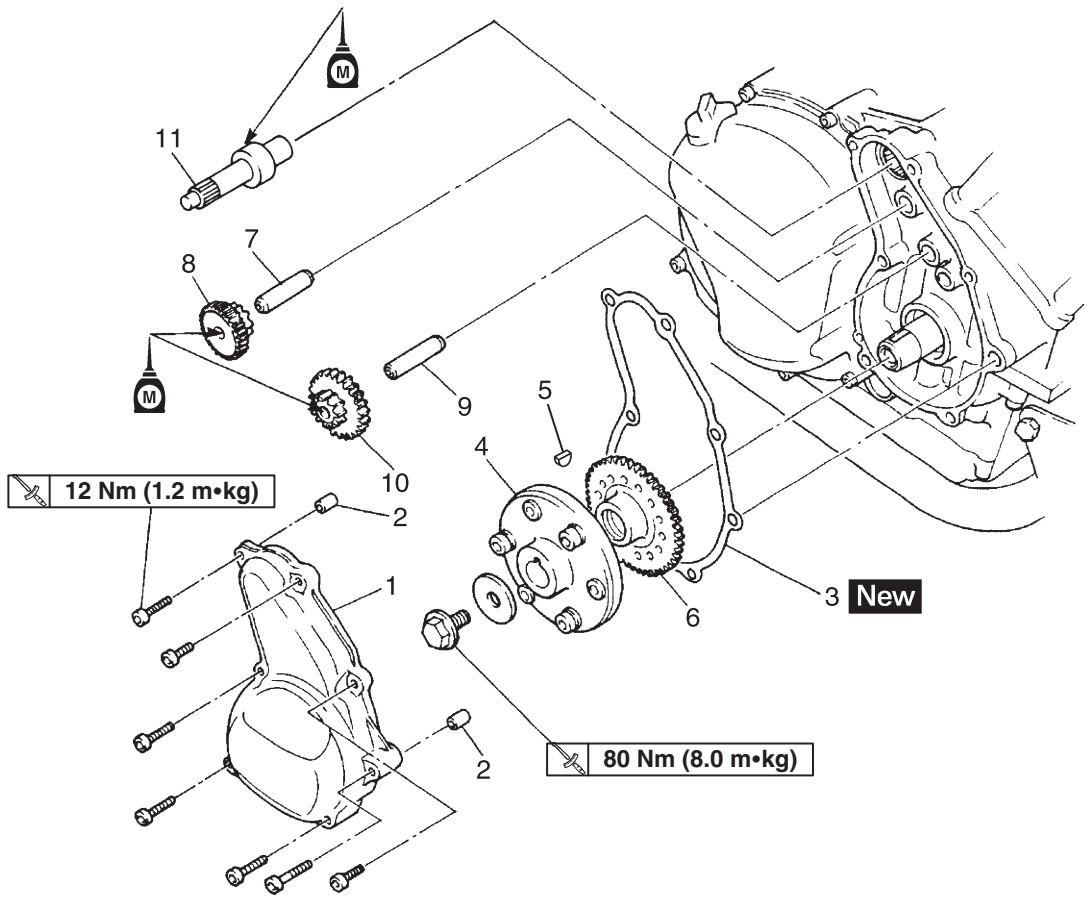


9. Install:
   • clutch cover ①
   • clutch cover bolts 12 Nm (1.2 m•kg)

NOTE:

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

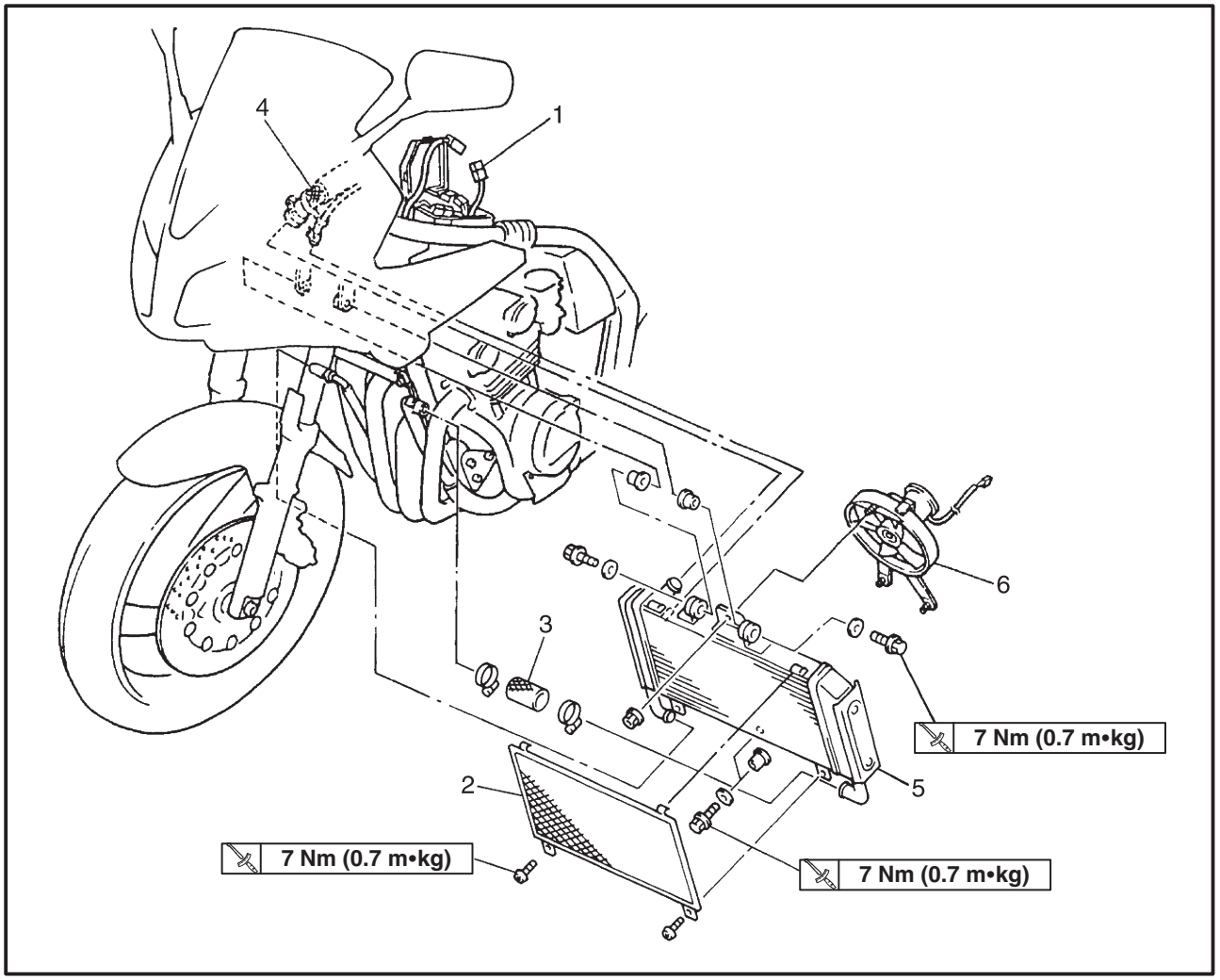
AC MAGNETO AND STARTER CLUTCH
STARTER CLUTCH



Order	Job name/Part name	Q'ty	Remarks
	Removing the starter clutch		Remove the parts in the order listed.
	Generator cover		
1	Starter clutch cover	1	
2	Dowel pin	2	
3	Gasket	1	
4	Starter clutch assembly	1	Refer to "REMOVING/INSTALLING THE STARTER CLUTCH" section in chapter 4. (Manual No.: 5DM1-AE1)
5	Wood ruff key	1	
6	Starter wheel gear	1	
7	Shaft (Primary)	1	
8	Starter idle gear (primary)	1	
9	Shaft (Secondary)	1	
10	Starter idle gear (secondary)	1	
11	Shaft drive gear	1	
			For installation, reverse the removal procedure.

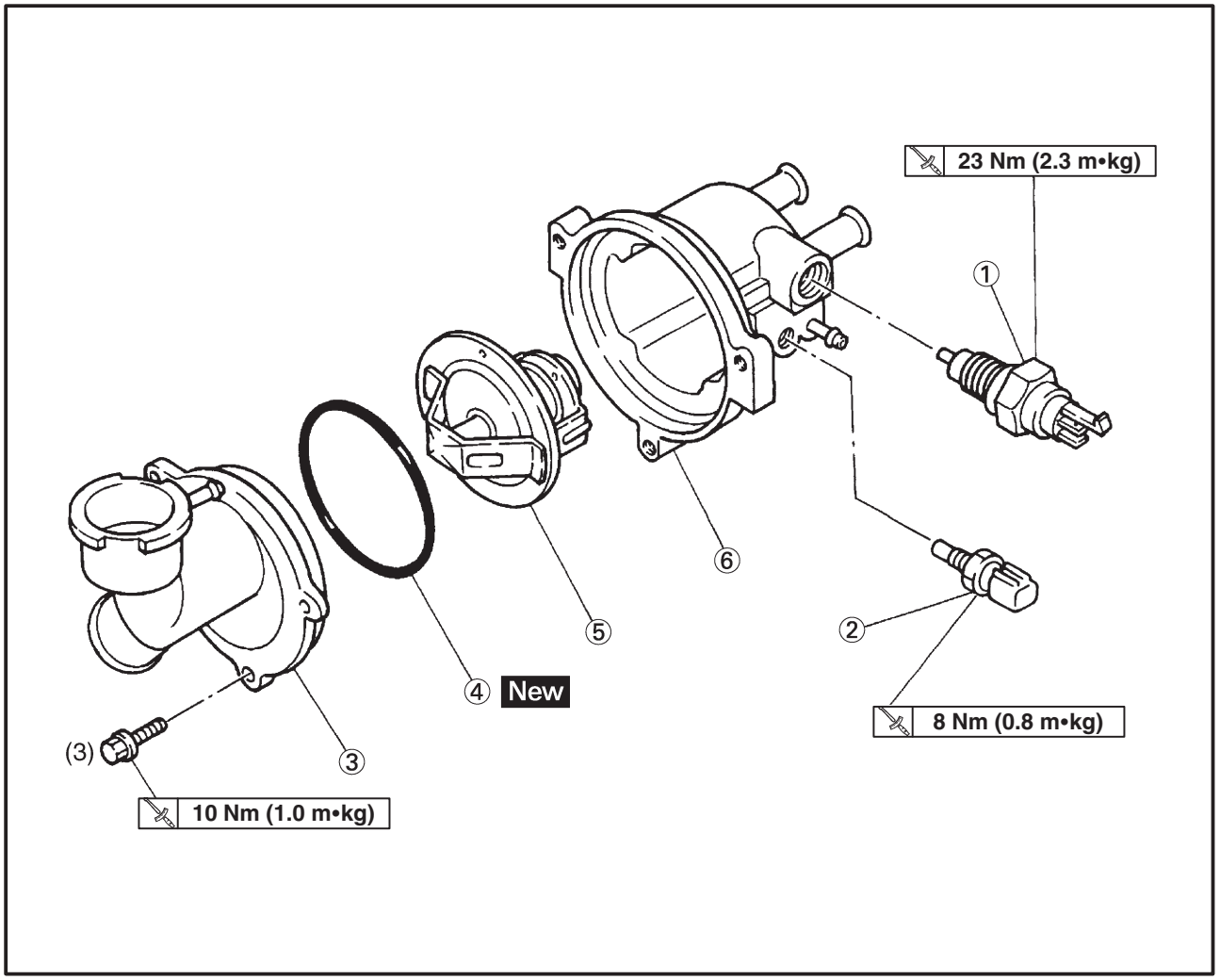
COOLING SYSTEM

RADIATOR

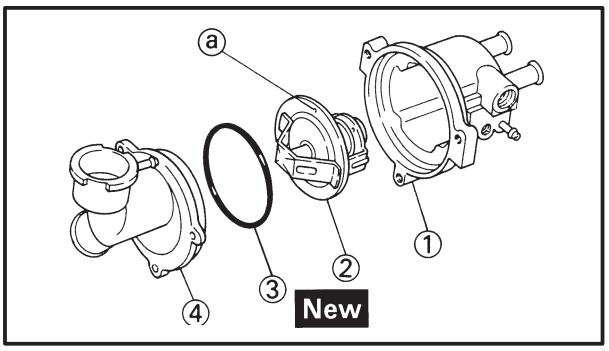


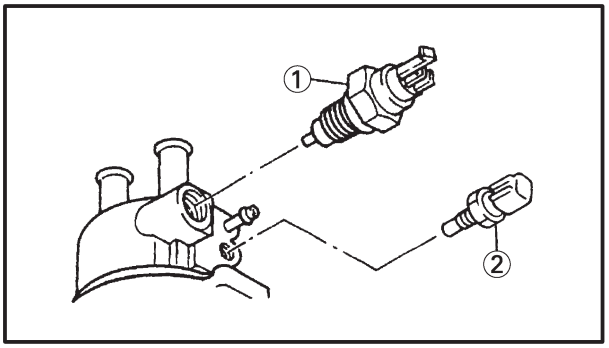
Order	Job name/Part name	Q'ty	Remarks
	Removing the radiator		Remove the parts in the order listed.
	Seat		Refer to "FRONT COWLING/SEAT/SIDE COVER/FUEL TANK" section in chapter 3. (Manual No.: 5DM1-AE1)
	Fuel tank		
	Drain the coolant		Refer to "CHANGING THE COOLANT" section in chapter 3. (Manual No.:5DM1-AE1)
1	Fan motor leads	1	**NOTE:**
2	Radiator cover	1	Disconnect the coupler.
3	Radiator outlet hose	1	
4	Radiator inlet hose	1	
5	Radiator	1	
6	Fan	1	
			For installation, reverse the removal procedure.

THERMOSTAT



Order	Job name/Part name	Q'ty	Remarks
	Disassembling the thermostat		Disassembly the parts in the order listed.
①	Thermo switch (fan motor)	1	
②	Thermo unit (engine temperature)	1	
③	Thermostat housing cover	1	Refer to "ASSEMBLING THE THERMOSTAT" section.
④	O-ring	1	
⑤	Thermostat	1	
⑥	Thermostat housing	1	
			For assembly, reverse the disassembly procedure.





EB502030

ASSEMBLING THE THERMOSTAT

1. Install:
   - thermostat housing ①
   - thermostat ②
   - O-ring (New) ③
   - thermostat housing cover ④
   - thermostat housing cover bolt

   10 Nm (1.0 m•kg)

NOTE:

Install the thermostat with its breather hole ⓐ facing up.

2. Install:
   - thermo switch (fan motor) ①

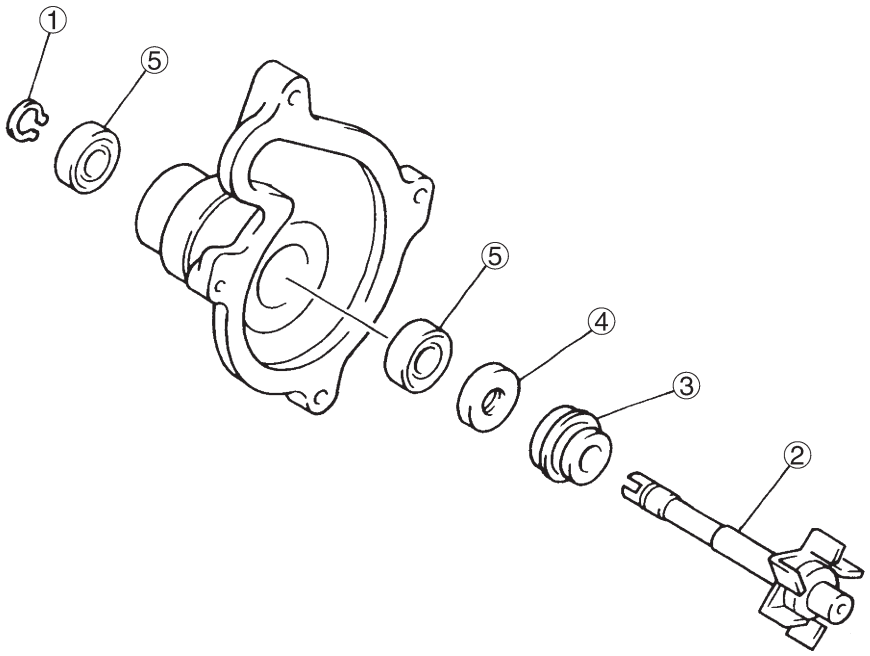
     23 Nm (2.3 m•kg)
   - thermo unit (engine temperature) ②

     8 Nm (0.8 m•kg

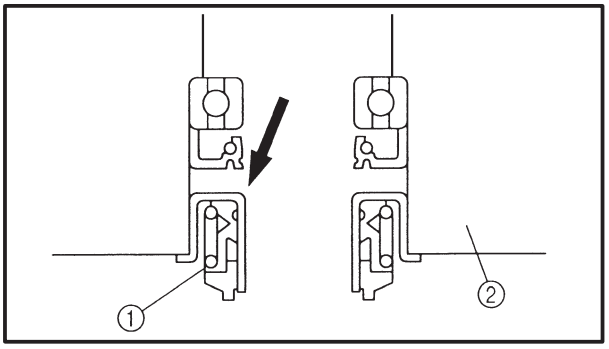
CAUTION:

Use extreme care when handling the thermo switch and temperature sender. Replace any part that was dropped or subjected to a strong impact.

WATER PUMP



Order	Job name/Part name	Q'ty	Remarks
	Disassembling the water pump		Disassembly the parts in the order listed.
①	Circrip	1	
②	Impeller shaft	1	
③	Water pump seal	1	
④	Oil seal	1	
⑤	Bearing	2	
			For assembly, reverse the disassembly procedure.

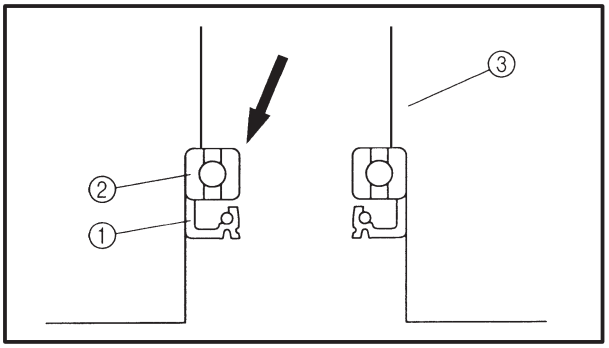


EAS00470
DISASSEMBLING THE WATER PUMP

1. Remove:
   • water pump seal ①

   NOTE:

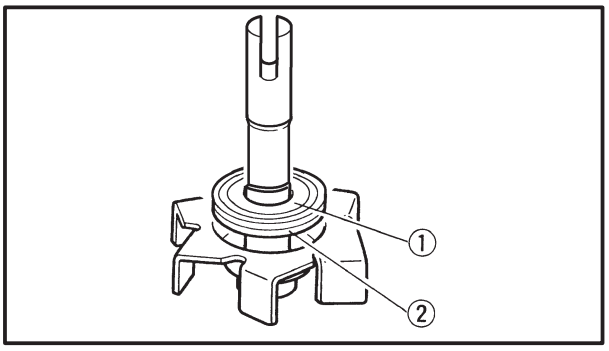
   Tap out the water pump seal from the inside of the water pump housing ②.



2. Remove:
   • oil sesal ①
   • bearing ②

   NOTE:

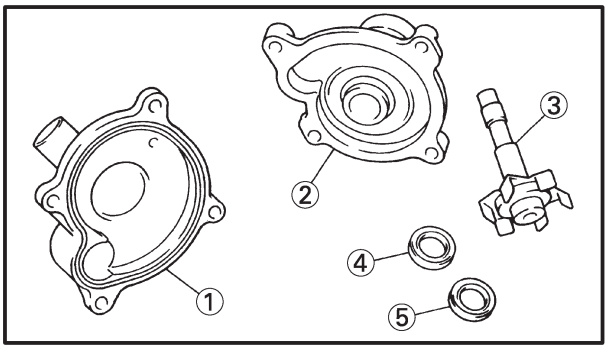
   Tap out the bearing and oil seal from the outside of the water pump housing ③.



3. Remove:
   • rubber damper holder ①
   • rubber damper ②
   (from the impeller, with a thin, flat-head screwdriver)

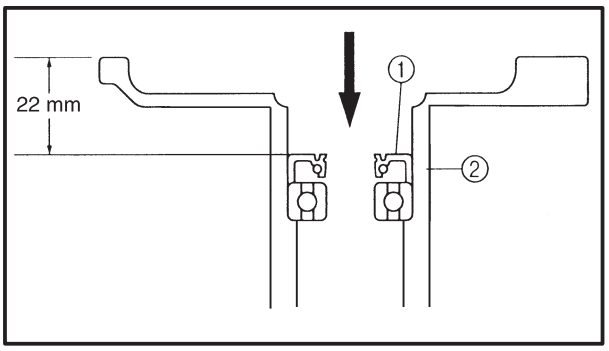
   NOTE:

   Do not scratch the impeller shaft.



EAS00473
CHECKING THE WATER PUMP

1. Check:
   • water pump housing cover ①
   • water pump housing ②
   • impeller ③
   • rubber damper ④
   • rubber damper holder ⑤
2. Check:
   • water pump seal
   • oil seal
   • water pump inlet pipe
   Crack/damage/wear → Replace
   • bearing
   Roughness → Replace.



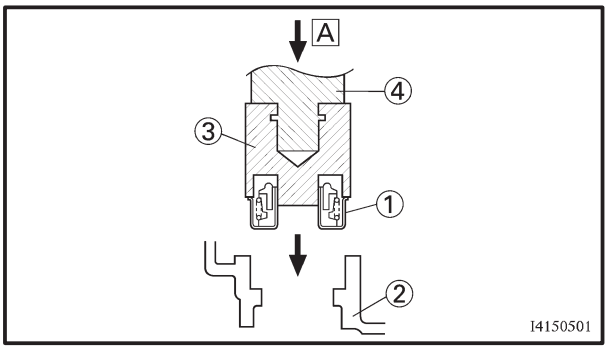
EAS00475

ASSEMBLING THE WATER PUMP

1. Install:
   - oil seal New ①
     (to the water pump housing ②)

NOTE:

- Install the oil seal with a socket that matches its outside diameter.
- Before installing the oil seal, apply tap water or coolant onto its outer surface.



2. Install:
   - water pump seal New ①

CAUTION:

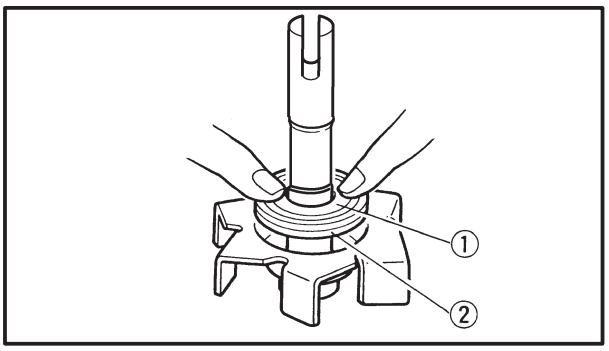
Never apply oil or grease onto the water pump seal surface.

NOTE:

- Install the water pump seal with the water pump seal installers.
- Before installing the water pump seal, apply Yamaha bond No.1215 to the water pump housing ②.

Water pump seal installer ③
90890-04078
Middle driven shaft bearing driver ④
90890-04058
Yamaha bond No.1215
90890-85505

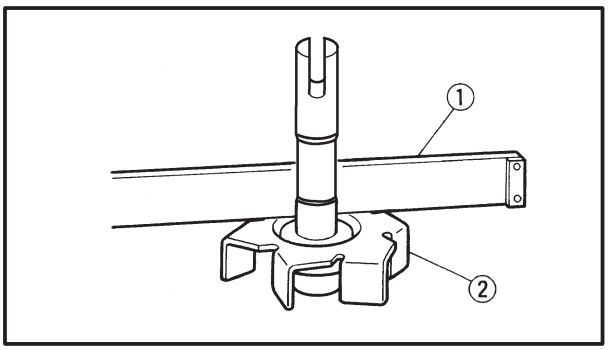
A Push down



3. Install:
   • rubber damper New ①
   • rubber damper holder New ②

NOTE:

Before installing the rubber damper, apply tap water or coolant onto its outer surface.



4. Measure:
   • tilt
   Out of specification → Repeat steps (3) and (4).

CAUTION:

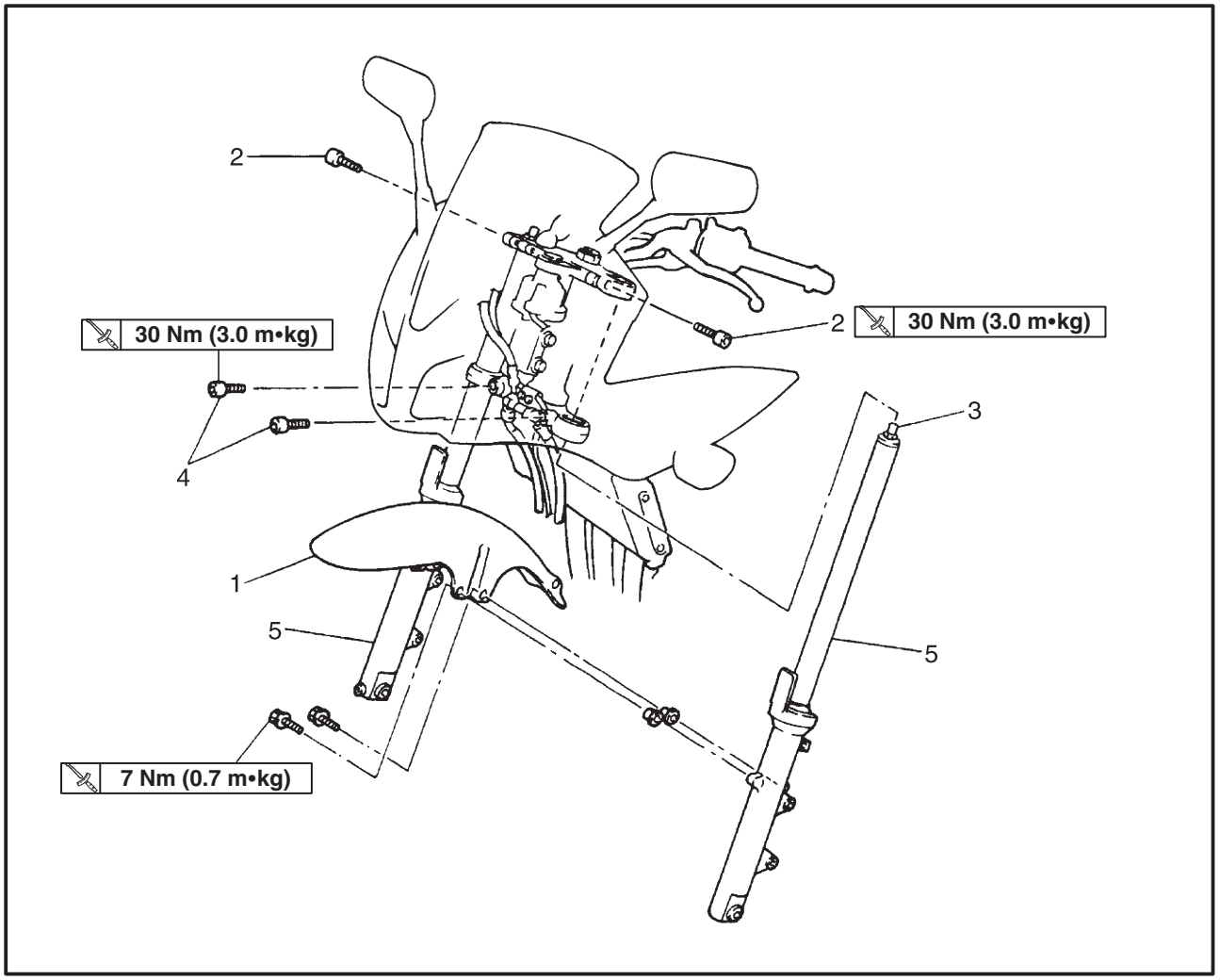
Make sure that the rubber damper and rubber damper holder are flush with the impeller.

Tilt limit
0.15 mm

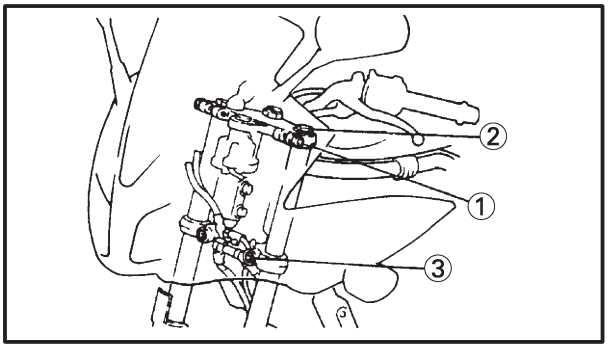
① Straightedge
② Impeller

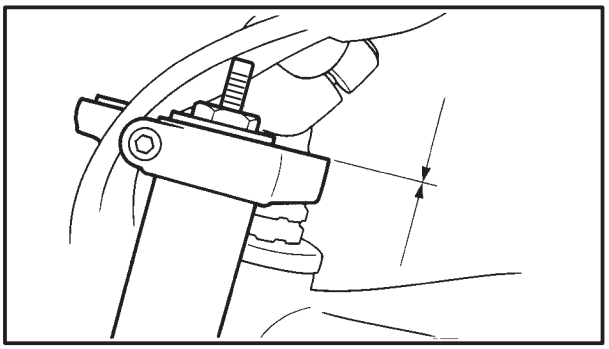
CHASSIS

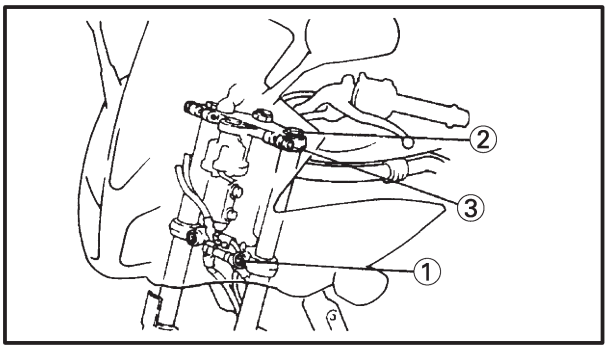
FRONT FORK



Order	Job name/Part name	Q'ty	Remarks
	Removing the front fork		Remove the parts in the order listed.
	Front wheel		Refer to "FRONT WHEEL AND BRAKE DISCS" section in chapter 7. (Manual No.: 5DM1-AE1)
	Front brake calipers		Refer to "FRONT AND REAR BRAKES" section in chapter 7. (Manual No.: 5DM1-AE1)
1	Front fender	1	
2	Bolt (upper bracket)	2	Loosen — Refer to "REMOVING/INSTALLING THE FRONT FORK LEGS" section.
3	Cap bolt	2	Loosen
4	Bolt (lower bracket)	2	Loosen
5	Front fork assembly (left/right)	1/1	Refer to "REMOVING/INSTALLING THE FRONT FORK LEGS" section. For installation, reverse the removal procedure.







EB703100

REMOVING THE FRONT FORK LEGS

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

1. Stand the motorcycle on a level surface.

⚠ WARNING

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

NOTE:

Place the motorcycle on a suitable stand so that the front wheel is elevated.

2. Loosen:
   - upper bracket pinch bolt ①
   - cap bolt ②
   - lower bracket pinch bolt ③

⚠ WARNING

Before loosening the upper and lower bracket pinch bolts, support the front fork leg.

3. Remove:
   - front fork leg

EB703710

INSTALLING THE FRONT FORK LEGS

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

1. Install:
   - front fork leg

   Temporarily tighten the upper and lower bracket pinch bolts.

NOTE:

Make sure that the inner fork tube is flush with the top of the handlebar holder.

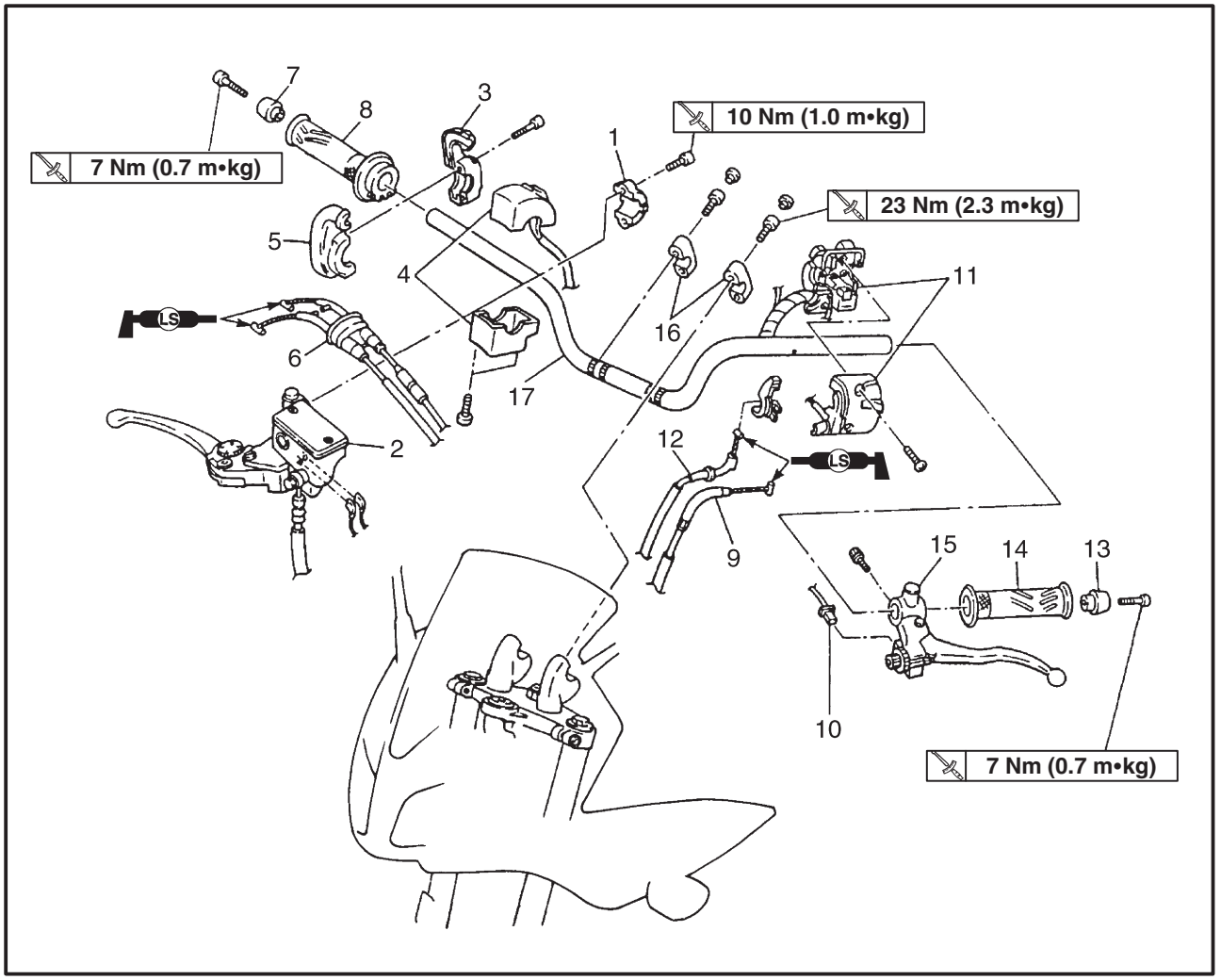
2. Tighten:
   - lower bracket pinch bolt ①
   - cap bolt ②
   - upper bracket pinch bolt ③

Lower bracket pinch bolt
30 Nm (3.0 m•kg)
Cap bolt
23 Nm (2.3 m•kg)
Upper bracket pinch bolt
30 Nm (3.0 m•kg)

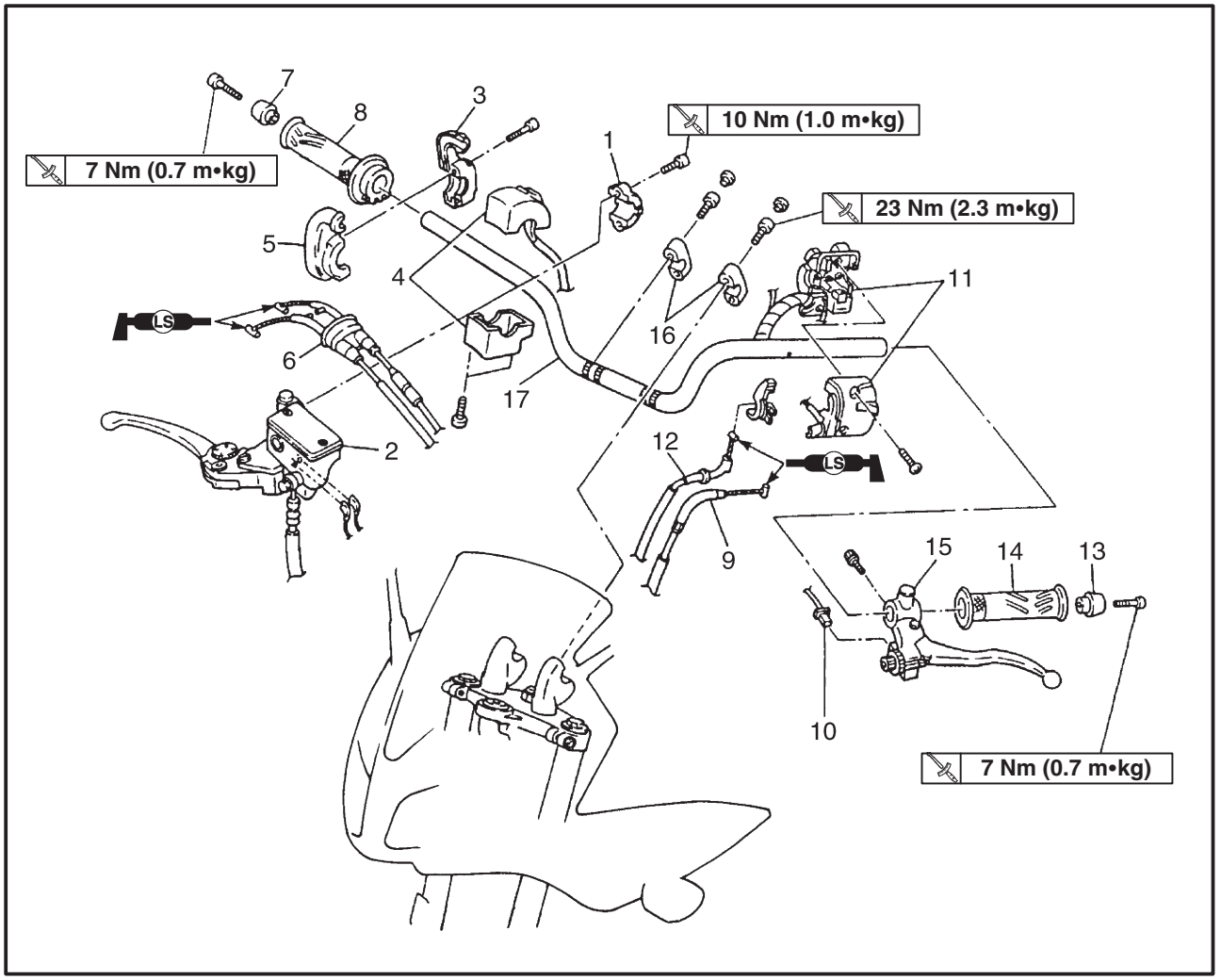
⚠ WARNING

Make sure that the brake hoses are routed properly.

HANDLEBAR

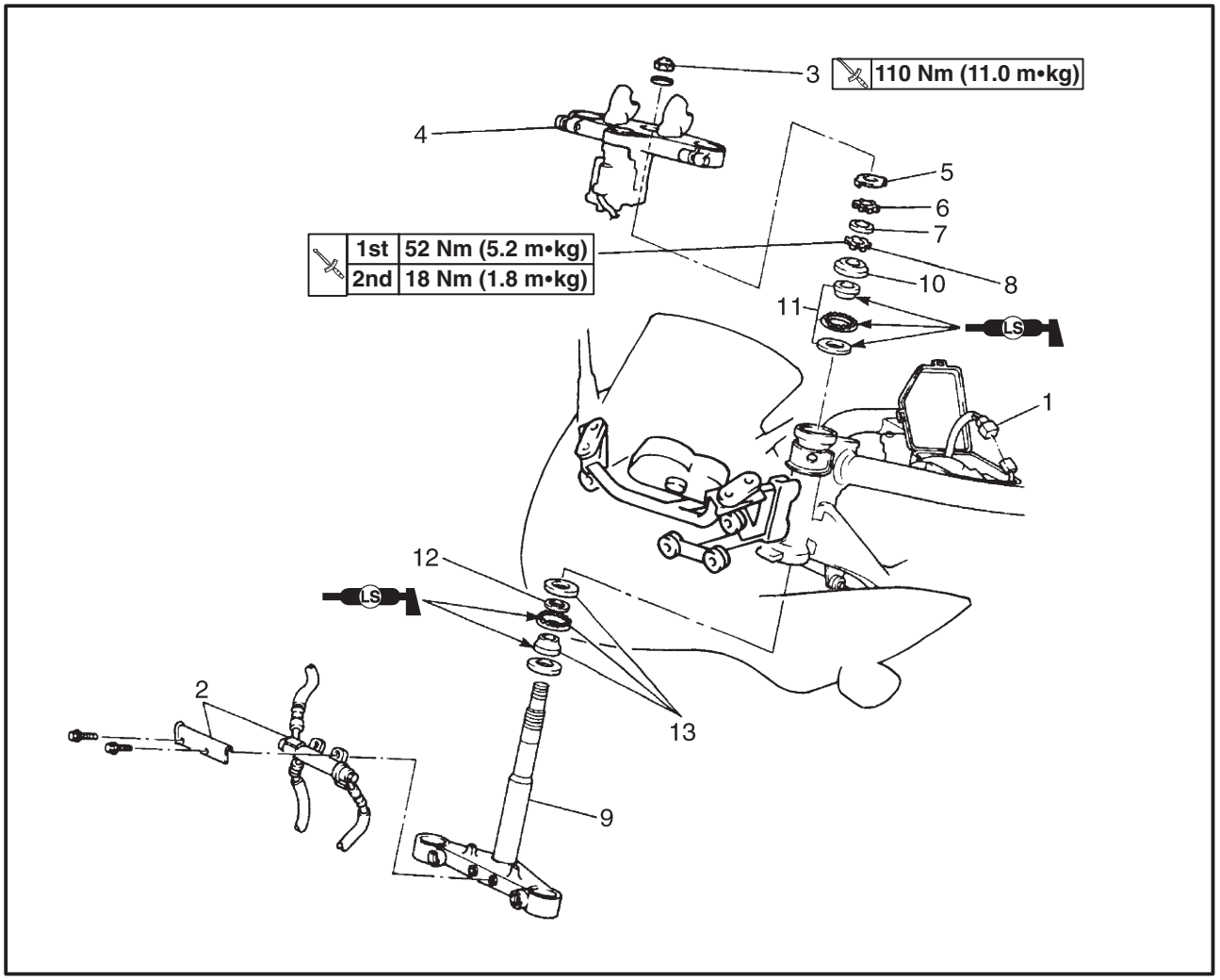


Order	Job name/Part name	Q'ty	Remarks
	Removing the handle bar		Remove the parts in the order listed.
1	Master cylinder bracket	1	
2	Master cylinder assembly	1	
3	Throttle cable housing cover	1	
4	Handle bar switch (right)	1	
5	Throttle cable housing	1	
6	Throttle cable	1	
7	Grip end	1	
8	Grip assembly	1	
9	Clutch cable	1	
10	Clutch switch	1	
11	Handle bar switch (left)	1	Refer to "INSTALLING THE HANDLEBAR" section in chapter 7. (Manual No.: 5DM1-AE1)
12	Starter cable	1	
13	Grip end	1	Refer to "INSTALLING THE HANDLEBAR" section in chapter 7. (Manual No.: 5DM1-AE1)

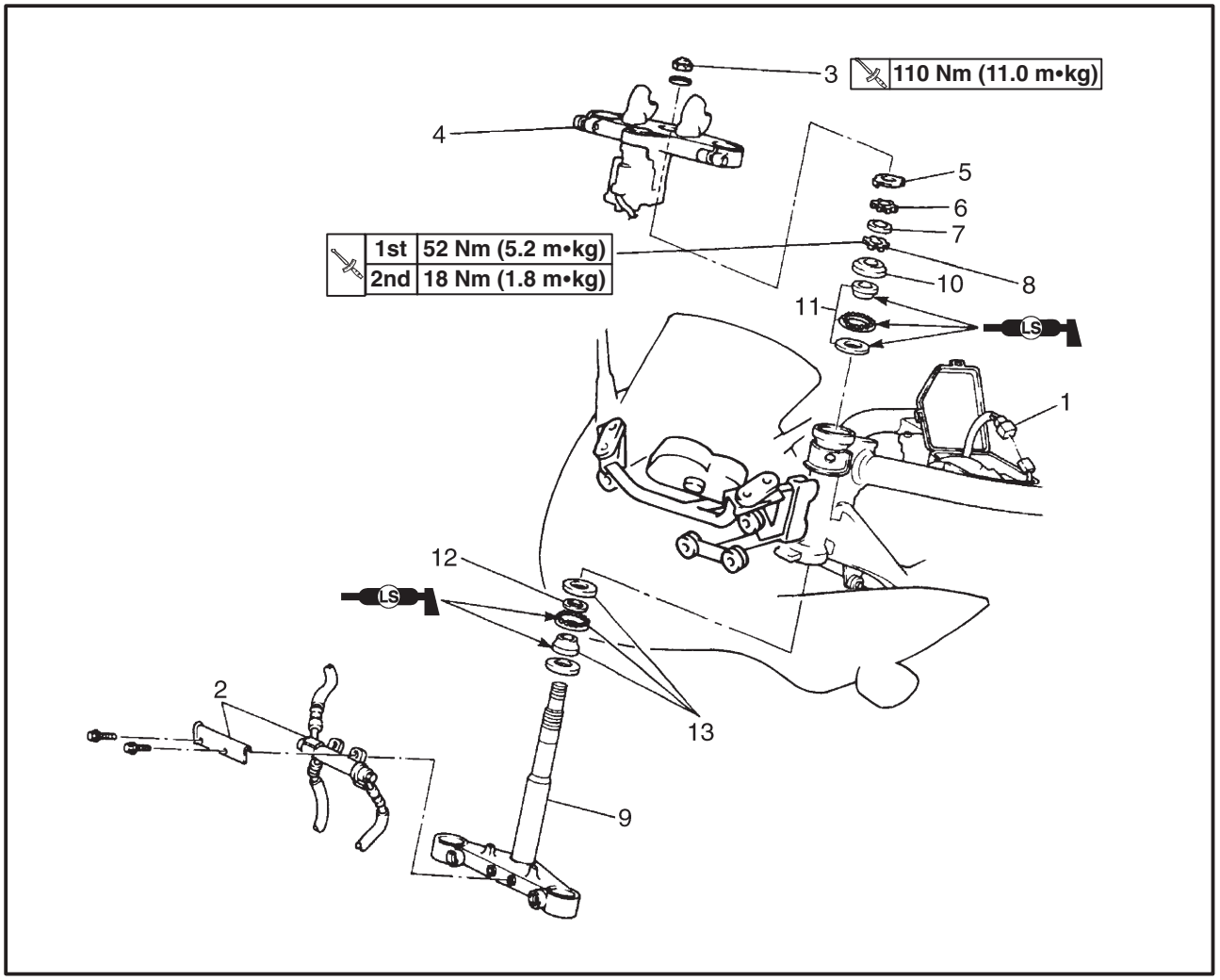


Order	Job name/Part name	Q'ty	Remarks
14	Grip (left)	1	Refer to "REMOVING THE HANDLEBAR" section in chapter 7. (Manual No.: 5DM1-AE1)
15	Clutch lever holder	1	
16	Upper handlebar holder	2	Refer to "INSTALLING THE HANDLEBAR" section in chapter 7. (Manual No.: 5DM1-AE1) For installation, reverse the removal procedure.
17	Handle bar	1	

STEERING HEAD
LOWER BRACKET

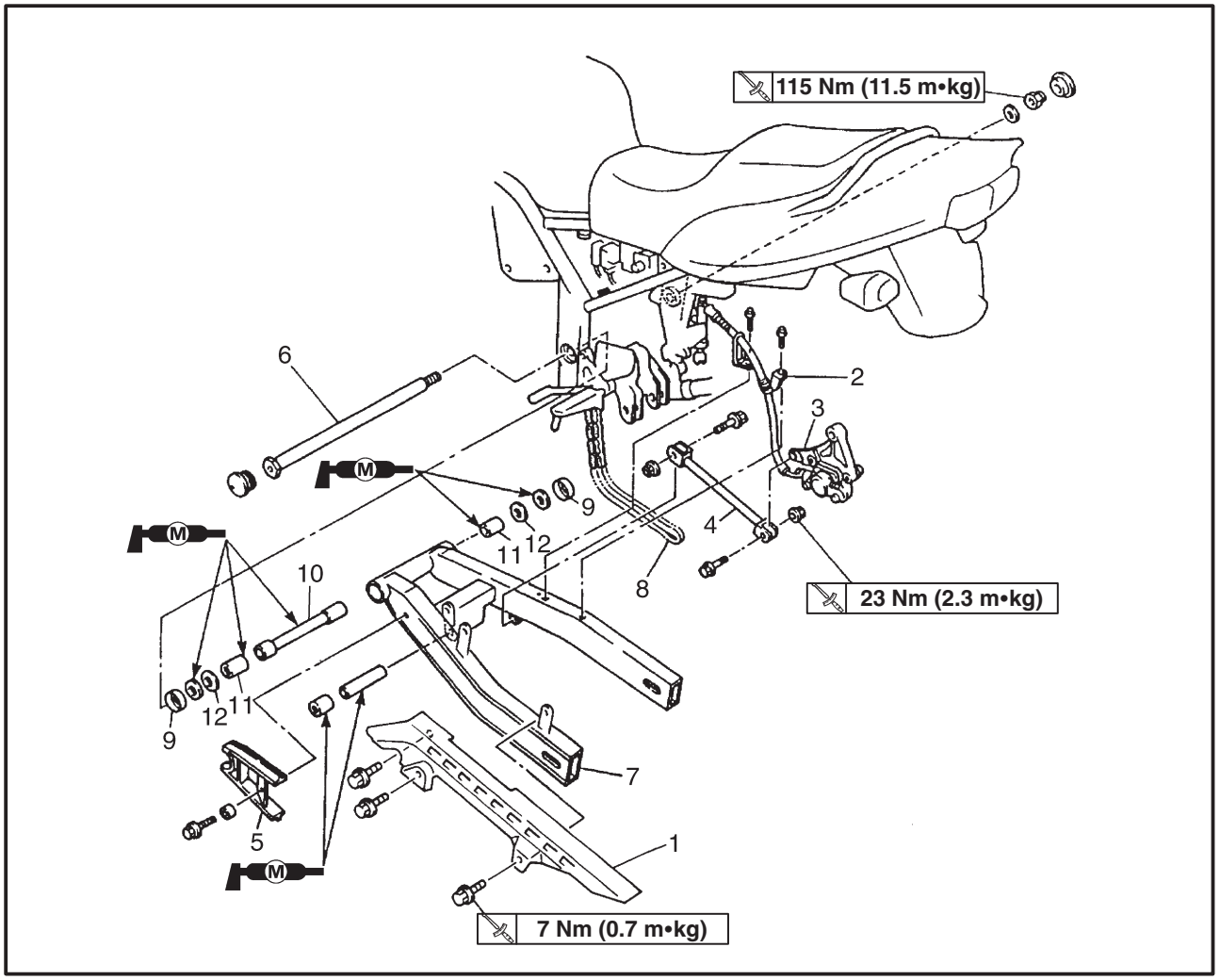


Order	Job name/Part name	Q'ty	Remarks
	Removing the lower bracket		Remove the parts in the order listed.
	Front cowling		Refer to "FRONT COWUNG/SEAT/ SIDE COVER/FUEL TANK" section.
	Fuel tank		
	Front wheel		Refer to "FRONT WHEEL" section in chapter 7. (Manual No.: 5DM1-AE1)
	Front fork		Refer to "FRONT FORK" section in chapter 7. (Manual No.: 5DM1-AE1)
	Handle bar		Refer to "HANDLEBAR" section in chapter 7. (Manual No.: 5DM1-AE1)
1	Main switch lead coupler	1	**NOTE:**
2	Brake hose joint/cover	1/1	Disconnect the coupler.
3	Steering stem nut	1	
4	Upper bracket	1	
5	Lock washer	1	
6	Ring nut (upper)	1	Refer to "REMOVING THE LOWER BRACKET/INSTALLING THE STEERING HEAD" section in chapter 7. (Manual No.: 5DM1-AE1)
7	Rubber washer 1	1	
8	Ring nut (lower)	1	

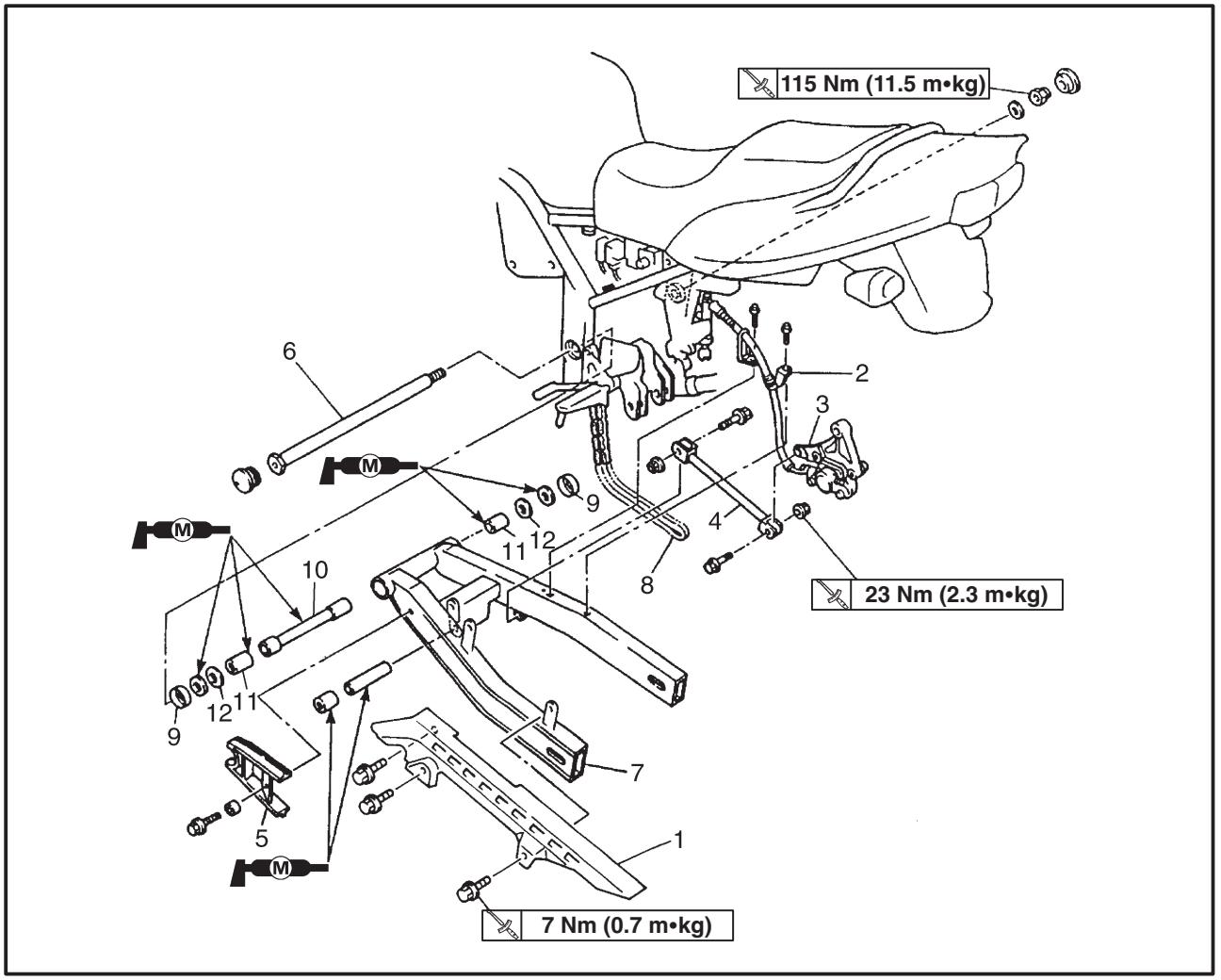


Order	Job name/Part name	Q'ty	Remarks
9	Lower bracket	1	
10	Ball race cover	1	
11	Ball bearing	1	Refer to "INSTALLING THE STEERING HEAD" section in chapter 7. (Manual No.: 5DM1-AE1) For installation, reverse the removal procedure.
12	Rubber washer 1	1	
13	Ball bearing	1	

SWINGARM AND DRIVE CHAIN



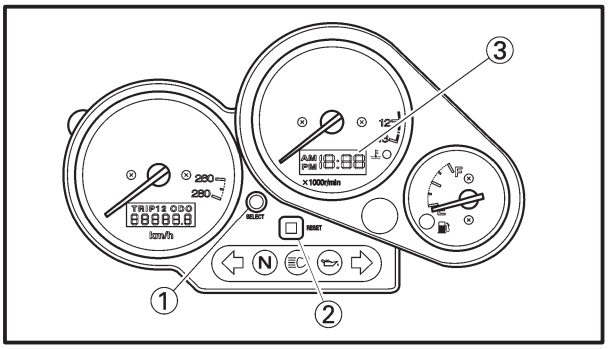
Order	Job name/Part name	Q'ty	Remarks
	Removing the swingarm and drive chain		Removing the parts in the order listed.
	Rear wheel		Refer to "REAR WHEEL, BRAKE DISC AND REAR WHEEL SPROCKET" section in chapter 7. (Manual No.: 5DM1-AE1)
	Rear shock absorber assembly Relay arm		Refer to "REAR SHOCK ABSORBER AND RELAY ARM" section in chapter 7. (Manual No.: 5DM1-AE1)
	Rear wheel sprocket		Refer to "REMOVING THE ENGINE" section in chapter 4. (Manual No.: 5DM1-AE1)
1	Drive chain guard	1	
2	Brake hose holder	2	
3	Caliper bracket	1	
4	Compression bar	1	
5	Drive chain guide	1	
6	Pivot shaft	1	
7	Swingarm	1	



Order	Job name/Part name	Q'ty	Remarks
8	Drive chain	1	
9	Cover	2	
10	Spacer	1	
11	Bearing	2	
12	Washer	2	
			For installation, reverse the removal procedure.

ELECTRICAL SYSTEM

INSTRUMENT FUNCTION



① "SELECT" button
② "RESET" button
③ Clock

Digital clock

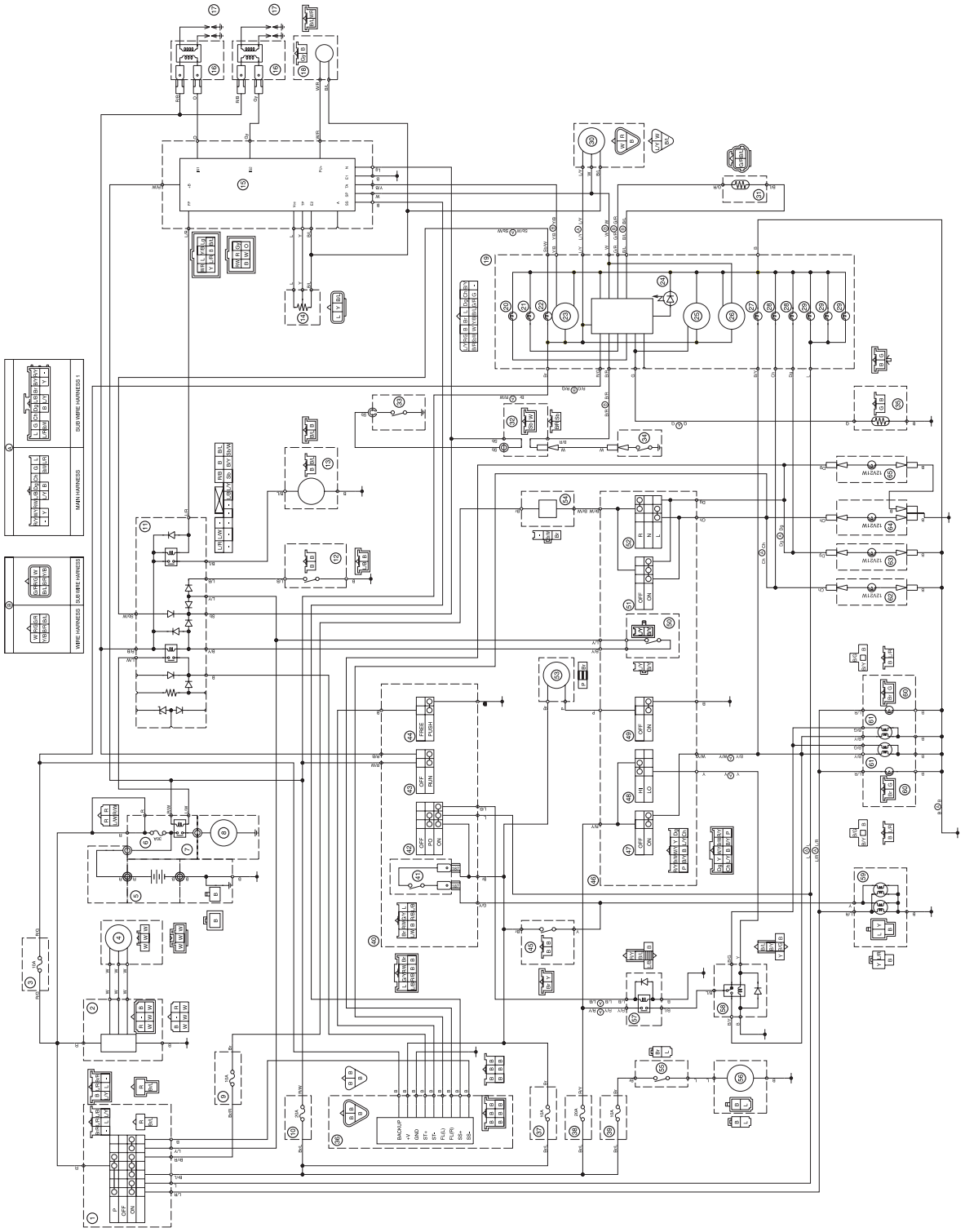
To set the clock:

1. Push both the "SELECT" ① and "RESET" ② buttons for at least two seconds.
2. When the hour digits start flashing, push the "RESET" button ② to set the hours.
3. Push the "SELECT" button ① to change the minutes.
4. When the minute digits start flashing, push the "RESET" button ② to set the minutes.
5. Push the "SELECT" button ① to start the clock.

NOTE:

After setting the clock, be sure to push the "SELECT" button ① before turning the main switch to "OFF", otherwise the clock will not be set.

CIRCUIT DIAGRAM



① Main switch
② Rectifier/Regulator
③ Backup fuse
④ Generator
⑤ Battery
⑥ Main fuse
⑦ Starter relay
⑧ Starter motor
⑨ Turn signal fuse
⑩ Ignition fuse
⑪ Starting circuit cut-off relay
⑫ Sidestand switch
⑬ Fuel pump
⑭ Throttle position sensor
⑮ Ignitor unit
⑯ Ignition coil
⑰ Spark plug
⑱ Pick up coil
⑲ Meter assembly
⑳ Fuel level warning light
㉑ Oil level warning light
㉒ Neutral indicator light
㉓ Tachometer
㉔ Coolant temperature warning light
㉕ Fuel meter
㉖ Speedometer
㉗ High beam indicator light
㉘ Turn signal indicator light
㉙ Meter light
㉚ Speed sensor
㉛ Thermo unit
㉜ Wire lead
㉝ Neutral switch
㉞ Oil level switch
㉟ Fuel sender
㊱ Alarm
㊲ Signaling system fuse
㊳ Headlight fuse
㊴ Radiator fan motor fuse
㊵ Right handlebar switch
㊶ Front brake light switch
㊷ Light switch
㊸ Engine stop switch
㊹ Start switch
㊺ Rear brake light switch
㊻ Left handlebar switch
㊼ Pass switch
㊽ Dimmer switch
㊾ Horn switch
㊿ Clutch switch
(51) Hazard switch
(52) Turn signal switch
(53) Horn
(54) Turn signal relay
(55) Thermo switch
(56) Radiator fan motor
(57) Headlight relay (on/off)
(58) Headlight relay (dimmer)
(59) Tail/brake light
(60) Auxiliary light
(61) Headlight
(62) Front turn signal light (left)
(63) Front turn signal light (right)
(64) Rear turn signal light (left)
(65) Rear turn signal light (right)

NOTE:

- Starter switch is closed while the button (switch) is pushed.
- Sidestand switch is closed while the side stand is upped.
- Clutch switch is closed while the clutch lever is pulled.
- Brake switch is closed while the brake is applied.

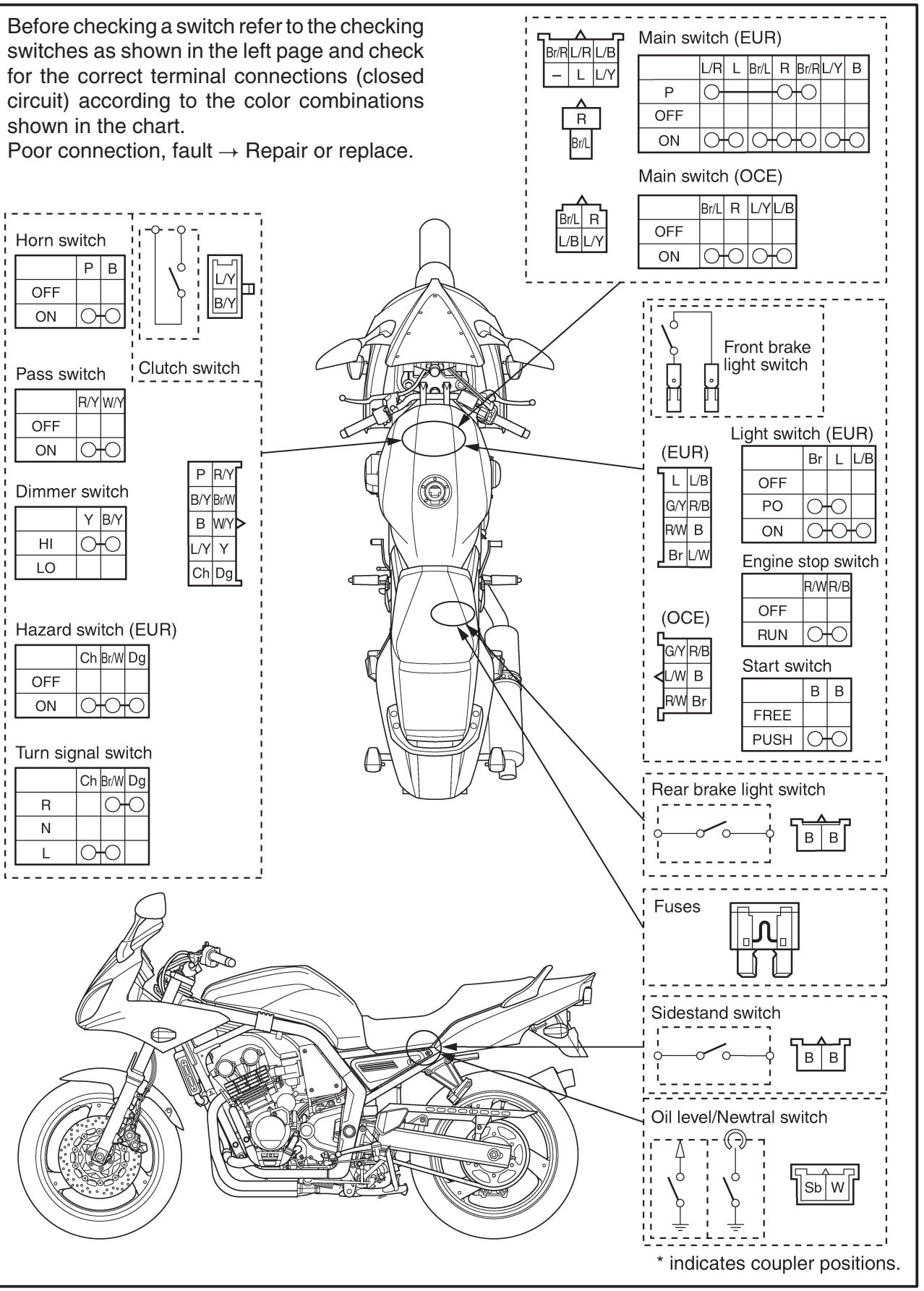
COLOR CODE

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

YP******

SWITCH POSITION AND TERMINAL CONNECTION

Before checking a switch refer to the checking switches as shown in the left page and check for the correct terminal connections (closed circuit) according to the color combinations shown in the chart.
Poor connection, fault → Repair or replace.

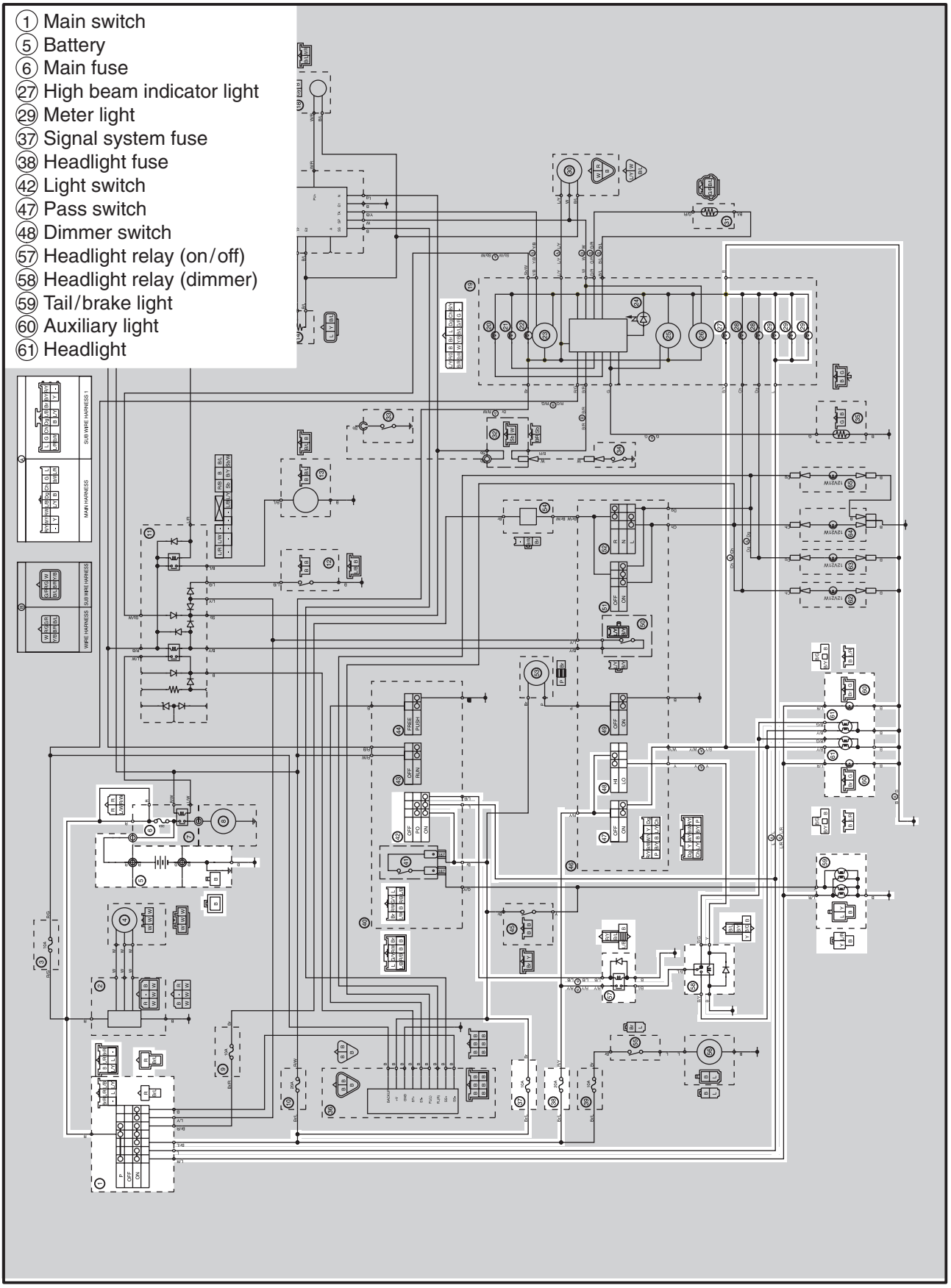


* indicates coupler positions.

EB905000

LIGHTING SYSTEM

CIRCUIT DIAGRAM



EB805020

LIGHTING SYSTEM CHECK

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

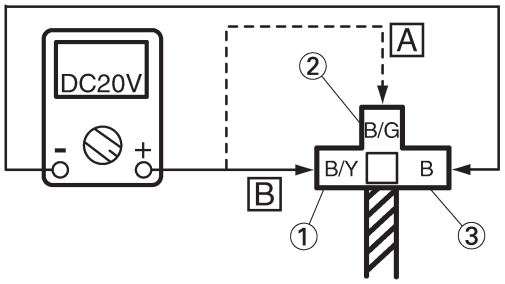
1. Bulb and bulb socket.
• Check the bulb and bulb socket for continuity.

NO CONTINUITY

Replace the bulb and/or bulb socket.

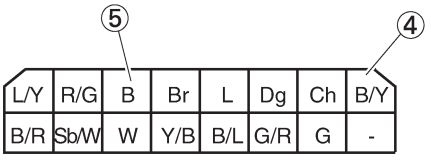
CONTINUITY

2. Voltage
• Connect the pocket tester (DC 20 V) to the headlight and high beam indicator light couplers.
A When the dimmer switch is "LO". B When the dimmer switch is "HI".
Headlight connector



Headlight:
Tester (+) lead → Black/Yellow lead ① or Black/Green lead ②
Tester (–) lead → Black lead ③
High beam indicator light:
Tester (+) lead → Black/Yellow lead ④
Tester (–) lead → Black lead ⑤

B Meter connector



- Turn the main switch to "ON".
- Turn the light switch to "ON".
- Turn the dimmer switch to "LO" or "HI".
- Check the voltage (12 V) of the "Black/Yellow", "Black/Green" and "Black/Yellow" leads on the bulb socket connector.

OUT OF SPECIFICATION

The wiring circuit from the main switch to the bulb socket connector is faulty, repair it.

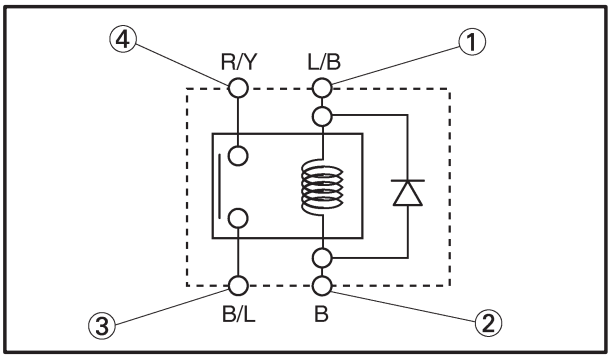
MEETS SPECIFICATION

✳

✻

EB803023

3. Headlight relay (ON/OFF)
• Remove the headlight relay from the wire harness. • Connect the pocket tester (Ω × 1) and battery (12 V) to the headlight relay terminals.
Battery (+) terminal → Blue/Black terminal ① **Battery (–) terminal → Black terminal ②**
Tester (+) lead → Black/Blue terminal ③ **Tester (–) lead → Red/Yellow terminal ④**
• Check the headlight relay for continuity.



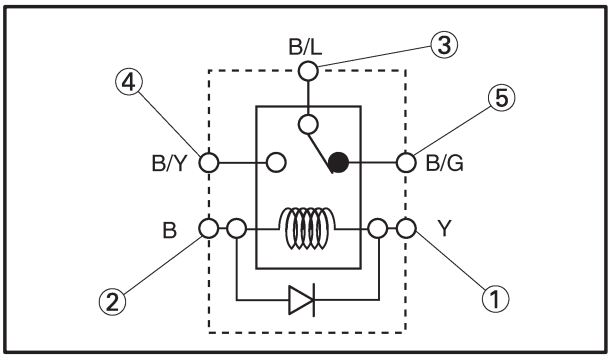
NO CONTINUITY

Replace the headlight relay (ON/OFF).

CONTINUITY

EB803023

4. Headlight relay (Dimmer)	
• Remove the headlight relay from the wire harness. • Connect the pocket tester (Ω × 1) and battery (12 V) to the headlight relay terminals.	
Battery (+) terminal → Yellow terminal ① **Battery (–) terminal → Black terminal ②**	
Tester (+) lead → Black/Blue terminal ③ **Tester (–) lead → Black/Yellow terminal ④**	**CONTINUITY**
Tester (+) lead → Black/Blue terminal ③ **Tester (–) lead → Black/Green terminal ⑤**	**NO CONTINUITY**
• Disconnect the battery.	
Tester (+) lead → Black/Blue terminal ③ **Tester (–) lead → Red/Yellow terminal ④**	**NO CONTINUITY**
Tester (+) lead → Black/Blue terminal ③ **Tester (–) lead → Black/Green terminal ⑤**	**CONTINUITY**



EB803023

• Check the headlight relay for continuity.

NO CONTINUITY → Replace the headlight relay (Dimmer).

CONTINUITY ⇩

EB808022

5. Wiring connections

• Check the connections of the entire lighting system.
Refer to “CIRCUIT DIAGRAM”.

POOR CONNECTION → Properly connect the lighting system.

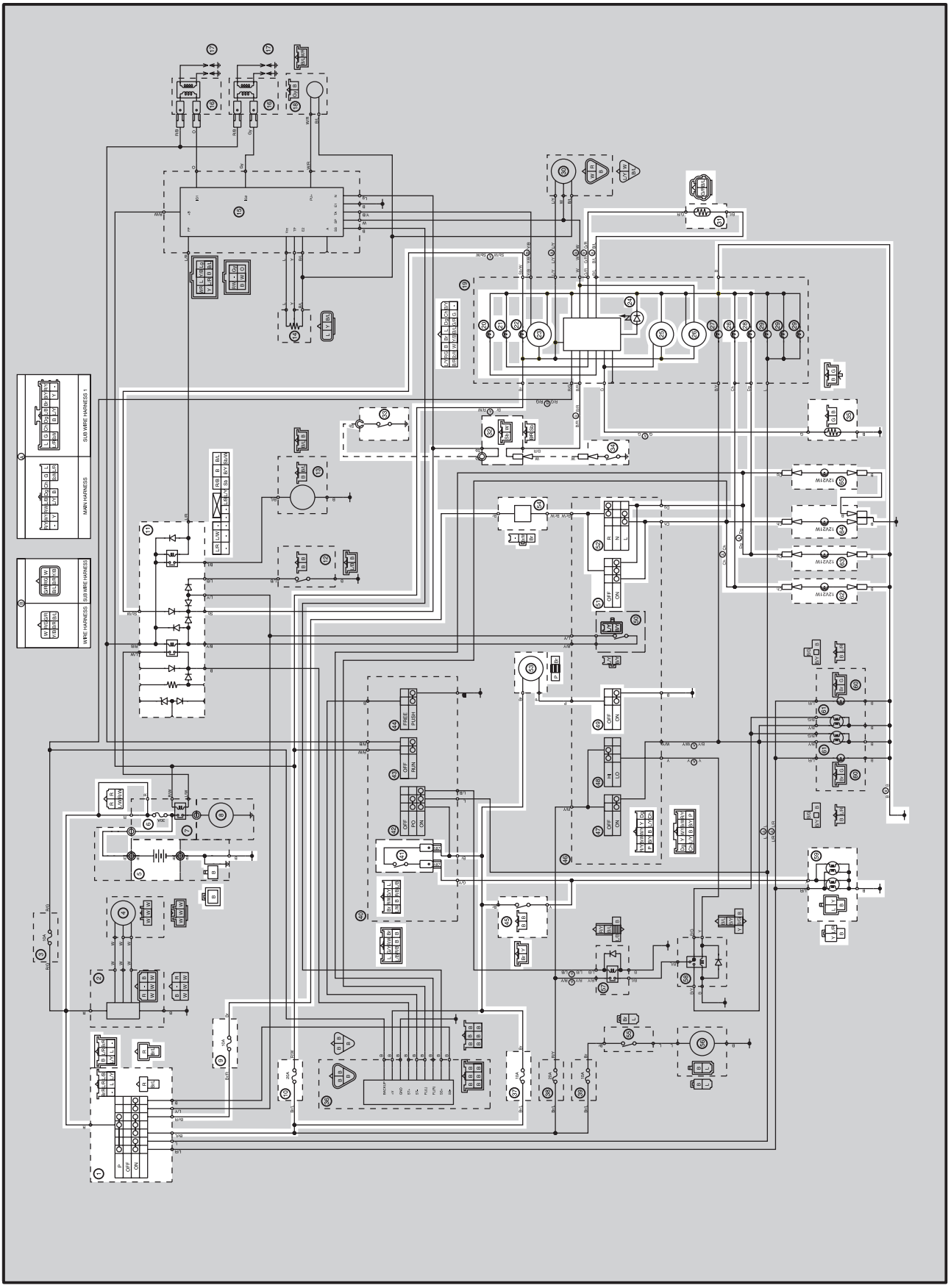
CONTINUITY ⇩

This circuit is not foulty.

EB806000

SIGNAL SYSTEM

CIRCUIT DIAGRAM



① Main switch
⑤ Battery
⑥ Main fuse
⑨ Turn signal fuse
⑩ Ignition fuse
⑪ Starting circuit cut-off relay
㉝ Neutral switch
⑳ Fuel level warning light
㉑ Oil level warning light
㉒ Neutral indicator light
㉓ Tachometer
㉔ Coolant temperature warning light
㉕ Fuel meter
㉖ Speedometer
㉘ Turn signal indicator light
㉛ Thermo unit
㉜ Wire lead
㉝ Neutral switch
㉞ Oil level switch
㉟ Fuel sender
㊲ Signaling system fuse
㊶ Front brake light switch
㊺ Rear brake light switch
㊾ Horn switch
㊿ Hazard switch
(52) Turn signal switch
(53) Horn
(54) Turn signal relay
(59) Tail/brake light
(62) Front turn signal light (left)
(63) Front turn signal light (right)
(64) Rear turn signal light (left)
(65) Rear turn signal light (right)

SIGNAL SYSTEM CHECK

1. If the fuel level warning light fails to come on or the fuel meter fails to operate:

1. Bulb and bulb socket

- Check the bulb and bulb socket for continuity.

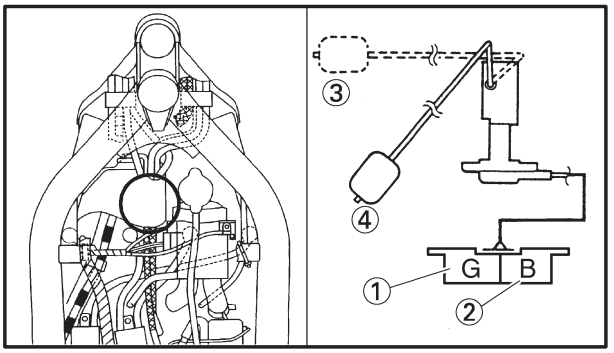
NO CONTINUITY → Replace the bulb and/or bulb socket.

CONTINUITY ⇩

2. Fuel sender

- Drain the fuel and remove the fuel sender from the fuel tank.
- Disconnect the fuel sender coupler from the wire harness.
- Connect the pocket tester (Ω × 1) to the fuel sender.
- Check the fuel sender for continuity.

Tester (+) lead → Green terminal ①
Tester (–) lead → Black terminal ②



- Measure the fuel sender resistance.

Fuel sender resistance
③ : 4 ~ 10 Ω at 20°C
④ : 122.5 ~ 128.5 Ω at 20°C

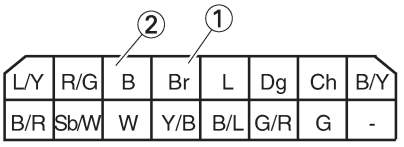
OUT OF SPECIFICATION → Replace the fuel sender.

MEETS SPECIFICATION ⇩

3. Voltage

- Connect the pocket tester (DC 20 V) to the meter assembly coupler.

Tester (+) lead → Brown terminal ①
Tester (–) lead → BLACK terminal ②



- Drain the fuel.
- Turn the main switch to "ON".
- Check the voltage (12 V).

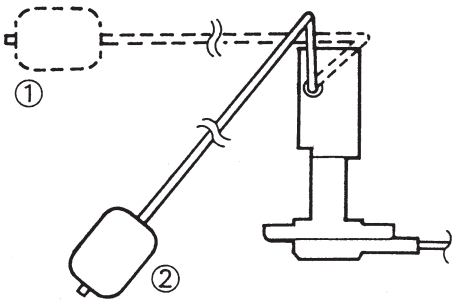
OUT OF SPECIFICATION → The wiring circuit from the main switch to the bulb socket connector is faulty, repair it.

MEETS SPECIFICATION ⇩

✳

4. Fuel meter

- Drain the fuel and remove the fuel sender from the fuel tank.
- Connect the fuel sender to wireharness.
- Move the float to "UP" ① or "DOWN" ②.



- Turn the main switch to "ON".
- Check the fuel gauge needle moves "F" or "E".

Float position	Needle moves
Float "UP" ①	**"F"**
Float "DOWN" ②	**"E"**

MOVE

This circuit is not faulty

NOTE:

Before reading the meter, stay put the float for more than three minutes respectively at "UP" or "DOWN".

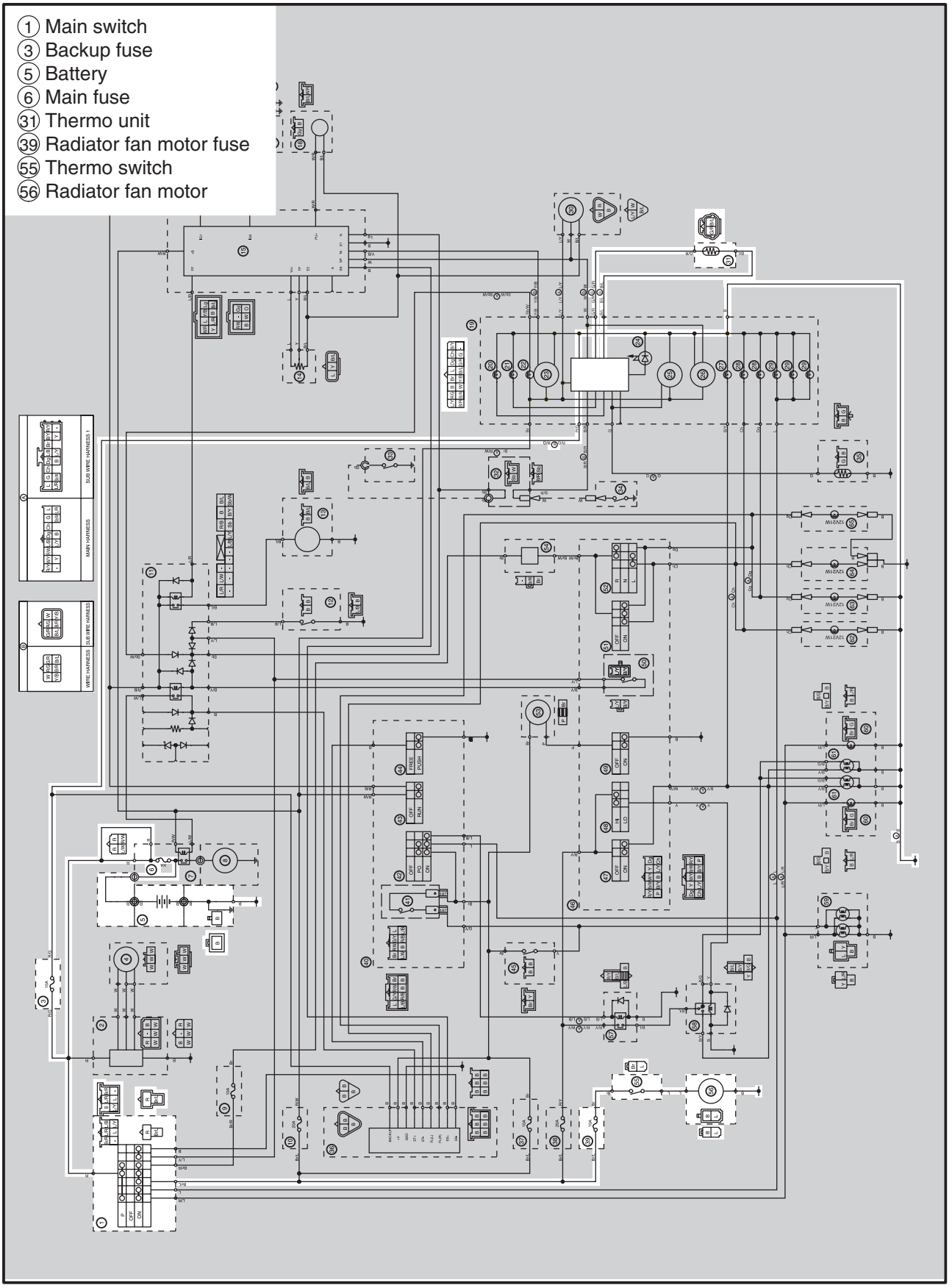
DOES NOT MOVE

Replace the fuel meter.

EB807000

COOLING SYSTEM

CIRCUIT DIAGRAM



EB807010

TROUBLESHOOTING

IF THE FAN MOTOR FAILS TO TURN:
IF THE COOLANT TEMPERTATURE METER FAILS TO MOVE, WHEN THE ENGINE IS WARM:

Procedure

Check:

1. Fuses (main, signal and fan)
2. Battery
3. Main switch
4. Fan motor
5. Thermo switch
6. Thermo unit
7. Coolant temperature warning light
8. Voltage
9. Wiring connections (the entire cooling system)

NOTE:

- Remove the following part(s) before troubleshooting.
  1) Seat
  2) Fuel tank
  3) Front cowling assembly
- Use the following special tool(s) for troubleshooting.

Pocket tester:
90890-03112

EB802011

1. Fuses (main, signal and fan)

- Remove the fuses.
- Connect the pocket tester (Ω × 1) to the fuses.
- Check the fuses for continuity.

NO CONTINUITY → Replace the fuse(s).

CONTINUITY ⇩

EB802012

2. Battery

- Check the battery condition.
  Refer to "BATTERY INSPECTION" in CHAPTER 3. (Manual No.: 5DM1-AE1)

Open-circuit voltage:
12.8 V or more at 20°C

INCORRECT →

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

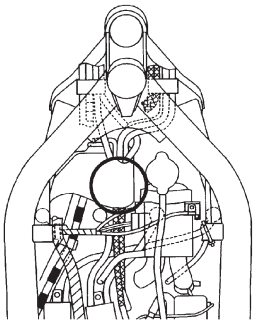
CORRECT ⇩

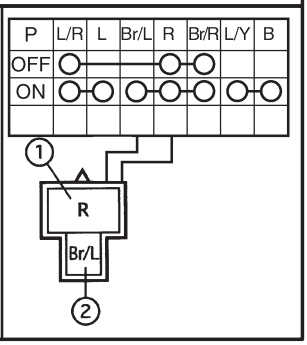
✳

EB802017

3. Main switch

- Disconnect the main switch coupler from the wire harness.
- Check for continuity as follows:
  Red ① – Brown/Blue ②





NO CONTINUITY

Replace the main switch.

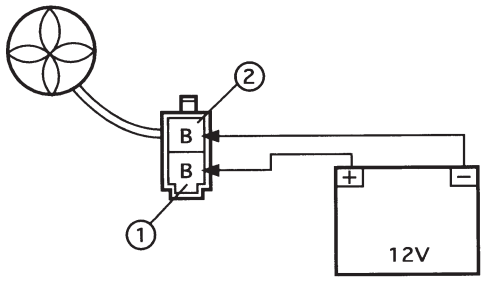
CONTINUITY

EB807011

4. Fan motor

- Disconnect the fan motor coupler.
- Connect the battery (12 V) as shown.

Battery (+) lead → Black terminal ①
Battery (–) led → Black terminal ②



- Check the operation of the fan motor.

DOES NOT MOVE

The fan motor is faulty, replace it.

MOVES

✳

⇩

EB802017

5. Thermo switch

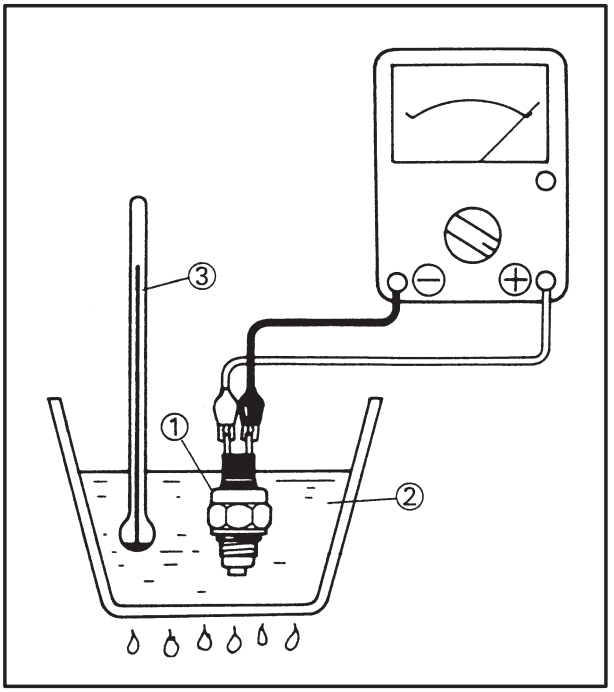
- Remove the thermo switch from the thermostat housing.
- Connect the pocket tester (Ω × 1) to the thermo switch ①.
- Immerse the thermo switch in coolant ②.
- Check the thermo switch for continuity. While heating the coolant use a thermometer ③ to record the temperatures.

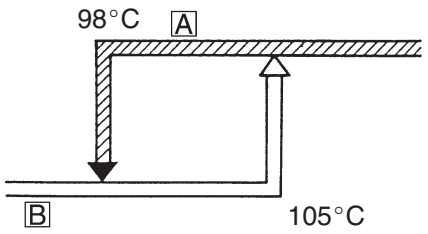
Test step	Water temperature / Thermo switch	Good condition
1	0 ~ 105°C	×
2	More than 105°C	○
3*	105 to 98°C	○
4*	Les than 98°C	×

Tests 1 & 2; Heat-up tests
Tests 3* & 4*; Cool-down tests
○: Continuity ×: No continuity

⚠ WARNING

Handle the thermo switch with special care. Never subject it to strong shocks or allow it to be dropped. Should it be dropped, it must be replaced.





A THERMO SWITCH "ON"
B THERMO SWITCH "OFF"

BAD CONDITION

Replace the thermo switch.

⇩ GOOD CONDITION

✳

EAS00812

6. Thermo unit

- Remove the thermo unit from the thermostat housing.
- Connect the pocket tester (Ω × 1) to the termo unit ① as shown.
- Immerse the thermo unit in a container filled with coolant ②.

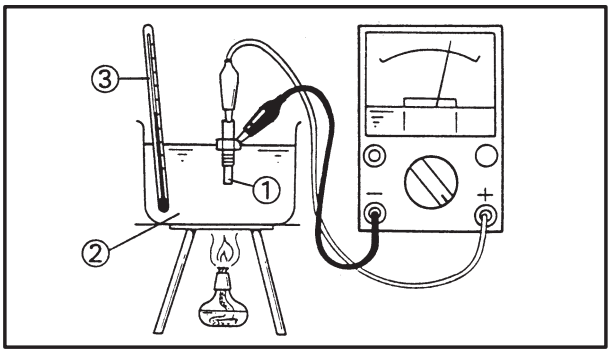
NOTE:
Make sure the hermo unit terminals do not get wet.

- Place a thermometer ③ in the coolant.
- Slowly heat the coolant, and then let it cool to the specified temperature indicated in the table.
- Check the thermo unit for continuity at the temperatures indicated in the table.

Thermo unit resistance
80°C: 3.4 kΩ ~ 4.0 kΩ
105°C: 1.6 kΩ ~ 1.9 kΩ

⚠ WARNING

Handle the thermo unit with special care. Never subject the thermo unit to strong shocks. If the thermo unit is dropped, replace it.



BAD CONDITION

Replace the thermo unit.

GOOD CONDITION

7. Coolant temperature warning light

- Check the LED for continuity.

NO CONTINUITY

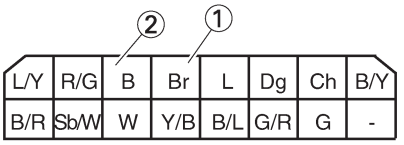
Replace the meter assembly.

CONTINUITY

8. Voltage

- Connect the pocket tester (DC 20 V) to the meter coupler.

Tester (+) lead → Brown lead ①
Tester (–) lead → Black lead ②



- Turn the main switch to "ON".
- Check the voltage (12 V).

OUT OF SPECIFICATION

The wiring circuit from the main switch to meter coupler is faulty, repair it.

MEETS SPECIFICATION

✳

9. Wiring connections

- Check the connections of the entire cooling system.
  Refer to “CIRCUIT DIAGRAM”.

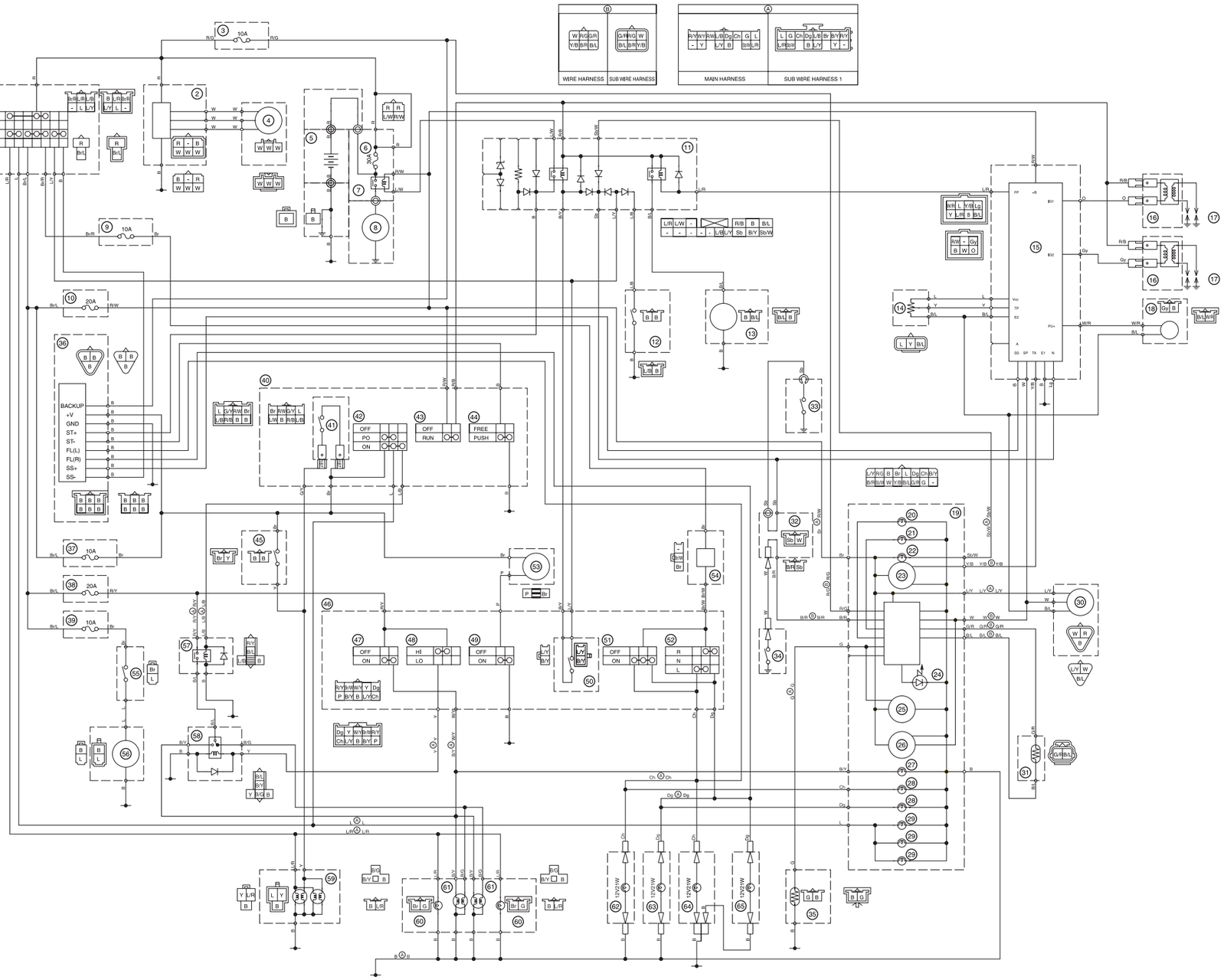
POOR CONNECTION

Properly connect the cooling system.

CORRECT

This circuit is not faulty.

FZS600 (P) 2002 WIRING DIAGRAM (EUR)

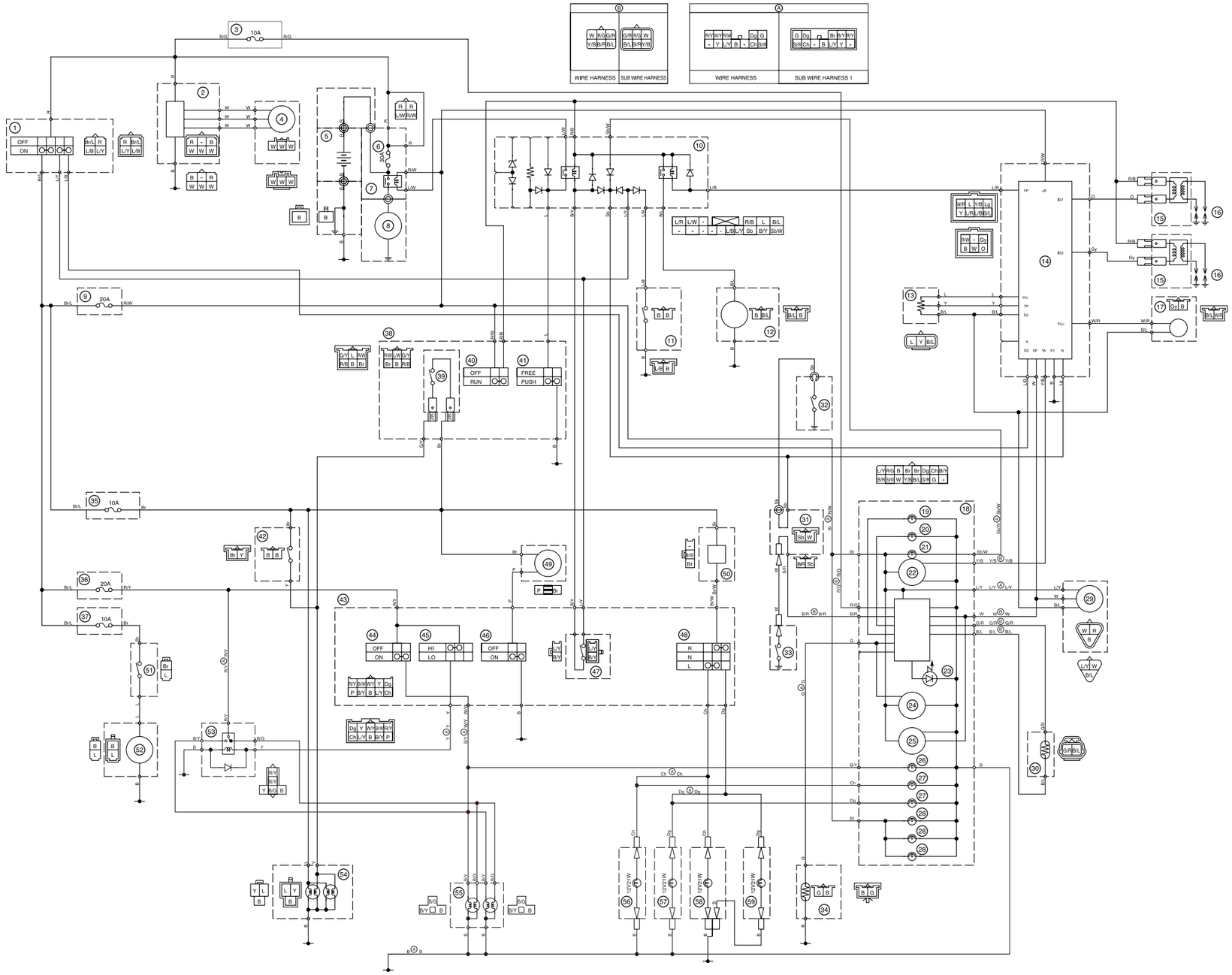


1. Main switch
2. Rectifier/Regulator
3. Backup fuse
4. Generator
5. Battery
6. Main fuse
7. Starter relay
8. Starter motor
9. Turn signal fuse
10. Ignition fuse
11. Starting circuit cut-off relay
12. Sidestand switch
13. Fuel pump
14. Throttle position sensor
15. Ignitor unit
16. Ignition coil
17. Spark plug
18. Pick up coil
19. Meter assembly
20. Fuel level warning light
21. Oil level warning light
22. Neutral indicator light
23. Tachometer
24. Coolant temperature warning light
25. Fuel meter
26. Speedometer
27. High beam indicator light
28. Turn signal indicator light
29. Meter light
30. Speed sensor
31. Thermo unit
32. Wire lead
33. Neutral switch
34. Oil level switch
35. Fuel sender
36. Alarm
37. Signaling system fuse
38. Hedlight fuse
39. Rdiator fan motor fuse
40. Right handlebar switch
41. Front brake light switch
42. Light switch
43. Engine stop switch
44. Start switch
45. Rear brake light switch
46. Left handlebar switch
47. Pass switch
48. Dimmer switch
49. Horn switch
50. Clutch switch
51. Hazard switch
52. Turn signal switch
53. Horn
54. Turn signal relay
55. Thermo switch
56. Radiator fan motor
57. Headlight relay (on/off)
58. Headlight relay (dimmer)
59. Tail/brake light
60. Auxiliary light
61. Headlight
62. Front turn signal light (left)
63. Front turn signal light (right)
64. Rear turn signal light (left)
65. Rear turn signal light (right)

COLOR CODE

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

FZS600N (P) 2002 WIRING DIAGRAM (OCE)



1. Main switch
2. Rectifier/Regulator
3. Backup fuse
4. Generator
5. Battery
6. Main fuse
7. Starter relay
8. Starter motor
9. Ignition fuse
10. Starting circuit cut-off relay
11. Sidestand switch
12. Fuel pump
13. Throttle position sensor
14. Ignitor unit
15. Ignition coil
16. Spark plug
17. Pick up coil
18. Meter assembly
19. Fuel level warning light
20. Oil level warning light
21. Neutral indicator light
22. Tachometer
23. Coolant temperature warning light
24. Fuel meter
25. Speedometer
26. High beam indicator light
27. Turn signal indicator light
28. Meter light
29. Speed sensor
30. Thermo unit
31. Wire lead
32. Neutral switch
33. Oil level switch
34. Fuel sender
35. Signaling system fuse
36. Headlight fuse
37. Radiator fan motor fuse
38. Right handlebar switch
39. Front brake light switch
40. Engine stop switch
41. Start switch
42. Rear brake light switch
43. Left handlebar switch
44. Pass switch
45. Dimmer switch
46. Horn switch
47. Clutch switch
48. Turn signal switch
49. Horn
50. Turn signal relay
51. Thermo switch
52. Radiator fan motor
53. Headlight relay (dimmer)
54. Tail/brake light
55. Headlight
56. Front turn signal light (left)
57. Front turn signal light (right)
58. Rear turn signal light (left)
59. Rear turn signal light (right)

COLOR CODE

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