YAMAHA 2018

SUPPLEMENTARY SERVICE MANUAL

XSR700

MTM690
MTM690-U

BU3-F8197-E0

EAS20236

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and data for the MTM690/MTM690-U 2018. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

MTM690/MTM690-U 2018 SERVICE MANUAL: B34-F8197-E2

EAS20002

MTM690/MTM690-U
SUPPLEMENTARY SERVICE MANUAL

First edition, February 2018

EAS20003
IMPORTANT

This manual was produced by MBK Industrie 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. and MBK Industrie are continually striving to improve all of its models. Modifications and significant changes in specifications or procedures will be forwarded to all authorized Yamaha dealers and will appear in future editions of this manual where applicable.

TIP

Designs and specifications are subject to change without notice.

EAS30001
IMPORTANT MANUAL INFORMATION

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

⚠	**This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.**

⚠ WARNING	**A WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.**

NOTICE	**A NOTICE indicates special precautions that must be taken to avoid damage to the vehicle or other property.**

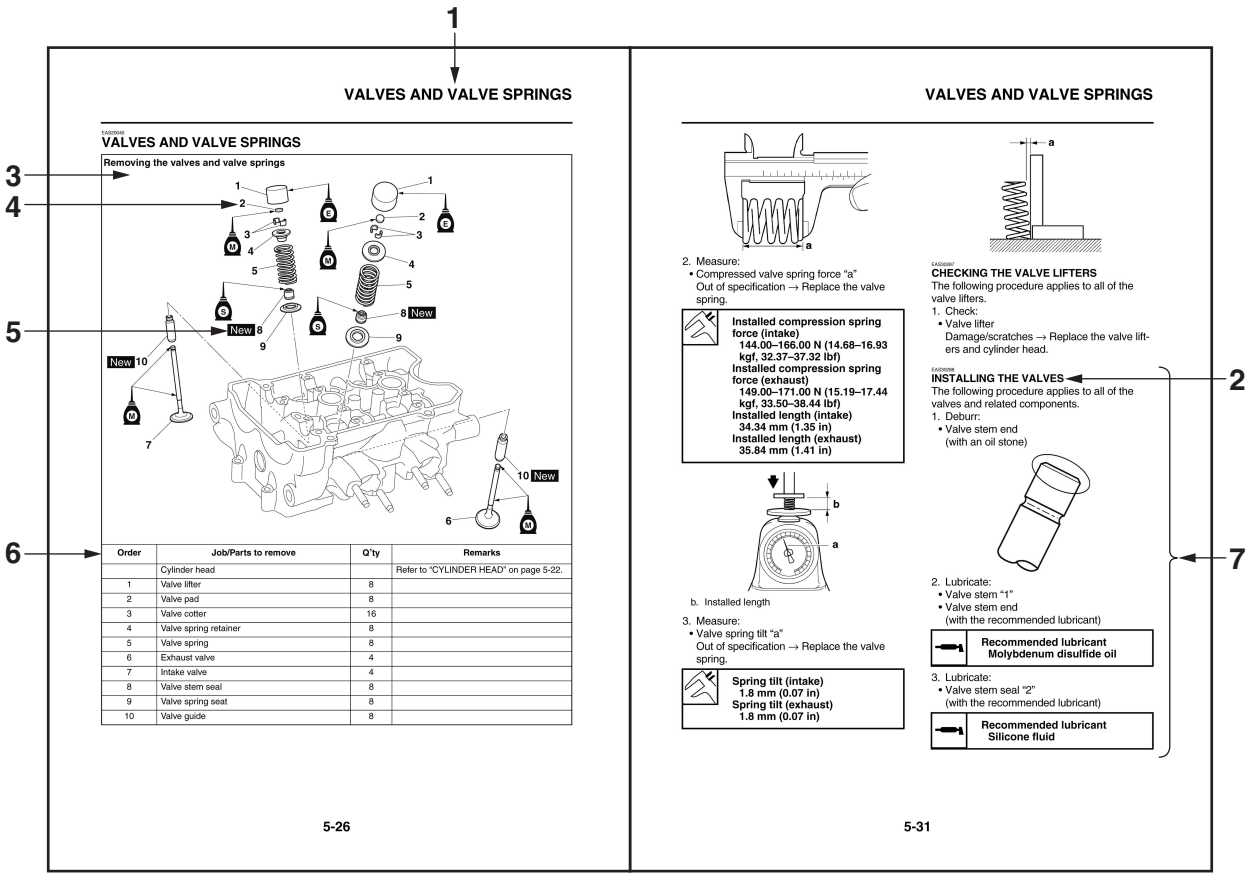
TIP	A TIP provides key information to make procedures easier or clearer.

EAS20004

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.

- The manual is divided into chapters and each chapter is divided into sections. The current section title "1" is shown at the top of each page.
- Sub-section titles "2" appear in smaller print than the section title.
- To help identify parts and clarify procedure steps, there are exploded diagrams "3" at the start of each removal and disassembly section.
- Numbers "4" are given in the order of the jobs in the exploded diagram. A number indicates a disassembly step.
- Symbols "5" indicate parts to be lubricated or replaced.
  Refer to "SYMBOLS".
- A job instruction chart "6" accompanies the exploded diagram, providing the order of jobs, names of parts, notes in jobs, etc. This step explains removal and disassembly procedure only. For installation and assembly procedure, reverse the steps.
- Jobs "7" requiring more information (such as special tools and technical data) are described sequentially.



EAS20005
SYMBOLS

The following symbols are used in this manual for easier understanding.

TIP

The following symbols are not relevant to every vehicle.

SYMBOL	DEFINITION	SYMBOL	DEFINITION
	Serviceable with engine mounted		Gear oil
	Filling fluid		Molybdenum disulfide oil
	Lubricant		Brake fluid
	Special tool		Wheel bearing grease
	Tightening torque		Lithium-soap-based grease
	Wear limit, clearance		Molybdenum disulfide grease
	Engine speed		Silicone grease
	Electrical data		Apply locking agent (LOCTITE®).
	Engine oil		Replace the part with a new one.
	Silicone fluid		

EAS10003

TABLE OF CONTENTS

SPECIAL TOOLS 1

GENERAL SPECIFICATIONS 2

ELECTRICAL SPECIFICATIONS 3

CABLE ROUTING 5

PERIODIC MAINTENANCE 21
- INTRODUCTION 21
- PERIODIC MAINTENANCE CHART FOR THE EMISSION CONTROL SYSTEM 21
- GENERAL MAINTENANCE AND LUBRICATION CHART 21
- CHECKING THE VEHICLE USING THE YAMAHA DIAGNOSTIC TOOL 24
- CHECKING THE EXHAUST SYSTEM 24

GENERAL CHASSIS (3) 25

GENERAL CHASSIS (5) 26
- REMOVING THE ECU (engine control unit) 28
- INSTALLING THE ECU (engine control unit) 28

HANDLEBAR 29

FRONT FORK 31

STEERING HEAD 33

SWINGARM 35

FUEL TANK 38

IGNITION SYSTEM 41
- CIRCUIT DIAGRAM 41
- TROUBLESHOOTING 43

LIGHTING SYSTEM 45
- CIRCUIT DIAGRAM 45
- TROUBLESHOOTING 47

SIGNALING SYSTEM 49
CIRCUIT DIAGRAM 49
TROUBLESHOOTING 51

COOLING SYSTEM 57
CIRCUIT DIAGRAM 57
TROUBLESHOOTING 59

FUEL INJECTION SYSTEM 61
CIRCUIT DIAGRAM 61
TROUBLESHOOTING DETAILS (FAULT CODE) 63
TROUBLESHOOTING DETAILS (EVENT CODE) 69

ABS (ANTI-LOCK BRAKE SYSTEM) 71
CIRCUIT DIAGRAM 71
ABS COUPLER LOCATION CHART 73
[B-2] DIAGNOSIS USING THE FAULT CODES 75

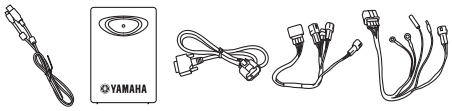
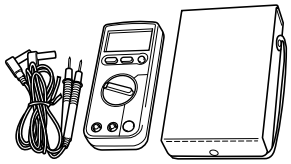
ELECTRICAL COMPONENTS 79
CHECKING THE FUSES 81

EAS20012
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.

TIP

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

Tool name/Tool No.	Illustration	Reference pages
Yamaha diagnostic tool USB 90890-03256		24
Yamaha diagnostic tool (A/I) 90890-03262		24
Digital circuit tester (CD732) 90890-03243 Model 88 Multimeter with tachometer YU-A1927		81

EAS20013
GENERAL SPECIFICATIONS

Model

Model	BU31 (MTM690) B9J1 (MTM690-U)

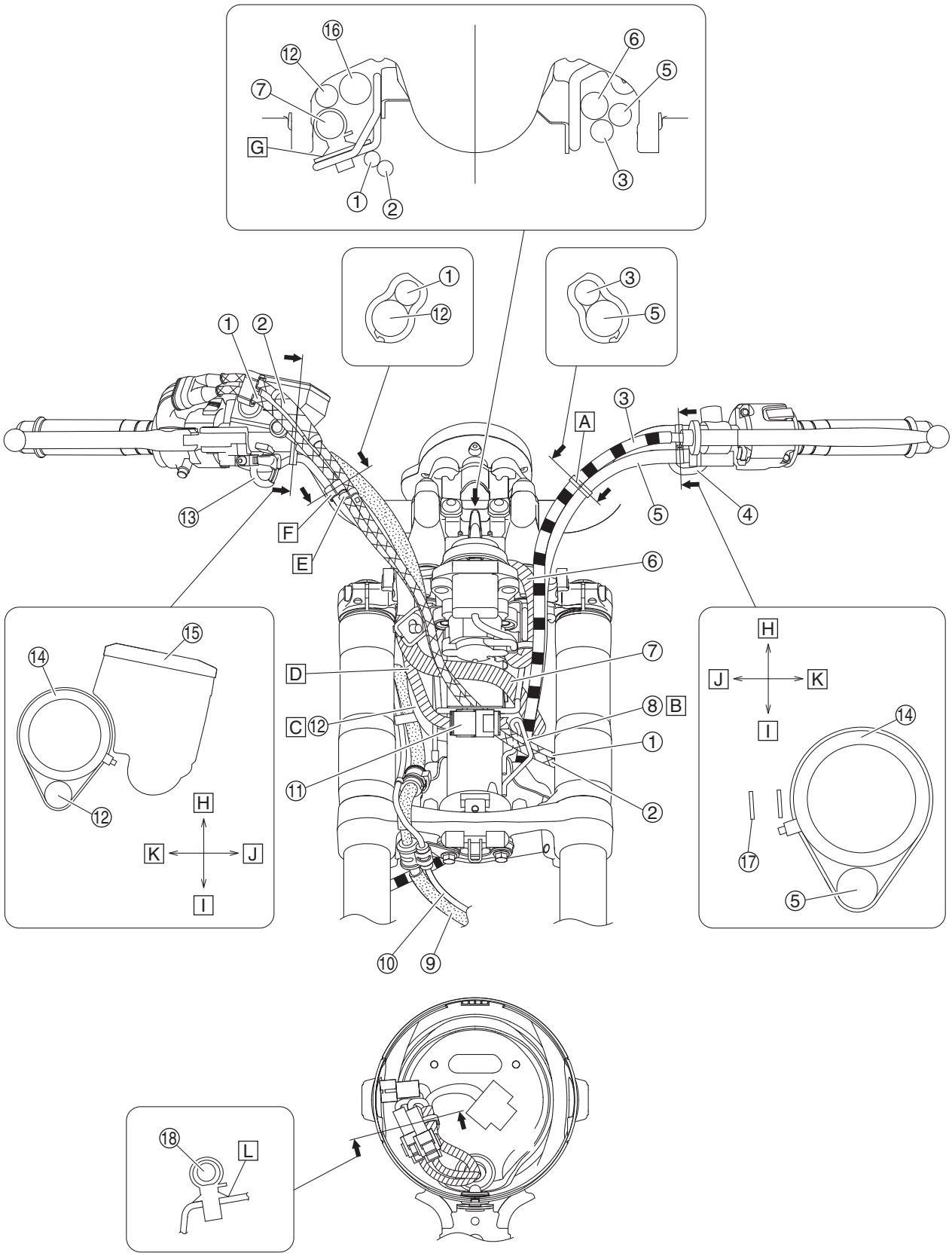
EAS20016
ELECTRICAL SPECIFICATIONS

Fuse

Backup fuse 2	10.0 A

EAS20021
CABLE ROUTING

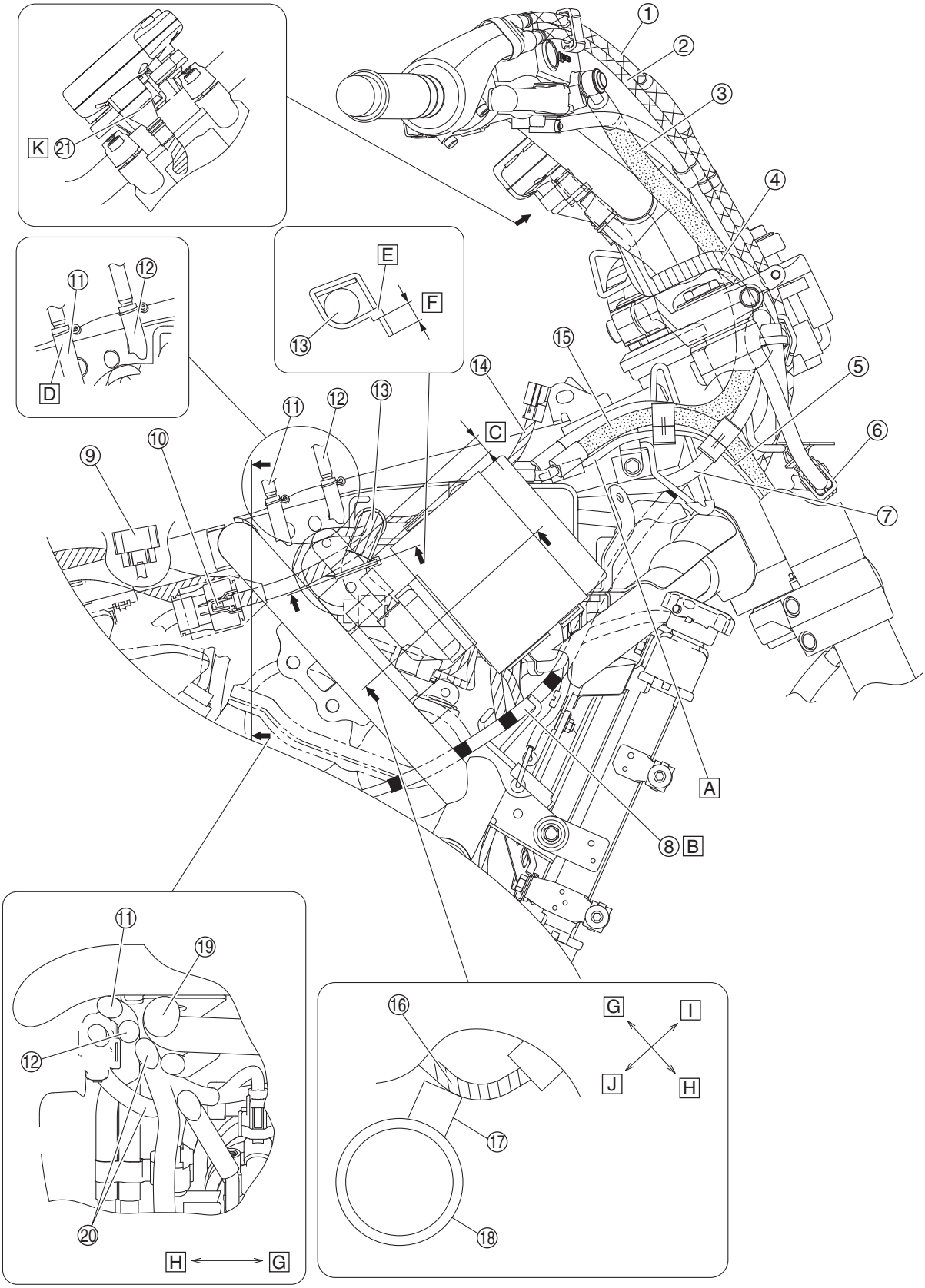
Handlebar (front view)



1. Throttle cable (decelerator cable)
2. Throttle cable (accelerator cable)
3. Clutch cable
4. Clutch switch lead
5. Handlebar switch lead (left handlebar switch)
6. Main switch lead
7. Wire harness
8. Cable guide
9. Brake hose (hydraulic unit to left front brake caliper)
10. Front wheel sensor lead
11. Sub-wire harness coupler (headlight, turn signal light, auxiliary light)
12. Handlebar switch lead (right handlebar switch)
13. Front brake light switch lead
14. Handlebar
15. Front brake master cylinder assembly
16. Brake hose (front brake master cylinder to hydraulic unit)
17. Clutch lever holder
18. Sub-wire harness (headlight, turn signal light)

A. Fasten the handlebar switch lead (left handlebar switch) and clutch cable with the holder. Align the holder with the blue tape on the handlebar switch lead.
B. Route the throttle cables through the guide. Be sure to route the throttle cable (decelerator cable) over the throttle cable (accelerator cable).
C. Route the handlebar switch lead (right handlebar switch) to the inside of the front brake hose and front wheel sensor lead.
D. Route the headlight lead under the wire harness.
E. Make sure that the holder contacts the holder that is securing the handlebar switch lead (right handlebar switch) and throttle cable (decelerator cable).
F. Fasten the handlebar switch lead (right handlebar switch) and throttle cable (decelerator cable) with the holder. Align the holder with the blue tape on the handlebar switch lead.
G. Insert the projection on the wire harness holder into the hole in the hose bracket.
H. Upward
I. Downward
J. Forward
K. Rearward
L. Insert the projection on the headlight lead holder into the hole in the headlight body.

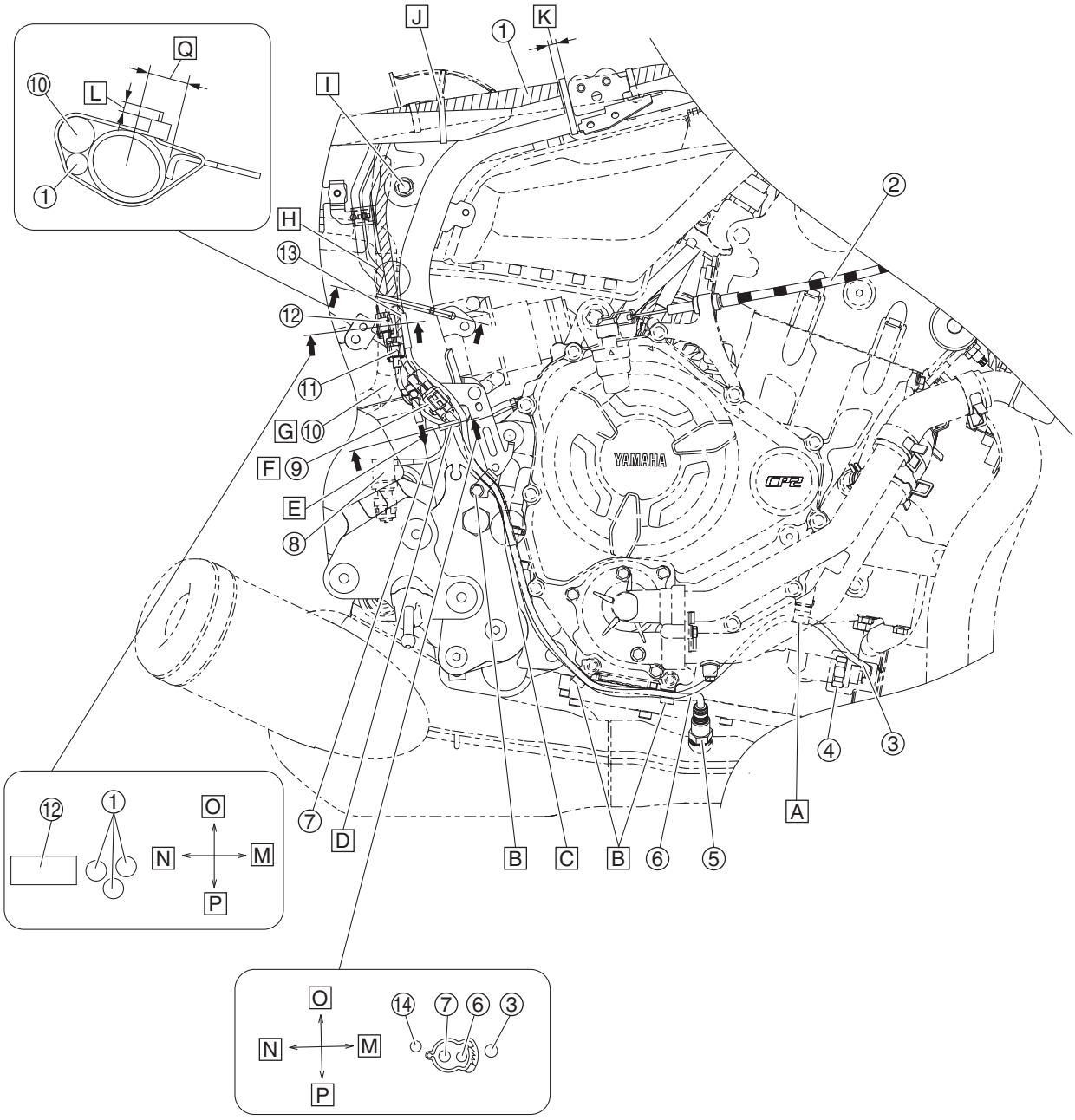
ECU and clutch cable (right side view)



1. Throttle cable (accelerator cable)
2. Throttle cable (decelerator cable)
3. Brake hose (front brake master cylinder to hydraulic unit)
4. Wire harness (to meter assembly)
5. Front wheel sensor lead
6. Sub-wire harness coupler (headlight, turn signal light, auxiliary light)
7. Handlebar switch lead (right handlebar switch)
8. Clutch cable
9. Fuel pump coupler
10. Sub-wire harness coupler (gear position switch, coolant temperature sensor, fuel injector)
11. Fuel tank breather hose
12. Fuel tank overflow hose
13. Wire harness
14. Intake air temperature sensor coupler
15. Brake hose (hydraulic unit to left front brake caliper)
16. Wire harness (to ECU)
17. Damper
18. Frame
19. Cylinder head breather hose
20. Sub-wire harness (gear position switch, coolant temperature sensor, fuel injector)
21. Meter assembly coupler cover

A. Position the front wheel sensor lead and coupler to the inside of the frame bracket nut.
B. Route the clutch cable through the guide as shown in the illustration.
C. Fasten the wire harness to the frame bracket with a plastic locking tie. Be sure to position the plastic locking tie below the bent portion of the bracket.
D. Blue paint mark
E. Point the end of the plastic locking tie inward.
F. Cut off the excess end of the plastic locking tie to 5 mm (0.20 in) or less.
G. Inward
H. Outward
I. Forward
J. Rearward
K. After connecting the meter assembly coupler, install the coupler cover completely until it contacts the meter assembly.

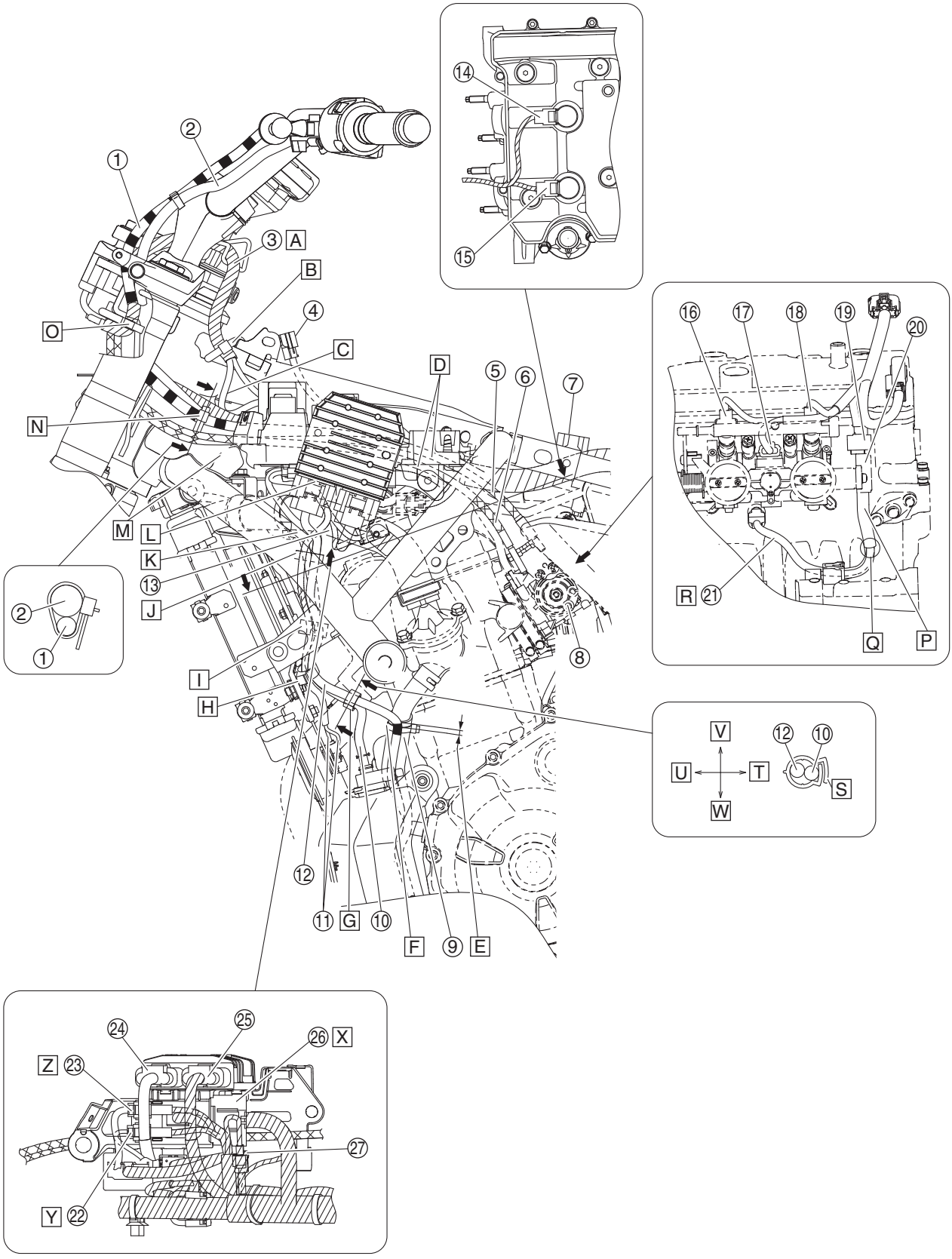
Engine (right side view)



1. Wire harness
2. Clutch cable
3. Oil pressure switch lead
4. Oil pressure switch
5. O_2 sensor
6. O_2 sensor lead
7. Rear brake light switch lead
8. Rear brake light switch
9. O_2 sensor coupler
10. Brake fluid reservoir hose
11. Rear brake light switch coupler
12. Rear wheel sensor coupler
13. Oil pressure switch connector
14. Rear wheel sensor lead

A. Route the oil pressure switch lead through the guide, and then secure the lead by bending the guide around the lead.
B. Route the oil pressure switch lead to the inside of the O_2 sensor lead, and then secure the leads by bending the guides around the leads.
C. Do not pinch the O_2 sensor lead between the pivot shaft protector and the engine.
D. Fasten the rear brake light switch lead and O_2 sensor lead with the holder.
E. To rear brake caliper bracket
F. Connect the O_2 sensor coupler, and then insert the projection on the coupler into the hole in the bracket.
G. Route the brake fluid reservoir hose to the inside of the frame and above of the leads.
H. Make sure that the wire harness is not pinched between the pivot shaft protector (right) and the frame.
I. Route the wire harness to the inside of the bracket as shown in the illustration so that the harness does not contact the air filter case bolt flange.
J. Pass a plastic locking tie through the hole in the frame, and then fasten the wire harness at the white tape with the tie.
K. Fasten the wire harness with a plastic locking tie between the fuel tank bracket and the sub-frame.
L. Less than 10 mm (0.39 in)
M. Forward
N. Rearward
O. Inward
P. Outward
Q. Position the end of the plastic locking tie within the range shown in the illustration.

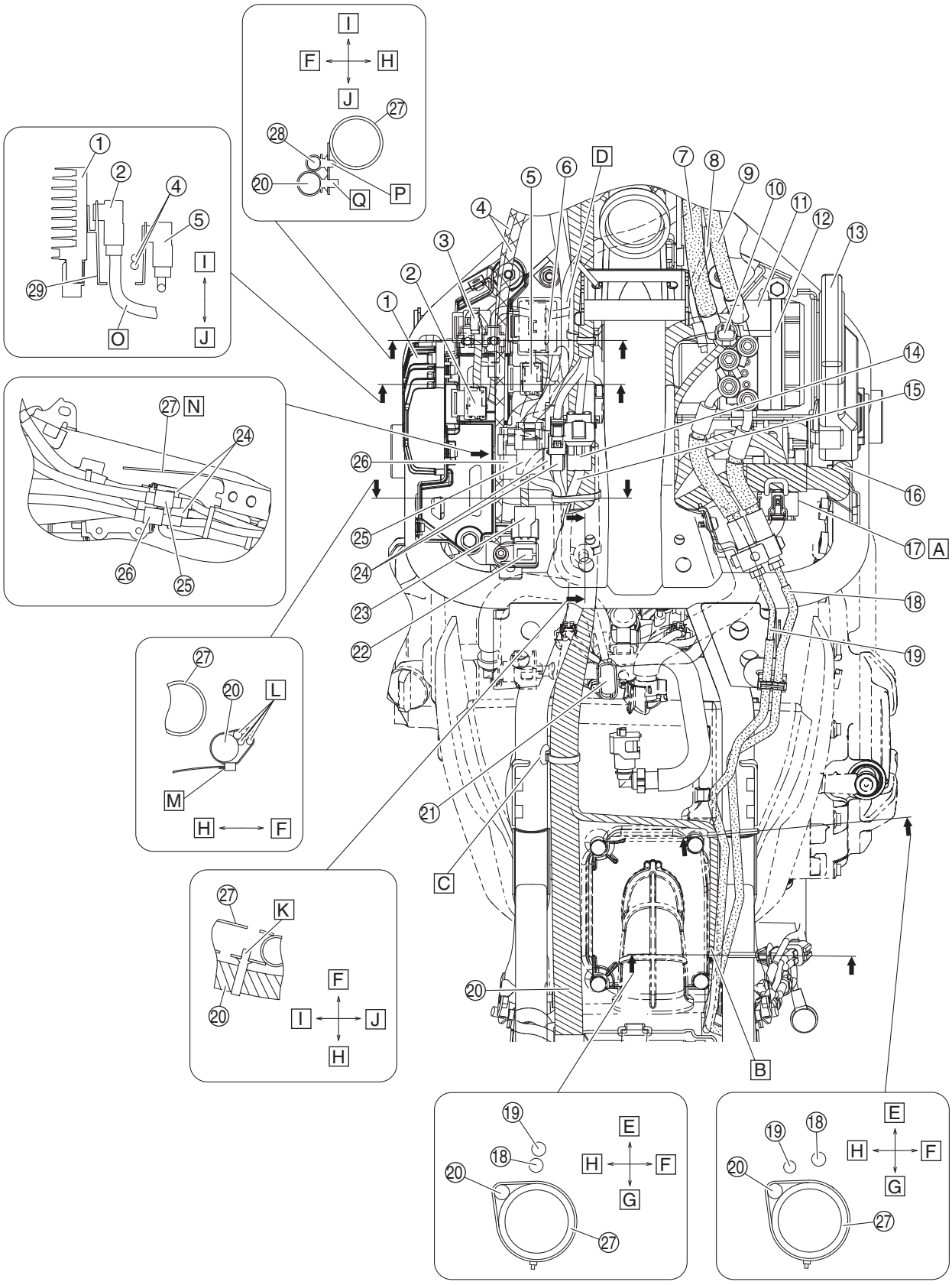
Rectifier/regulator (left side view)



1. Clutch cable
2. Handlebar switch lead (left handlebar switch)
3. Main switch lead
4. Intake air temperature sensor coupler
5. Throttle cable (decelerator cable)
6. Throttle cable (accelerator cable)
7. Fuel pump coupler
8. Throttle body assembly
9. Oil cooler inlet hose
10. Coolant reservoir hose
11. Horn lead
12. AC magneto lead
13. Radiator inlet hose
14. Ignition coil #2 coupler
15. Ignition coil #1 coupler
16. Injector #1 coupler
17. ISC (Idle Speed Control) unit coupler
18. Injector #2 coupler
19. Throttle position sensor coupler
20. Throttle position sensor
21. Coolant temperature sensor lead
22. Crankshaft position sensor coupler
23. Radiator fan motor coupler
24. AC magneto lead coupler
25. Rectifier/regulator coupler
26. Joint coupler
27. Auxiliary DC outlet coupler

A. Route the main switch lead between the lower handlebar holder and the guide.
B. Fasten the main switch lead at the tape with a plastic band. Face the buckle of the plastic band forward with the end pointing downward.
C. Position the slack of the main switch lead between the wire harness and the left handlebar switch lead.
D. Make sure that the throttle cables do not cross between the guide on the frame and the throttle body.
E. 5–10 mm (0.20–0.39 in)
F. Fasten the AC magneto lead to the oil cooler inlet hose with a plastic locking tie. Make sure to route the AC magneto lead to the outside of the oil cooler inlet hose. Align the plastic locking tie with the blue tape on the AC magneto lead. Face the buckle of the plastic locking tie rearward, and then cut off the excess end of the tie to 2 mm (0.08 in) or less.
G. Fasten the AC magneto lead and coolant reservoir hose with the holder at the location shown in the illustration. Make sure that there is no slack in the AC magneto lead.
H. Secure the holder by inserting the projection on the holder into the hole in the radiator fan motor bracket, and then fasten the AC magneto lead, horn lead, and coolant reservoir hose with the holder. Make sure that the coolant reservoir hose and leads do not cross between the oil cooler inlet hose and this holder.
I. Fasten the AC magneto lead, horn lead, and coolant reservoir hose with the holder.
J. Fasten the AC magneto lead, horn lead, and coolant reservoir hose with the holder at the location shown in the illustration. Make sure that there is no slack in the AC magneto lead, horn lead, and coolant reservoir hose.
K. Route the rectifier/regulator lead to the inside of the radiator inlet hose.
L. Route the AC magneto lead to the inside of the radiator inlet hose, and then connect the AC magneto coupler to the rectifier/regulator.
M. Route the clutch cable through the hole in the cover.
N. Turn the handlebar all the way to the right, and then fasten the clutch cable and left handlebar switch lead with a plastic band at the location shown in the illustration. Align the plastic locking tie with the tape on the left handlebar switch lead. Face the buckle of the plastic locking tie outward with the end pointing downward.
O. Fasten the main switch lead and immobilizer unit lead at the tape on the main switch lead to the guide with a plastic band. Face the buckle of the plastic band inward with the end pointing forward.
P. Route the coolant temperature sensor lead and gear position switch lead between the throttle position sensor and the cylinder head.
Q. The gear position switch lead and coolant temperature sensor lead may be positioned and routed in any order. Make sure that there is no slack in the gear position switch lead.
R. Route the coolant temperature sensor lead to the front of the gear position switch lead.
S. Face the catch of the holder inward.
T. Inward
U. Outward
V. Upward
W. Downward
X. Install the joint coupler completely onto the tab on the electrical components tray 1.
Y. Connect the coupler, and then insert the projection on the coupler into the hole in the electrical components tray 1.
Z. Connect the coupler, and then insert the projection on the coupler into the hole in the electrical components tray 1.

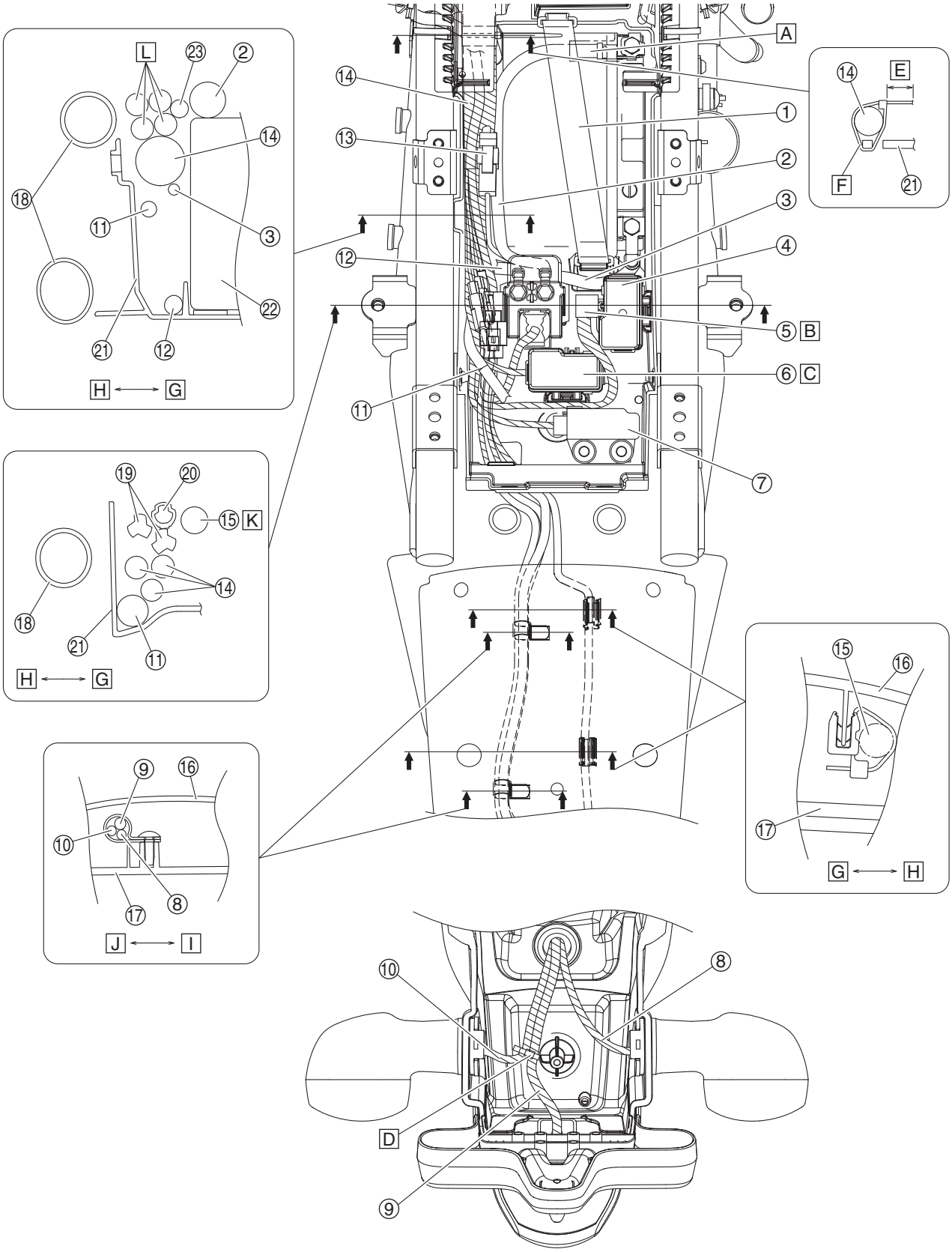
Electrical components tray (top view)



1. Rectifier/regulator
2. Headlight relay
3. Turn signal/hazard relay
4. Throttle cable
5. Radiator fan motor relay
6. Relay unit
7. Brake hose (front brake master cylinder to hydraulic unit)
8. Front wheel sensor lead
9. Brake hose (hydraulic unit to left front brake caliper)
10. Intake air temperature sensor coupler
11. ABS ECU coupler
12. Hydraulic unit assembly
13. ECU (Engine Control Unit)
14. Immobilizer unit coupler
15. Immobilizer unit lead
16. Wire harness (to ECU)
17. Sub-wire harness coupler (gear position switch, coolant temperature sensor, fuel injector)
18. Brake pipe (hydraulic unit to rear brake caliper)
19. Brake pipe (rear brake master cylinder to hydraulic unit)
20. Wire harness
21. Fuel pump coupler
22. Intake air pressure sensor
23. Intake air pressure sensor coupler
24. Main switch coupler
25. Handlebar switch coupler (right handlebar switch)
26. Handlebar switch coupler (left handlebar switch)
27. Frame
28. Main switch lead
29. Electrical components tray 1

A. Insert the projection on the bracket into the hole in the sub-wire harness coupler.
B. White paint mark
C. Insert the projection on the wire harness holder into the hole in the frame.
D. Route the handlebar switch lead (right handlebar switch) over the handlebar switch lead (left handlebar switch).
E. Upward
F. Outward
G. Downward
H. Inward
I. Forward
J. Rearward
K. Insert the projection on the wire harness holder into the hole in the frame from the bottom of the frame.
L. Position the main switch leads, handlebar switch lead (left handlebar switch), and handlebar switch lead (right handlebar switch) as shown in the illustration.
M. Face the buckle of the plastic band downward with the end pointing inward.
N. Position the main switch couplers and handlebar switch couplers under the frame.
O. Route the headlight relay lead and turn signal/hazard relay lead through the rear hole in the electrical component tray 1.
P. Insert the projection on the main switch lead holder into the upper hole in the frame.
Q. Insert the projection on the wire harness holder into the lower hole in the frame.

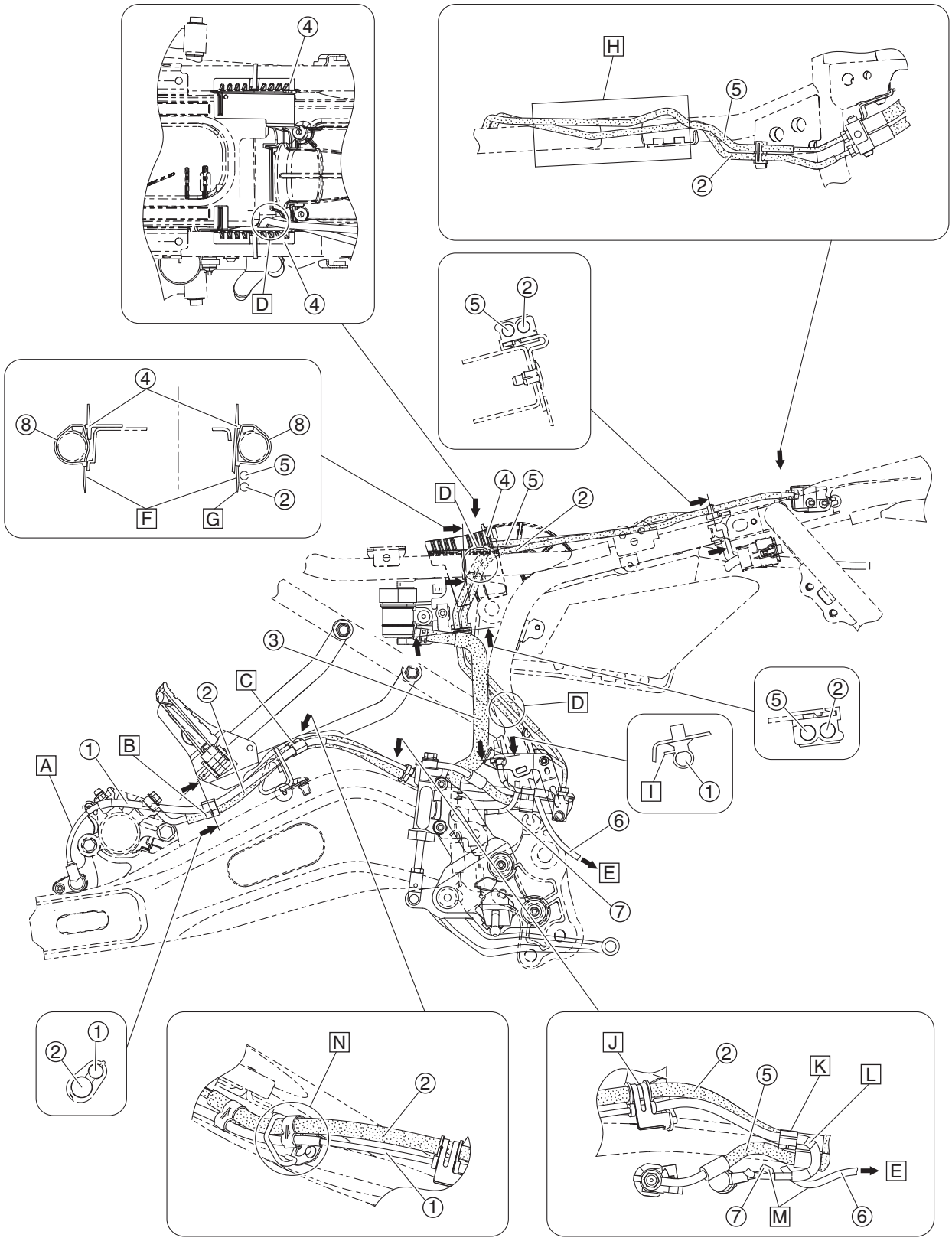
Battery and rear fender (top view)



1. Battery band
2. Positive battery lead (positive battery to starter relay)
3. Negative battery lead
4. Fuse box 1
5. Yamaha diagnostic tool coupler
6. Fuse box 2
7. Lean angle sensor
8. Rear turn signal light lead (left turn signal light)
9. License plate light lead
10. Rear turn signal light lead (right turn signal light)
11. Seat lock cable
12. Starter motor lead
13. Positive battery sub-wire harness coupler
14. Wire harness
15. Tail/brake light lead
16. Rear fender
17. Lower fender cover
18. Frame
19. Rear turn signal light coupler
20. License plate light coupler
21. Battery box
22. Battery
23. Positive battery lead (starter relay to wire harness)

A. Route the positive battery lead through the hole in the battery band.
B. Position the Yamaha diagnostic tool lead and coupler above fuse boxes 1 and 2 as shown in the illustration.
C. Connect all of the couplers near fuse box 2, and then install fuse box 2 to the battery box.
D. Fasten the license plate light lead and rear turn signal light lead (right turn signal light) with a plastic locking tie. Align the plastic locking tie with the boss on the mudguard. Face the buckle of the plastic locking tie upward with the end pointing outward.
E. Less than 5 mm (0.20 in)
F. Pass a plastic locking tie through the hole in the battery box, and then fasten the wire harness with the tie. Face the buckle of the plastic locking tie upward with the end pointing inward.
G. Inward
H. Outward
I. Right
J. Left
K. Route the tail/brake light lead to the inside of the rear turn signal light couplers and license plate light couplers.
L. Route the rear turn signal light leads, license plate light lead, and tail/brake light lead to the outside of the positive battery lead.

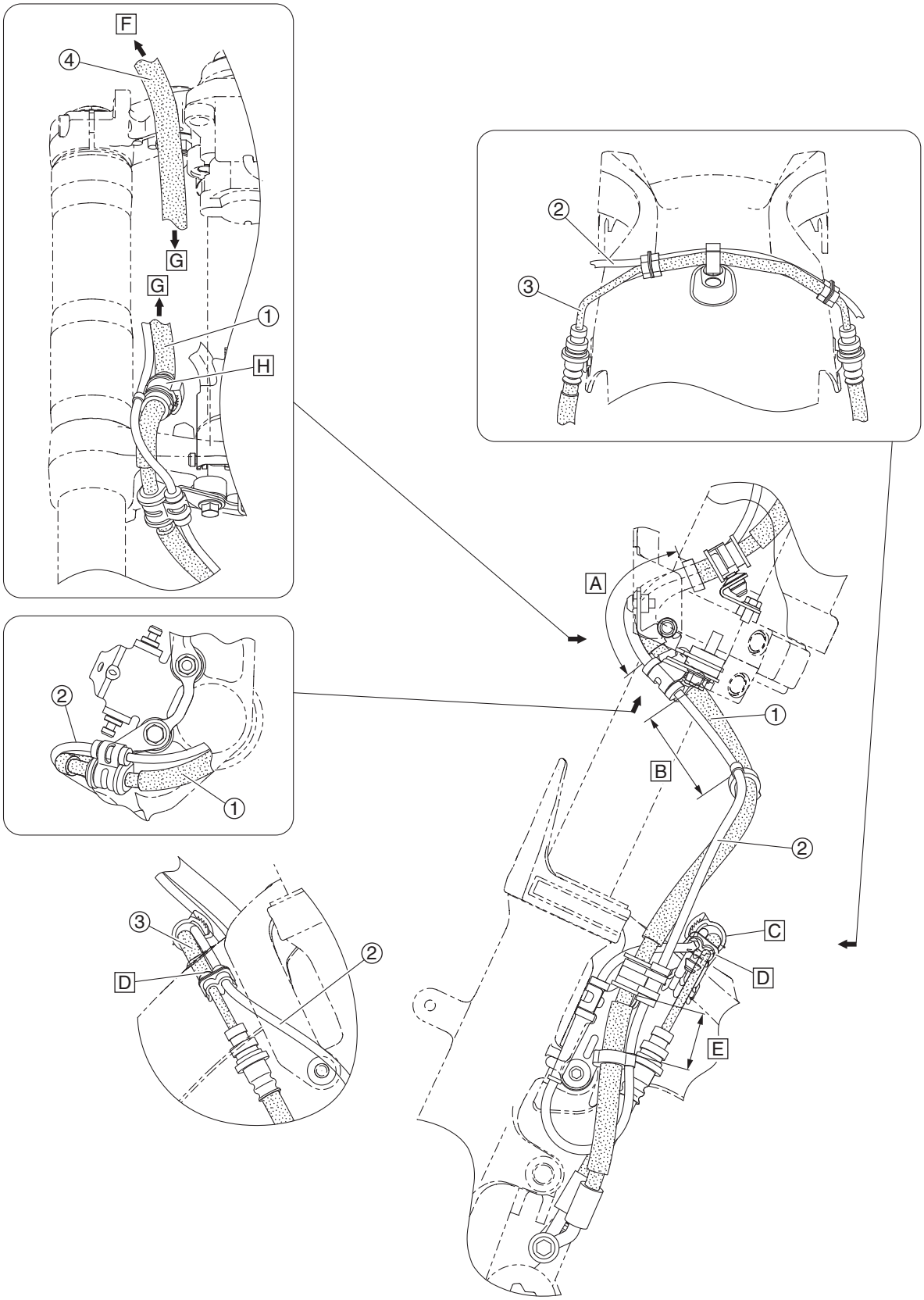
Rear brake hose (right side view)



1. Rear wheel sensor lead
2. Brake hose (hydraulic unit to rear brake caliper)
3. Rear brake fluid reservoir hose
4. Seal
5. Brake hose (rear brake master cylinder to hydraulic unit)
6. O_2 sensor lead
7. Rear brake light switch lead
8. Frame

A. Route the rear wheel sensor lead to the outside of the brake hose (hydraulic unit to rear brake caliper). Make sure that the rear wheel sensor lead is not twisted.
B. Align the holder with the pipe section of the brake hose (hydraulic unit to rear brake caliper).
C. Position the holder halfway between the guide and the end of the protective sleeve on the rear wheel sensor lead as shown in the illustration.
D. Route the brake hoses to the inside of the frame.
E. To O_2 sensor
F. Fasten the seal to the frame with a plastic locking tie. Face the buckle of the plastic locking tie inward with the end pointing downward.
G. Position the end of the plastic locking tie to the inside of the brake hoses.
H. Route the brake hoses on top of the frame.
I. Point the end of the plastic locking tie rearward, and then cut off the excess end of the tie to 5 mm (0.20 in) or less.
J. Fasten the grommets on the rear wheel sensor lead and the brake hose (hydraulic unit to rear brake caliper) with the holder.
K. Fasten the rear wheel sensor lead and brake hose (hydraulic unit to rear brake caliper) with the holder. Route the rear wheel sensor lead over the brake hose (hydraulic unit to rear brake caliper). Align the holder with the pipe section of the brake hose (hydraulic unit to rear brake caliper), making sure that the white tape on the rear wheel sensor lead is positioned to the front of the holder.
L. White tape
M. Route the rear brake light switch lead and O_2 sensor lead to the inside of the rear wheel sensor lead.
N. Route the rear wheel sensor lead and brake hose (hydraulic unit to rear brake caliper) through the guide.

Front brake hose (left and right side view)



1. Brake hose (hydraulic unit to left front brake caliper)
2. Front wheel sensor lead
3. Brake hose (left front brake caliper to right front brake caliper)
4. Brake hose (front brake master cylinder to hydraulic unit)

A. Make sure that there is no slack in the front wheel sensor lead and that the lead is not pinched between the headlight bracket and the brake hose (hydraulic unit to left front brake caliper) in the area shown in the illustration.

B. Fasten the front wheel sensor lead and brake hose (hydraulic unit to left front brake caliper) with the holder as shown in the illustration. Position the holder 80–100 mm (3.15–3.94 in) from the grommet on the hose and route the lead over the hose.

C. Face the catch of the holder forward, and then close the holder until three clicks or more are heard.

D. Make sure that the holder contacts the end of the hose protector on the brake hose.

E. Fasten the front wheel sensor lead and brake hose (hydraulic unit to left front brake caliper) with the holder as shown in the illustration. Position the holder 30–50 mm (1.18–1.97 in) from the grommet on the hose and route the lead to the rear of the hose.

F. To front brake master cylinder

G. To hydraulic unit

H. Fasten the front wheel sensor lead and brake hose (hydraulic unit to left front brake caliper) with the holder as shown in the illustration. Position the holder 15 mm (0.59 in) or less from the grommet on the hose and route the lead to the outside of the hose. Face the catch of the holder inward, and then close the holder until three clicks or more are heard.

EAS20022
PERIODIC MAINTENANCE

EAS30022
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.

EAS30614
PERIODIC MAINTENANCE CHART FOR THE EMISSION CONTROL SYSTEM

TIP

- Items marked with an asterisk should be performed by your Yamaha dealer because these items require special tools, data, and technical skills.
- From 50000 km (30000 mi), repeat the maintenance intervals starting from 10000 km (6000 mi).
- **The annual checks must be performed every year, except if a distance-based maintenance is performed instead.**

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					ANNUAL CHECK
				1000 km (600 mi)	10000 km (6000 mi)	20000 km (12000 mi)	30000 km (18000 mi)	40000 km (24000 mi)	
1	*	**Fuel line**	• Check fuel hoses for cracks or damage. • Replace if necessary.		√	√	√	√	√
2	*	**Spark plugs**	• Check condition. • Adjust gap and clean.		√		√		
			• Replace.			√		√	
3	*	**Valve clearance**	• Check and adjust.	Every 40000 km (24000 mi)					
4	*	**Fuel injection**	• Check engine idle speed.	√	√	√	√	√	√
			• Check and adjust synchronization.		√	√	√	√	√
5	*	**Exhaust system**	• Check for leakage. • Tighten if necessary. • Replace gaskets if necessary.	√	√	√	√	√	
6	*	**Evaporative emission control system**	• Check control system for damage. • Replace if necessary.			√		√	

EAS30615
GENERAL MAINTENANCE AND LUBRICATION CHART

TIP

- Items marked with an asterisk should be performed by your Yamaha dealer because these items require special tools, data, and technical skills.
- From 50000 km (30000 mi), repeat the maintenance intervals starting from 10000 km (6000 mi).
- **The annual checks must be performed every year, except if a distance-based maintenance is performed instead.**

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					ANNUAL CHECK
				1000 km (600 mi)	10000 km (6000 mi)	20000 km (12000 mi)	30000 km (18000 mi)	40000 km (24000 mi)	
1	*	**Diagnostic system check**	• Perform dynamic inspection using Yamaha diagnostic tool. • Check the fault codes.	√	√	√	√	√	√
2	*	**Air filter element**	• Replace.	Every 40000 km (24000 mi)					
3		**Air filter case check hose**	• Clean.	√	√	√	√	√	

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					ANNUAL CHECK
				1000 km (600 mi)	10000 km (6000 mi)	20000 km (12000 mi)	30000 km (18000 mi)	40000 km (24000 mi)	
4		**Clutch**	• Check operation. • Adjust.	√	√	√	√	√	
5	*	**Front brake**	• Check operation, fluid level, and for fluid leakage. • Replace brake pads if necessary.	√	√	√	√	√	√
6	*	**Rear brake**	• Check operation, fluid level, and for fluid leakage. • Replace brake pads if necessary.	√	√	√	√	√	√
7	*	**Brake hoses**	• Check for cracks or damage.		√	√	√	√	√
			• Replace.	Every 4 years					
8	*	**Brake fluid**	• Change.	Every 2 years					
9	*	**Wheels**	• Check runout and for damage. • Replace if necessary.		√	√	√	√	
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 pivot bearings**	• Check operation and for excessive play.		√	√	√	√	
			• Lubricate with lithium-soap-based grease.	Every 50000 km (30000 mi)					
13		**Drive chain**	• Check chain slack, alignment and condition. • Adjust and lubricate chain with a special O-ring chain lubricant thoroughly.	Every 1000 km (600 mi) and after washing the motorcycle, riding in the rain or riding in wet areas					
14	*	**Steering bearings**	• Check bearing assemblies for looseness.	√	√		√		
			• Moderately repack with lithium-soap-based grease.			√		√	
15	*	**Chassis fasteners**	• Make sure that all nuts, bolts and screws are properly tightened.		√	√	√	√	√
16		**Brake lever pivot shaft**	• Lubricate with silicone grease.		√	√	√	√	√
17		**Brake pedal pivot shaft**	• Lubricate with lithium-soap-based grease.		√	√	√	√	√
18		**Clutch lever pivot shaft**	• Lubricate with lithium-soap-based grease.		√	√	√	√	√
19		**Shift pedal pivot shaft**	• Lubricate with lithium-soap-based grease.		√	√	√	√	√
20		**Sidestand**	• Check operation. • Lubricate with lithium-soap-based grease.		√	√	√	√	√
21	*	**Sidestand switch**	• Check operation and replace if necessary.	√	√	√	√	√	√
22	*	**Front fork**	• Check operation and for oil leakage. • Replace if necessary.		√	√	√	√	
23	*	**Shock absorber assembly**	• Check operation and for oil leakage. • Replace if necessary.		√	√	√	√	
24	*	**Rear suspension relay arm and connecting arm pivoting points**	• Check operation.		√	√	√	√	

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					ANNUAL CHECK
				1000 km (600 mi)	10000 km (6000 mi)	20000 km (12000 mi)	30000 km (18000 mi)	40000 km (24000 mi)	
25		**Engine oil**	• Change (warm engine before draining). • Check oil level and vehicle for oil leakage.	√	√	√	√	√	√
26		**Engine oil filter cartridge**	• Replace.	√		√		√	
27	*	**Cooling system**	• Check coolant level and vehicle for coolant leakage.		√	√	√	√	√
			• Change.	Every 3 years					
28	*	**Front and rear brake switches**	• Check operation.	√	√	√	√	√	√
29	*	**Moving parts and cables**	• Lubricate.		√	√	√	√	√
30	*	**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.		√	√	√	√	√
31	*	**Lights, signals and switches**	• Check operation. • Adjust headlight beam.	√	√	√	√	√	√

TIP

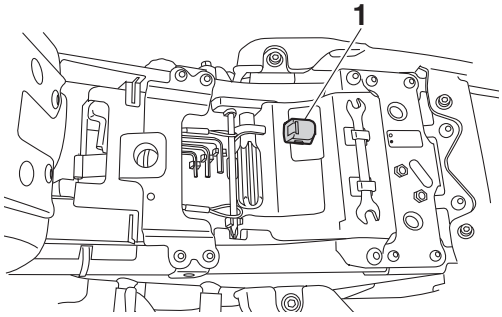
- Air filter
  - This model's air filter is equipped with a disposable oil-coated paper element, which must not be cleaned with compressed air to avoid damaging it.
  - The air filter element needs to be replaced more frequently when riding in unusually wet or dusty areas.
- Hydraulic brake service
  - 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.

EAS32024
CHECKING THE VEHICLE USING THE YAMAHA DIAGNOSTIC TOOL

Use the Yamaha diagnostic tool and check the vehicle according to the following procedure.

1. Remove:
   - Seat
     Refer to "GENERAL CHASSIS (1)" in chapter 4. (Manual No.: B34-F8197-E2)
2. Remove the protective cap "1", and then connect the Yamaha diagnostic tool to the coupler.

Yamaha diagnostic tool USB
90890-03256
Yamaha diagnostic tool (A/I)
90890-03262



3. Check:
   - Fault codes (fuel injection system and ABS)

TIP

Use the "Diagnosis of malfunction" function of the Yamaha diagnostic tool to check the fault codes. For information about using the Yamaha diagnostic tool, refer to the operation manual that is included with the tool.

Fault code number is displayed → Check and repair the probable cause of the malfunction. Refer to "TROUBLESHOOTING DETAILS (FAULT CODE)" on page 63 and "[B-2] DIAGNOSIS USING THE FAULT CODES" on page 75.

4. Perform:
   - Dynamic inspection

TIP

Use the "Dynamic inspection" function of the Yamaha diagnostic tool version 3.0 and after to perform the dynamic inspection. For information about using the Yamaha diagnostic tool, refer to the operation manual that is included with the tool.

5. Install:
   - Seat
     Refer to "GENERAL CHASSIS (1)" in chapter 4. (Manual No.: B34-F8197-E2)

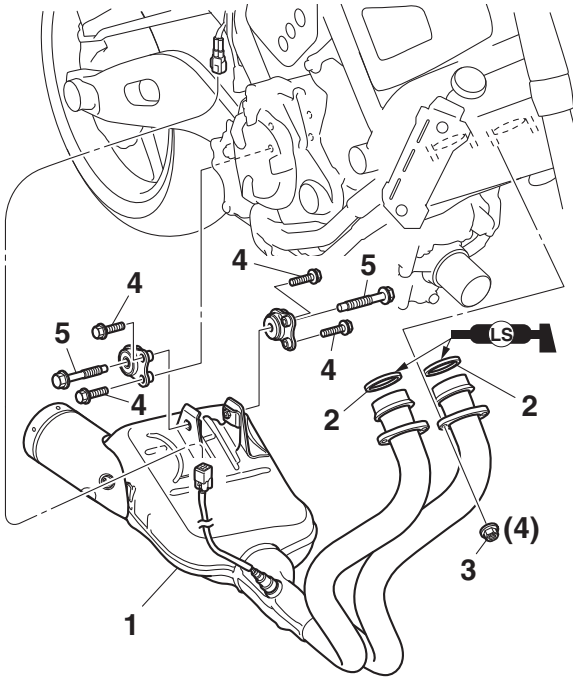
EAS30625
CHECKING THE EXHAUST SYSTEM

1. Check:
   - Muffler assembly "1"
     Cracks/damage → Replace.
   - Gaskets "2"
     Exhaust gas leaks → Replace and lubricate.

Recommended lubricant
Lithium-soap-based grease

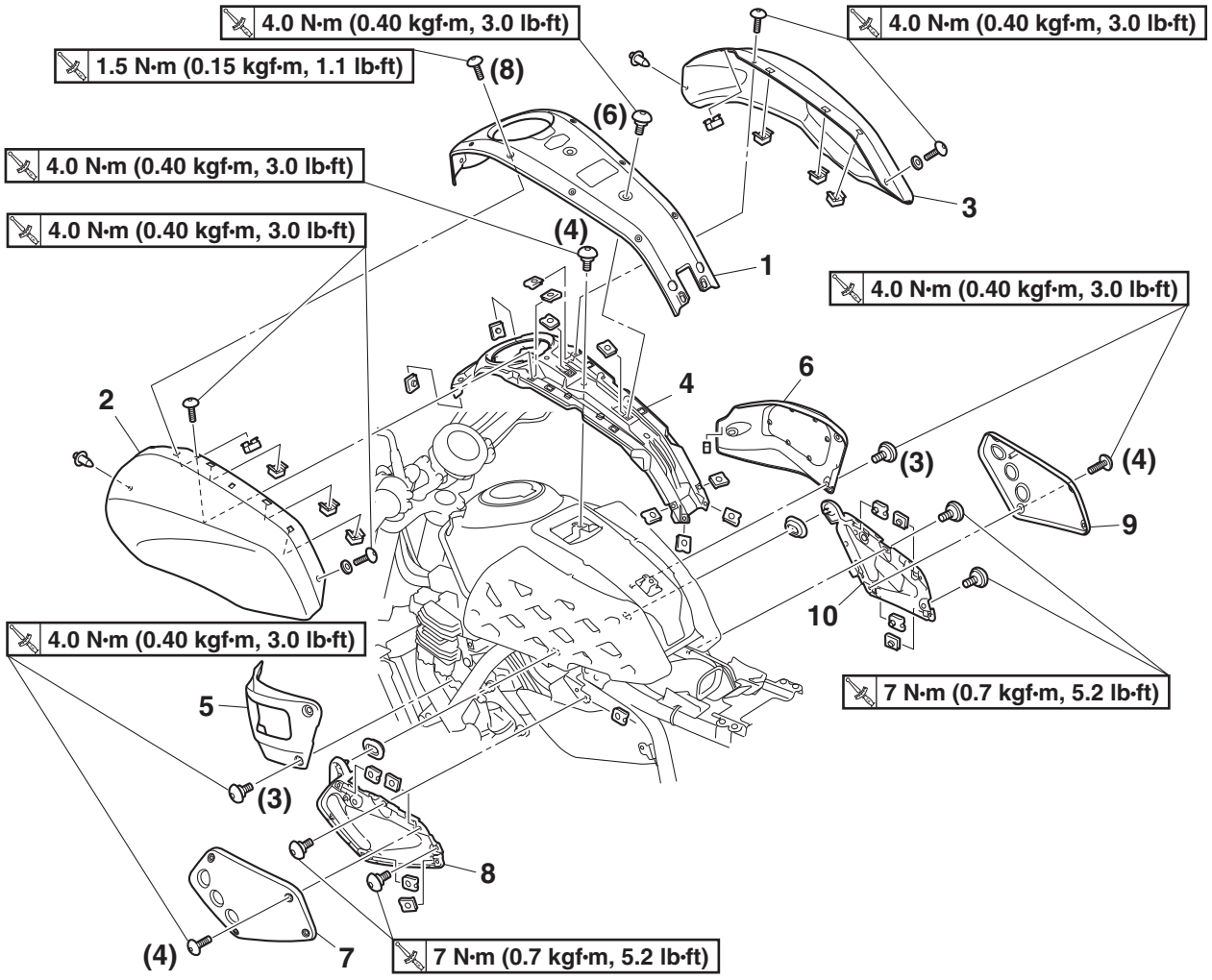
2. Check:
   Tightening torque
   - Exhaust pipe nuts "3"
   - Muffler bracket bolt "4", "5"

Exhaust pipe nut
20 N·m (2.0 kgf·m, 15 lb·ft)
Muffler bracket bolt "4"
10 N·m (1.0 kgf·m, 7.4 lb·ft)
Muffler bracket bolt "5"
20 N·m (2.0 kgf·m, 15 lb·ft)



EAS20156
GENERAL CHASSIS (3)

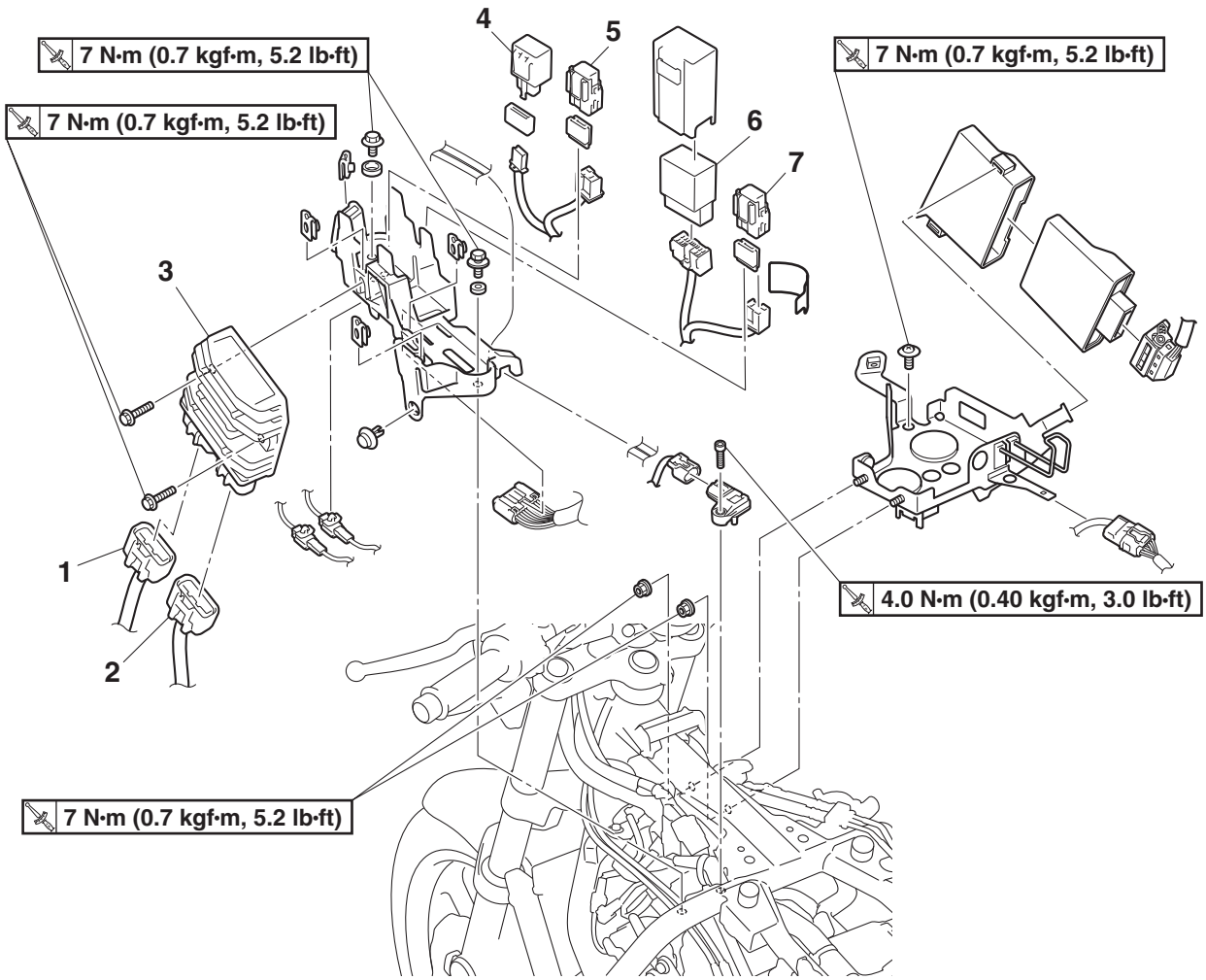
Removing the fuel tank covers and air scoops



Order	Job/Parts to remove	Q'ty	Remarks
	Seat		Refer to "GENERAL CHASSIS (1)" in chapter 4. (Manual No.: B34-F8197-E2)
1	Fuel tank top cover	1	
2	Fuel tank cover (left)	1	
3	Fuel tank cover (right)	1	
4	Fuel tank center cover	1	
5	Air scoop (left)	1	
6	Air scoop (right)	1	
7	Outer side cover (left)	1	
8	Inner side cover (left)	1	
9	Outer side cover (right)	1	
10	Inner side cover (right)	1	

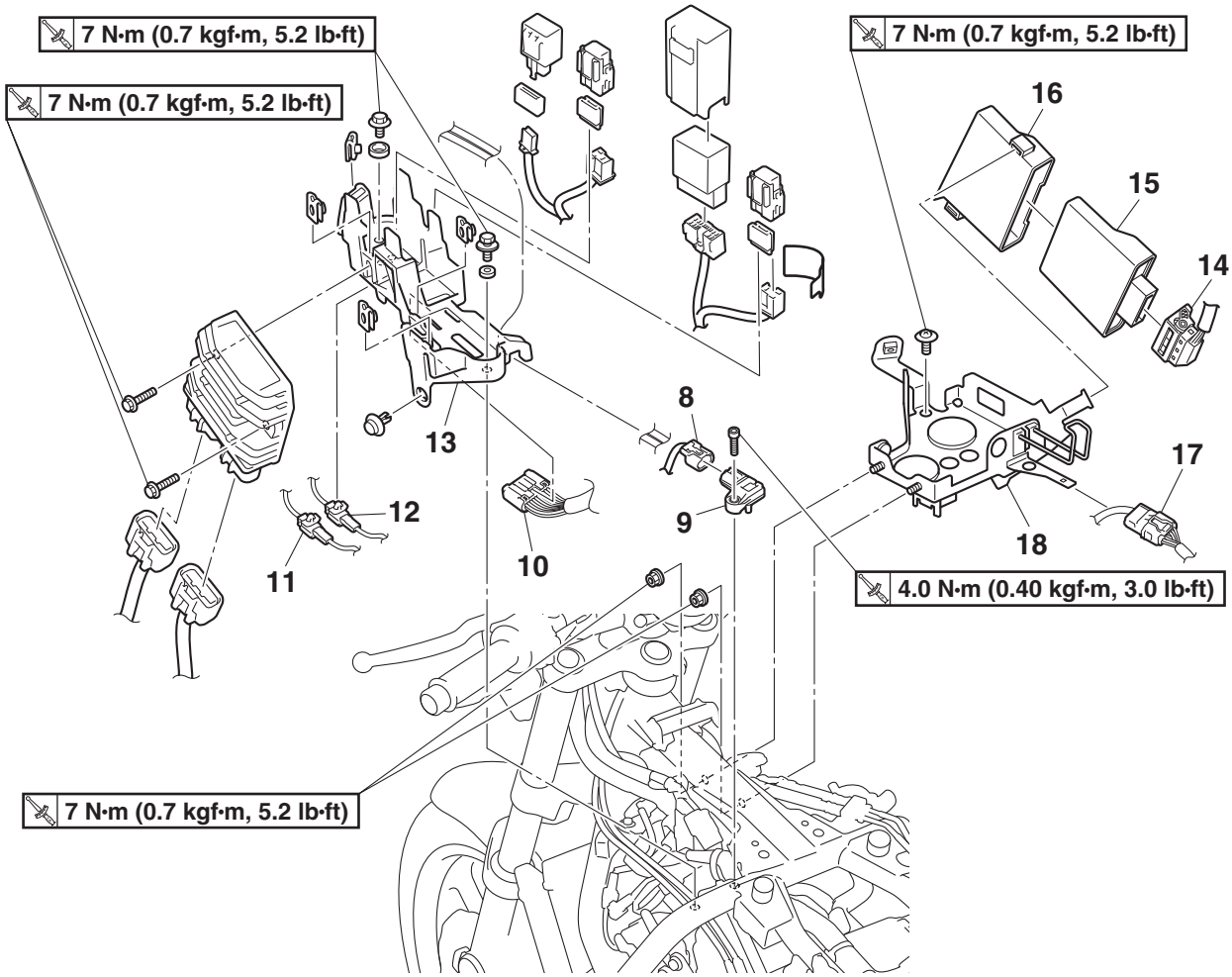
EAS20158
GENERAL CHASSIS (5)

Removing the electrical components tray



Order	Job/Parts to remove	Q'ty	Remarks
	Seat		Refer to "GENERAL CHASSIS (1)" in chapter 4. (Manual No.: B34-F8197-E2)
	Fuel tank center cover/Air scoops/Outer side covers/Inner side covers		Refer to "GENERAL CHASSIS (3)" on page 25.
	Fuel tank		Refer to "FUEL TANK" on page 38.
	Hydraulic unit assembly		Refer to "ABS (ANTI-LOCK BRAKE SYSTEM)" in chapter 4. (Manual No.: B34-F8197-E2)
1	Stator coil coupler	1	Disconnect.
2	Rectifier/regulator coupler	1	Disconnect.
3	Rectifier/regulator	1	
4	Turn signal/hazard relay	1	
5	Headlight relay	1	
6	Relay unit	1	
7	Fan motor relay	1	

Removing the electrical components tray



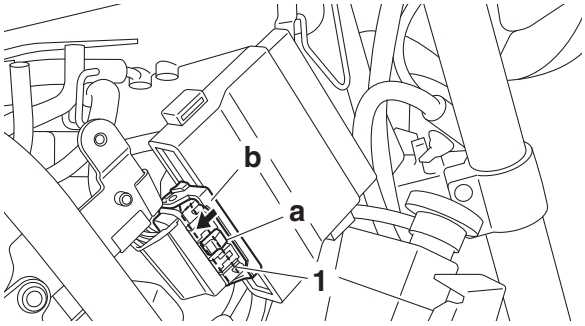
Order	Job/Parts to remove	Q'ty	Remarks
8	Intake air pressure sensor coupler	1	Disconnect.
9	Intake air pressure sensor	1	
10	Joint coupler	1	
11	Fan motor coupler	1	
12	Crankshaft position sensor coupler	1	
13	Electrical components tray 1	1	
14	ECU coupler	1	Disconnect.
15	ECU (Engine Control Unit)	1	
16	Band	1	
17	Sub-wire harness coupler	1	
18	Electrical components tray 2	1	

EAS31108
REMOVING THE ECU (engine control unit)

1. Disconnect:
   • ECU coupler “1”

TIP

While pushing the portion “a” of the ECU coupler, move the lock lever “b” in the direction of the arrow shown to disconnect the coupler.

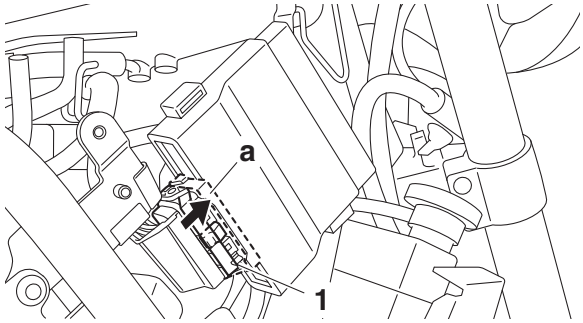


EAS31109
INSTALLING THE ECU (engine control unit)

1. Connect:
   • ECU coupler “1”

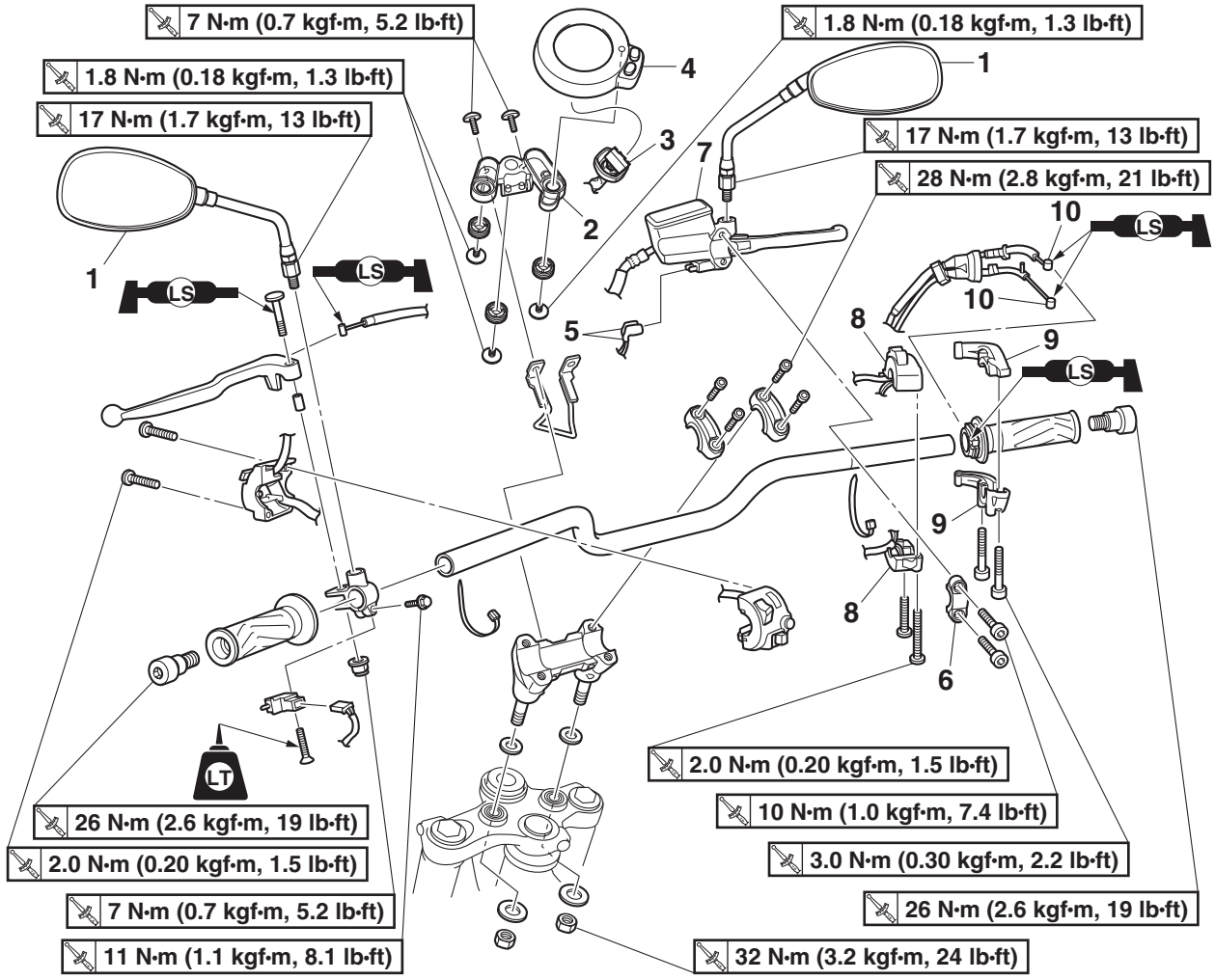
TIP

Connect the ECU coupler, and then push the lock lever “a” of the coupler in the direction of the arrow shown.



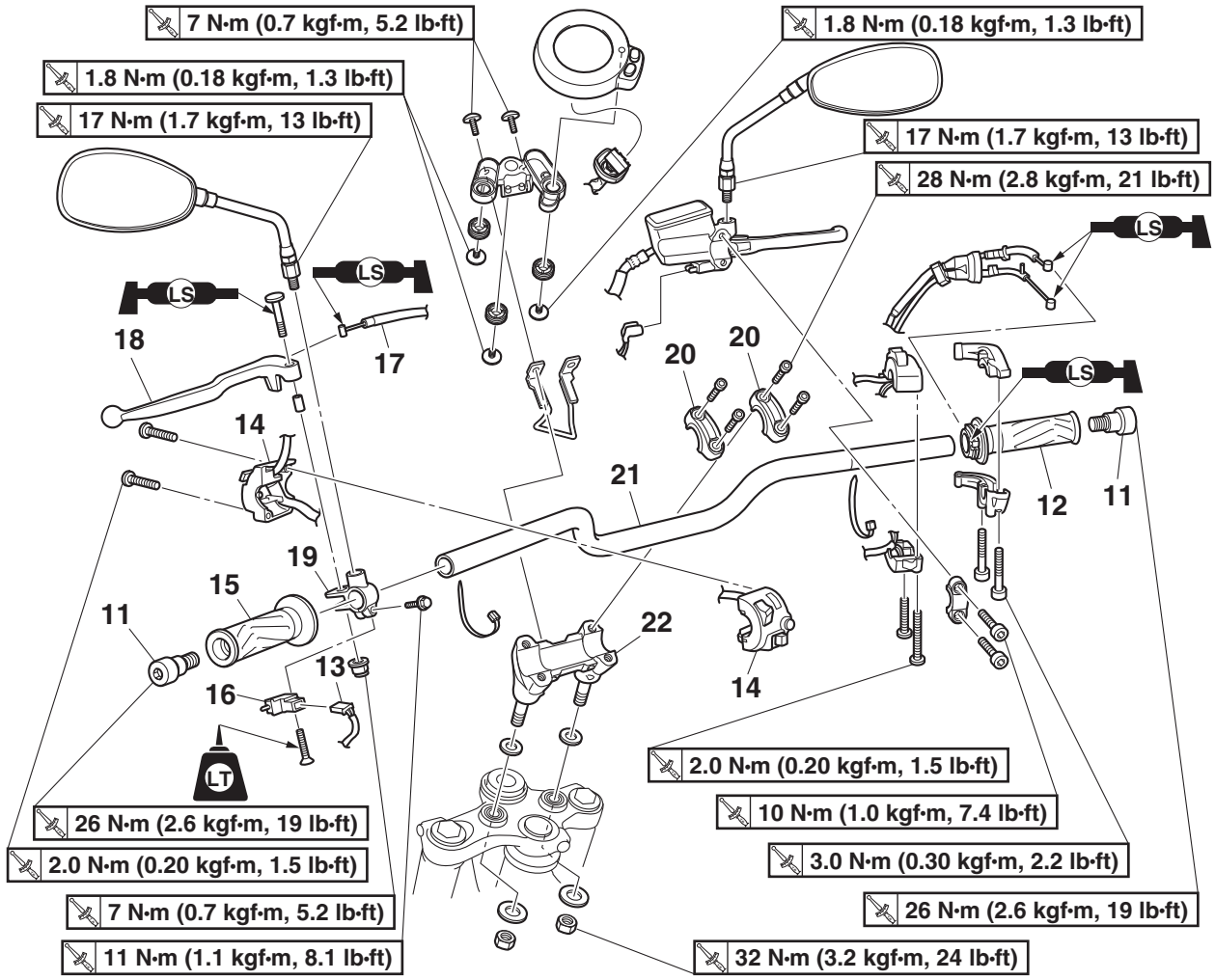
EAS20033
HANDLEBAR

Removing the handlebar and meter assembly



Order	Job/Parts to remove	Q'ty	Remarks
1	Rearview mirror	2	
2	Meter assembly bracket	1	
3	Meter assembly coupler	1	Disconnect.
4	Meter assembly	1	
5	Front brake light switch connector	2	Disconnect.
6	Front brake master cylinder holder	1	
7	Front brake master cylinder assembly	1	
8	Handlebar switch (right)	1	
9	Throttle cable housing	1	
10	Throttle cable	2	Disconnect.

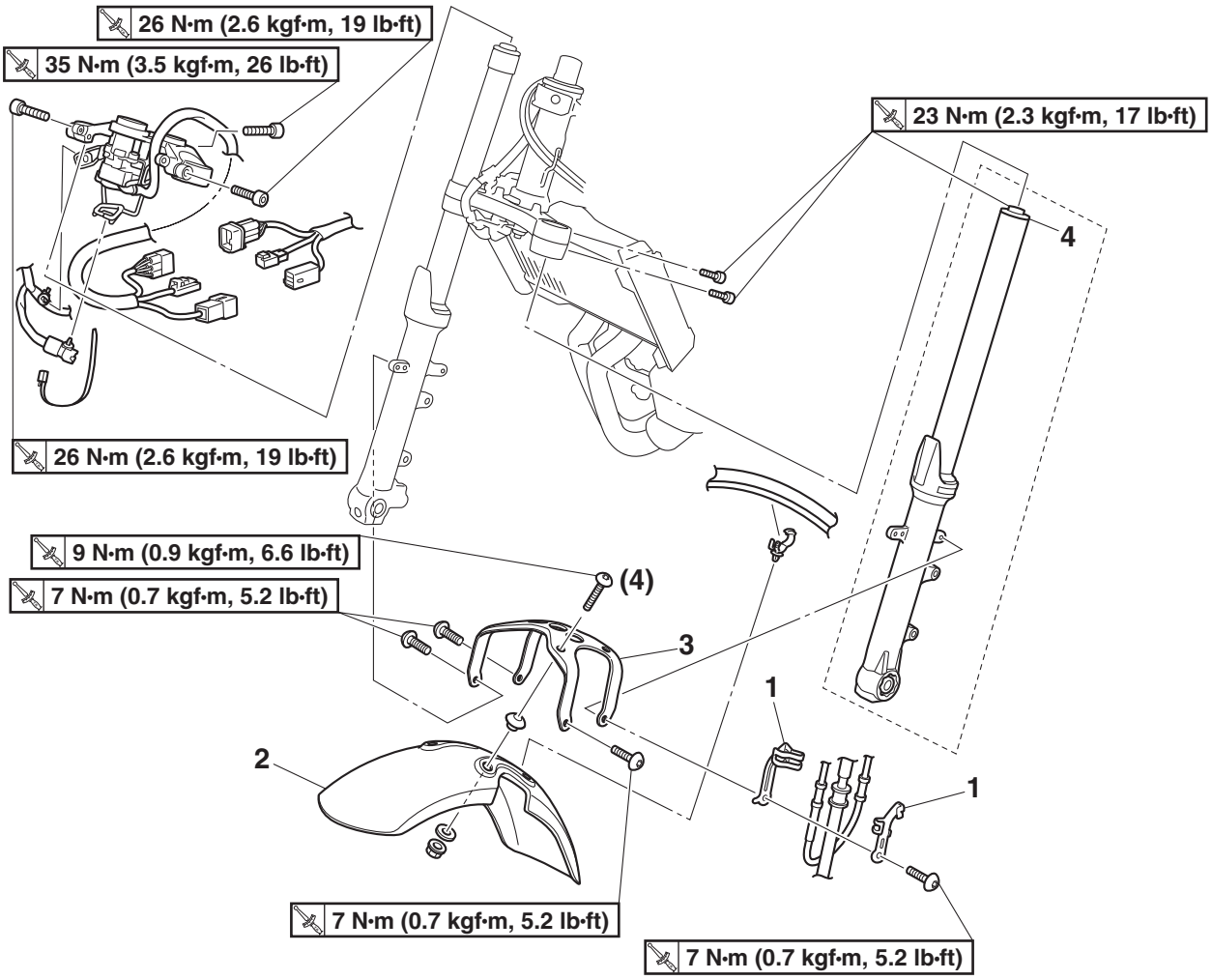
Removing the handlebar and meter assembly



Order	Job/Parts to remove	Q'ty	Remarks
11	Grip end	2	
12	Throttle grip	1	
13	Clutch switch coupler	1	Disconnect.
14	Handlebar switch (left)	1	
15	Handlebar grip	1	
16	Clutch switch	1	
17	Clutch cable	1	Disconnect.
18	Clutch lever	1	
19	Clutch lever holder	1	
20	Upper handlebar holder	2	
21	Handlebar	1	
22	Lower handlebar holder	1	

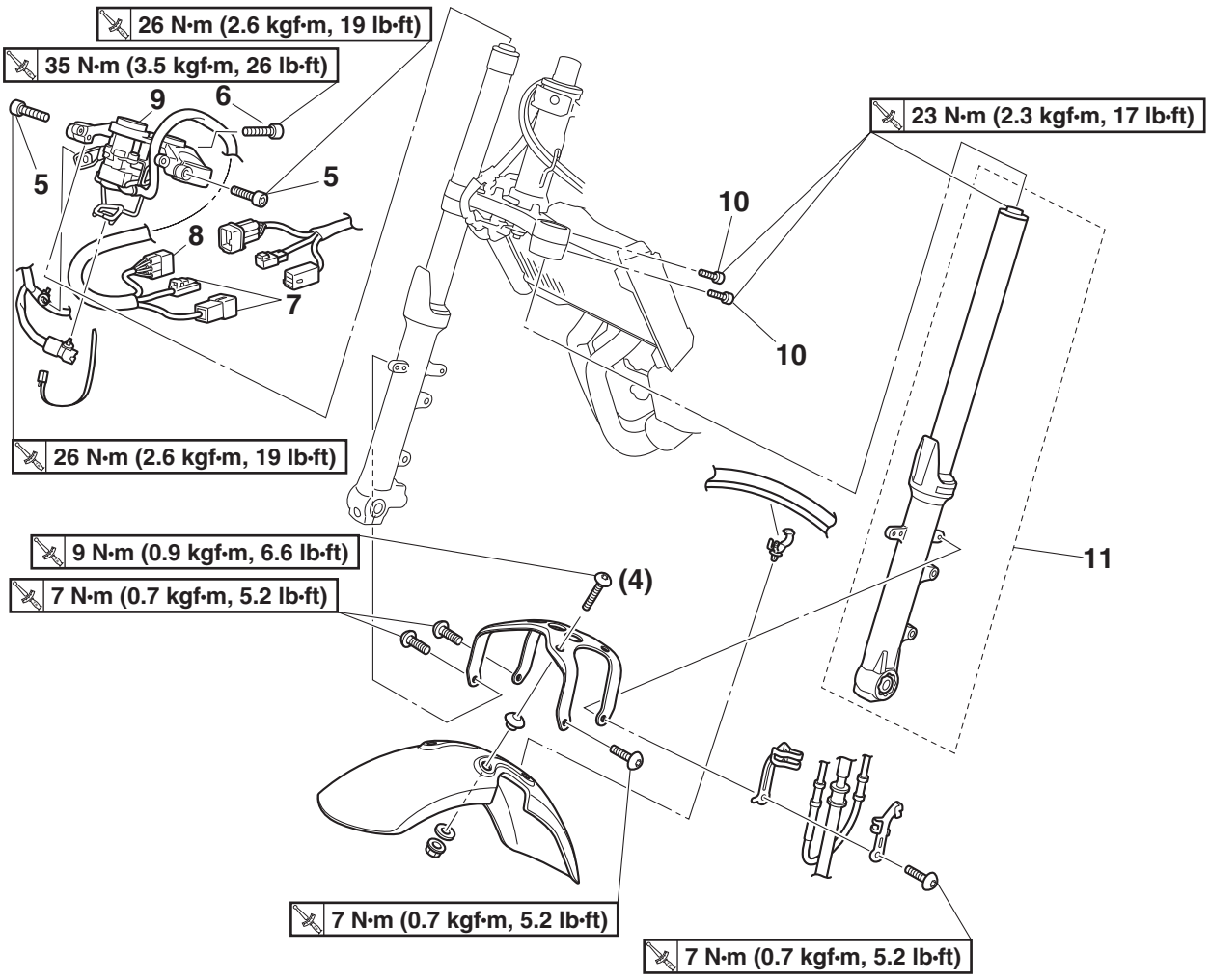
EAS20034
FRONT FORK

Removing the front fork legs



Order	Job/Parts to remove	Q'ty	Remarks
			The following procedure applies to both of the front fork legs.
	Handlebar		Refer to "HANDLEBAR" on page 29.
	Fuel tank center cover		Refer to "GENERAL CHASSIS (3)" on page 25.
	Fuel tank		Refer to "FUEL TANK" on page 38.
	Front wheel		Refer to "FRONT WHEEL" in chapter 4. (Manual No.: B34-F8197-E2)
1	Front brake hose/lead holder	2	
2	Front fender	1	
3	Front fender bracket	1	
4	Front fork cap bolt	1	Loosen.

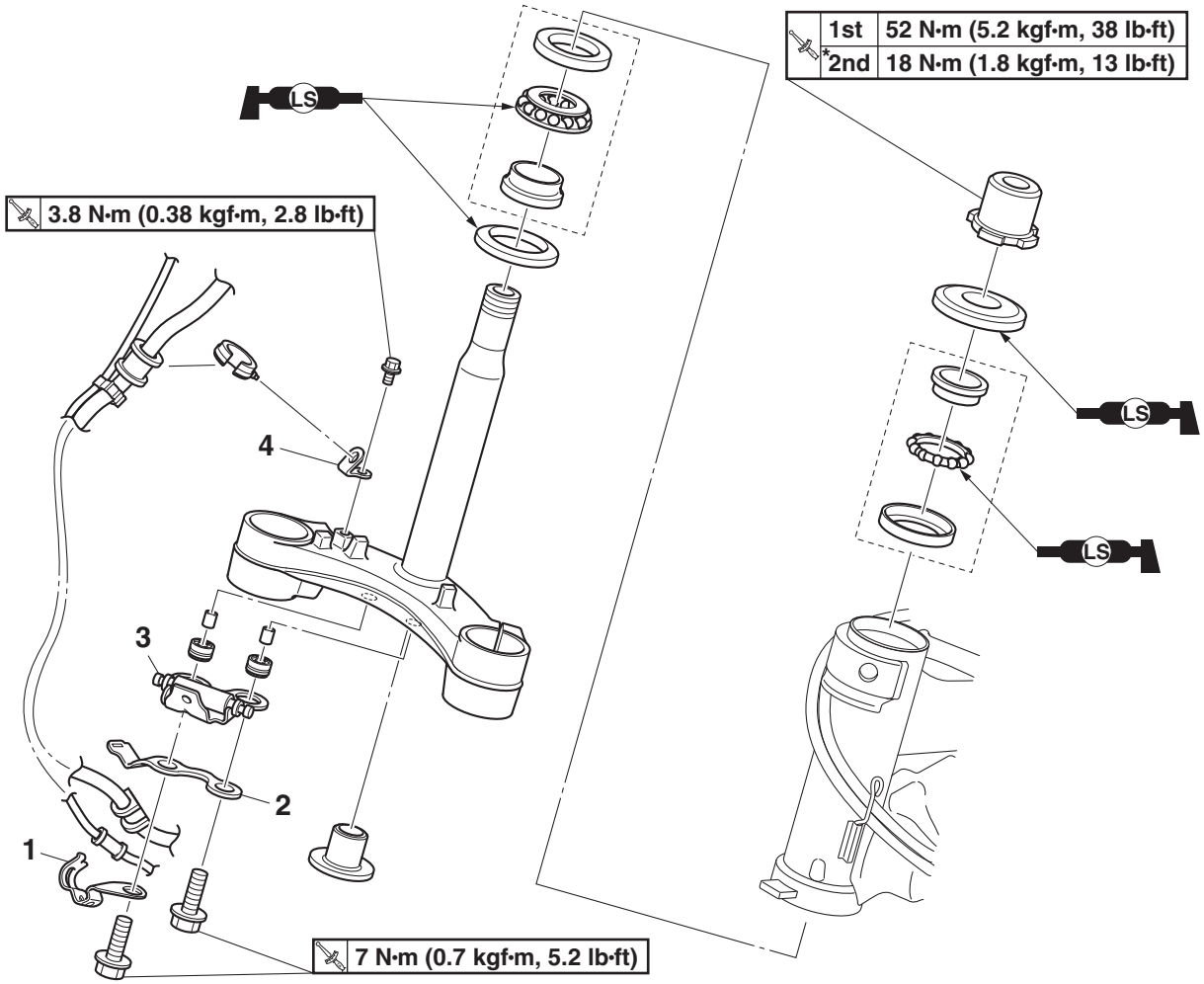
Removing the front fork legs



Order	Job/Parts to remove	Q'ty	Remarks
5	Upper bracket pinch bolt (left and right)	2	Loosen.
6	Upper bracket pinch bolt (center)	1	Loosen.
7	Main switch coupler	2	Disconnect.
8	Immobilizer unit coupler	1	Disconnect.
9	Upper bracket	1	
10	Lower bracket pinch bolt	2	Loosen.
11	Front fork leg	1	

EAS20035
STEERING HEAD

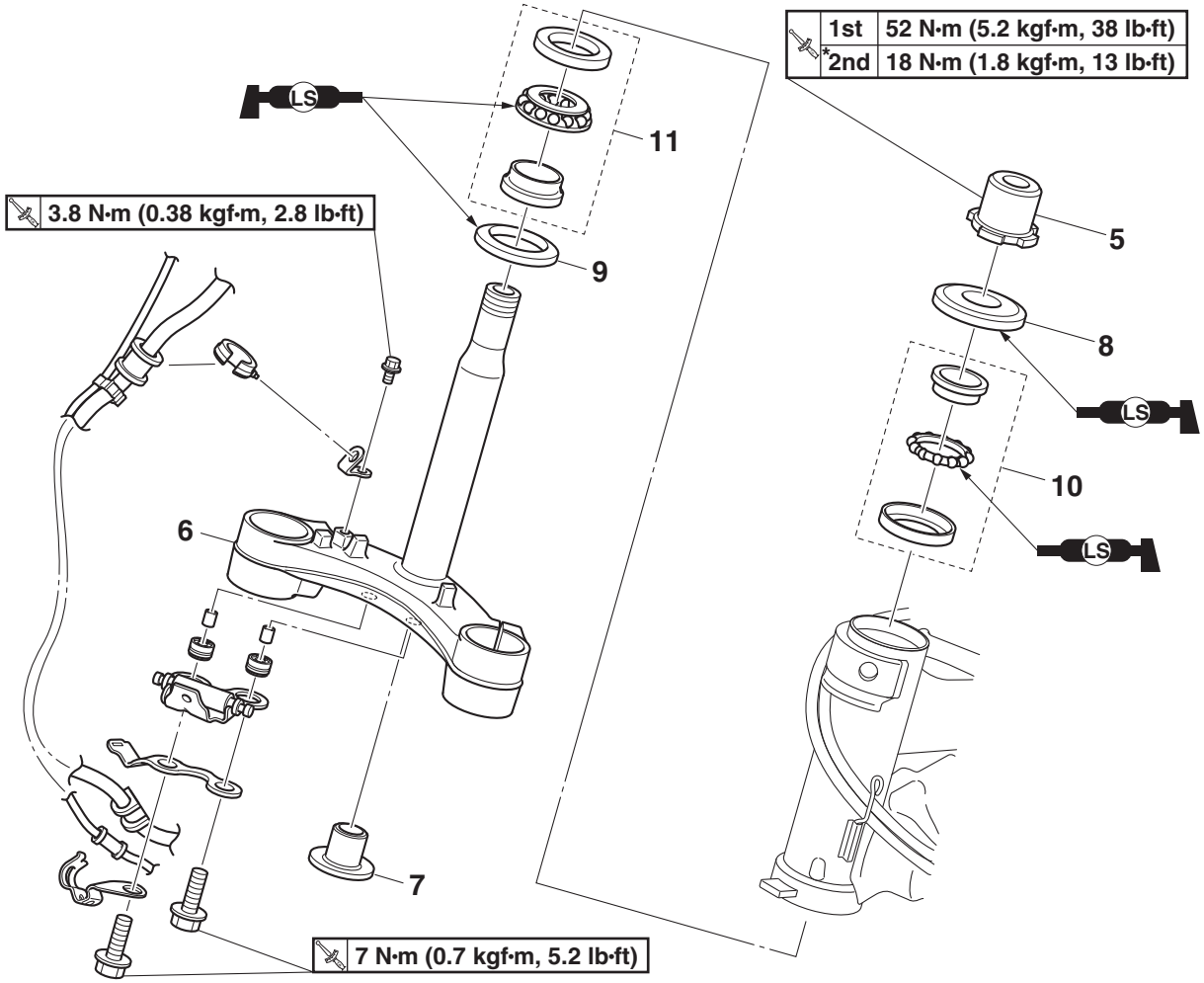
Removing the lower bracket



*** Loosen the cap nut completely, and then tighten it to specification.**

Order	Job/Parts to remove	Q'ty	Remarks
	Headlight assembly		Refer to "GENERAL CHASSIS (2)" in chapter 4. (Manual No.: B34-F8197-E2)
	Handlebar		Refer to "HANDLEBAR" on page 29.
	Front fork legs		Refer to "FRONT FORK" on page 31.
1	Front brake hose lower holder	1	
2	Front brake hose upper holder	1	
3	Headlight bracket	1	
4	Front brake hose holder bracket	1	

Removing the lower bracket

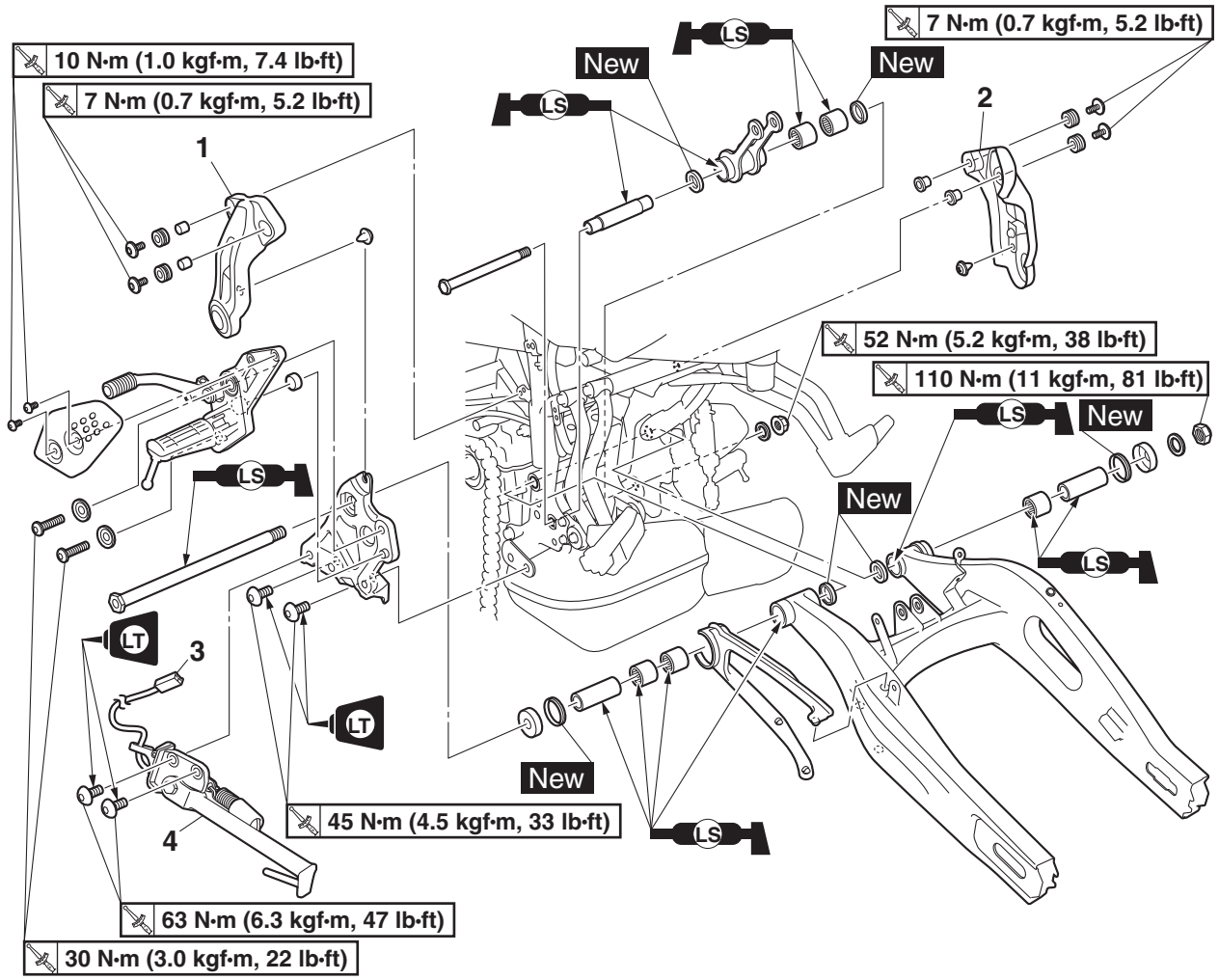


*** Loosen the cap nut completely, and then tighten it to specification.**

Order	Job/Parts to remove	Q'ty	Remarks
5	Cap nut	1	
6	Lower bracket	1	
7	Lower bracket cap	1	
8	Bearing cover	1	
9	Lower bearing dust seal	1	
10	Upper bearing	1	
11	Lower bearing	1	

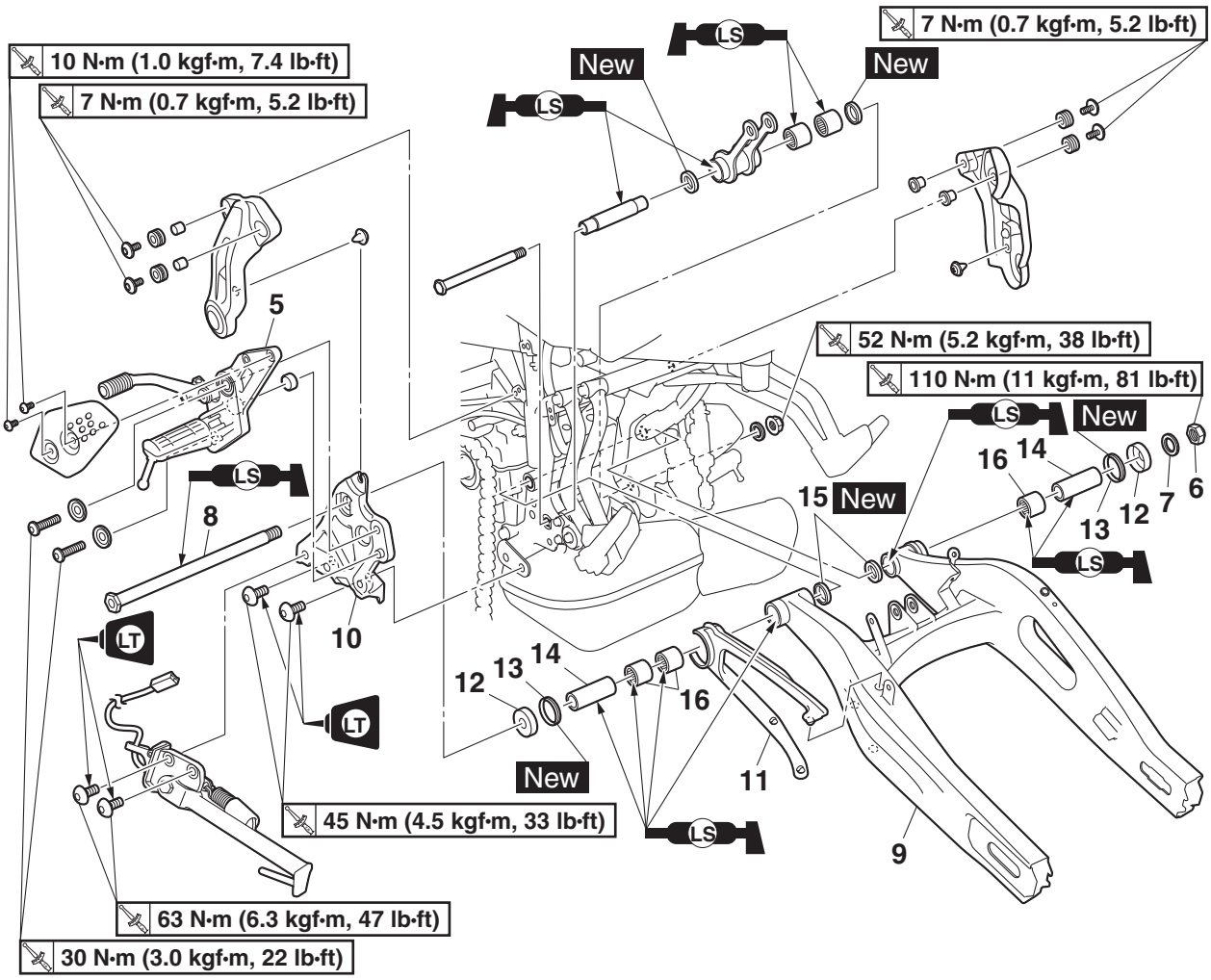
EAS20037
SWINGARM

Removing the swingarm



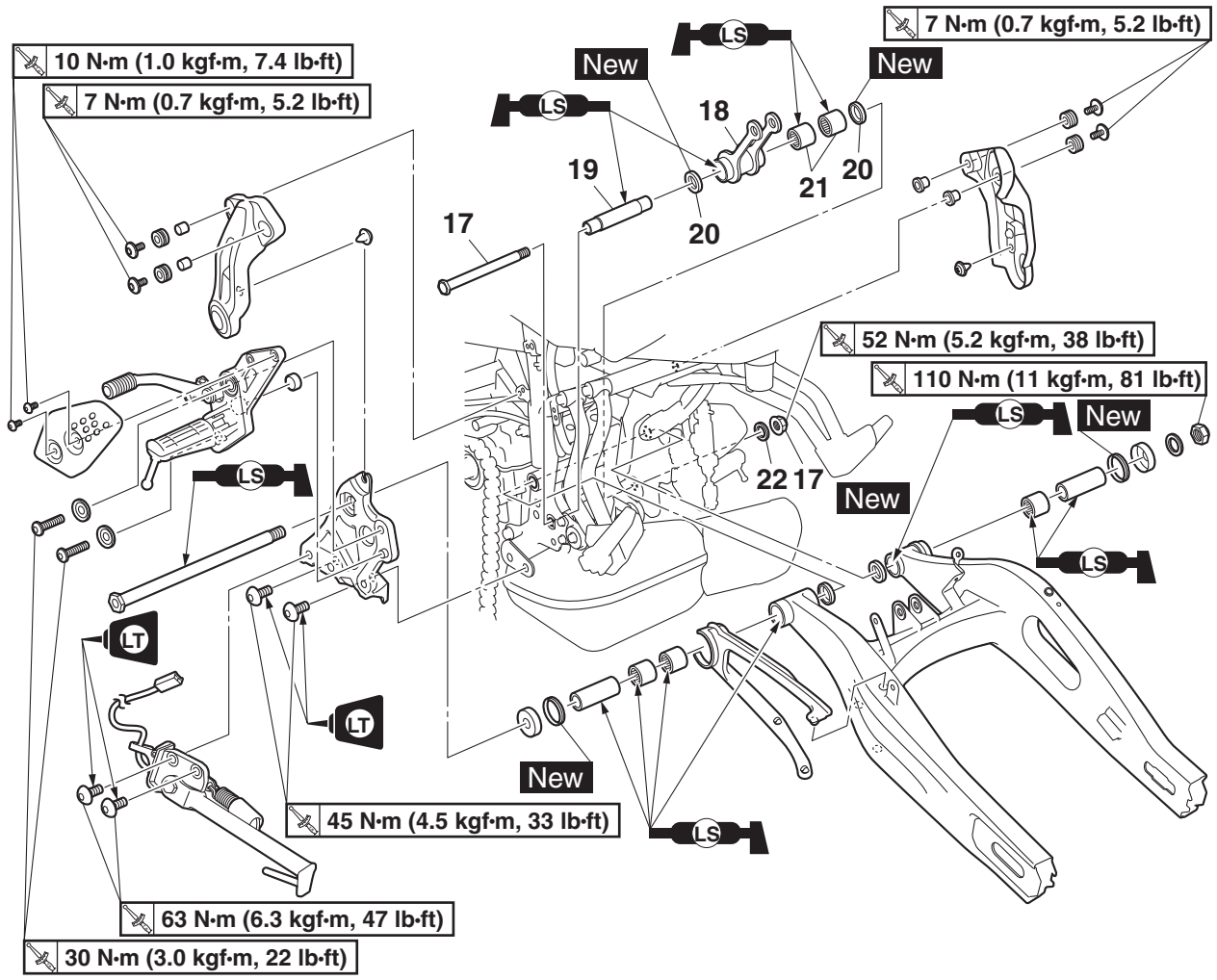
Order	Job/Parts to remove	Q'ty	Remarks
	Rear brake caliper/Rear brake hose guide/Rear brake hose holder		Refer to "REAR BRAKE" in chapter 4. (Manual No.: B34-F8197-E2)
	Rear wheel		Refer to "REAR WHEEL" in chapter 4. (Manual No.: B34-F8197-E2)
	Relay arm		Refer to "REAR SHOCK ABSORBER ASSEMBLY" in chapter 4. (Manual No.: B34-F8197-E2)
	Drive sprocket cover		Refer to "CHAIN DRIVE" in chapter 4. (Manual No.: B34-F8197-E2)
1	Pivot shaft protector (left)	1	
2	Pivot shaft protector (right)	1	
3	Sidestand switch coupler	1	Disconnect.
4	Sidestand	1	

Removing the swingarm



Order	Job/Parts to remove	Q'ty	Remarks
5	Footrest assembly (left)	1	
6	Pivot shaft nut	1	
7	Washer	1	
8	Pivot shaft	1	
9	Swingarm	1	
10	Footrest bracket (left)	1	
11	Drive chain guide	1	
12	Dust cover	2	
13	Oil seal	2	
14	Collar	2	
15	Oil seal	2	
16	Bearing	3	

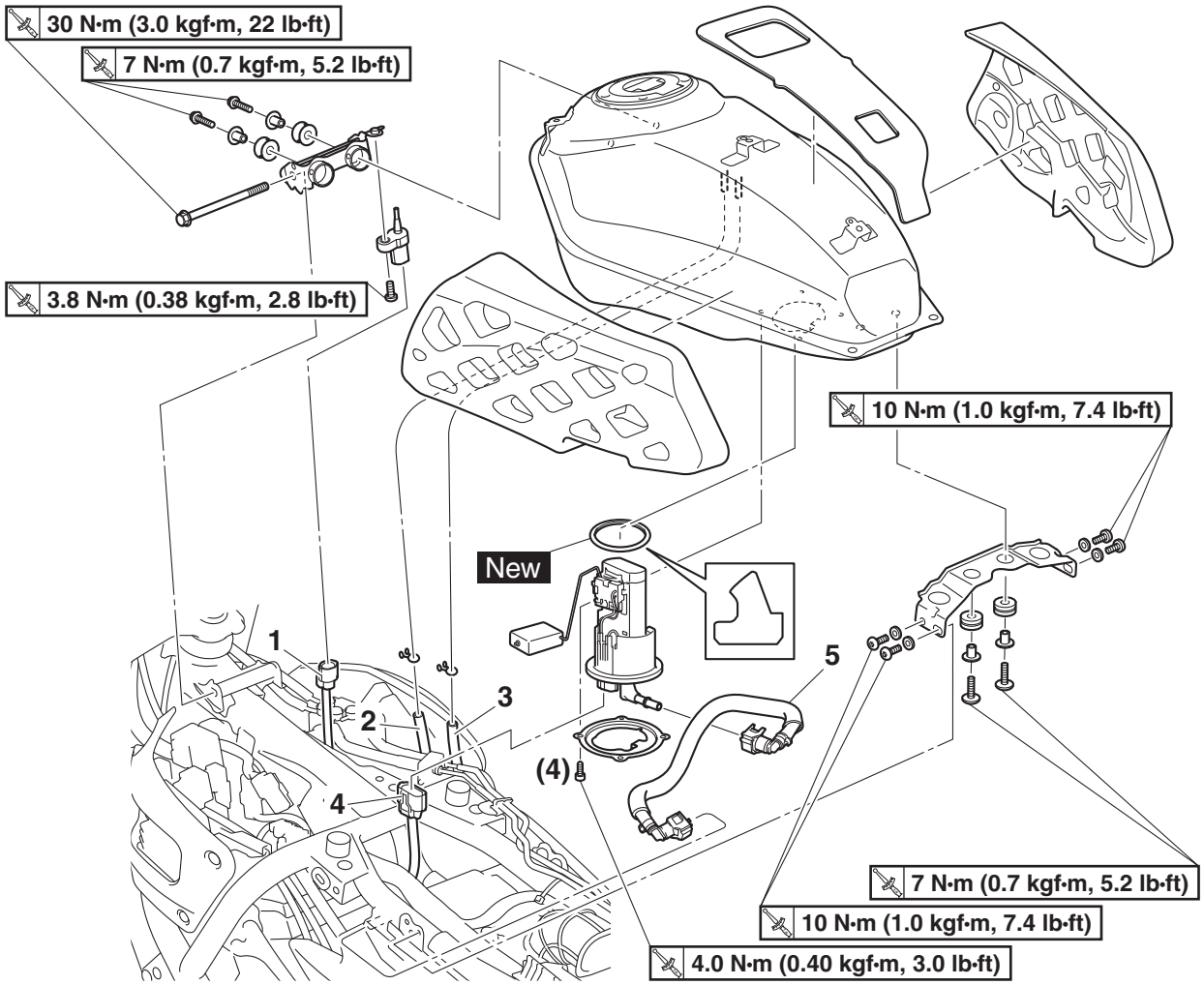
Removing the swingarm



Order	Job/Parts to remove	Q'ty	Remarks
17	Connecting arm nut/bolt (frame side)	1/1	
18	Connecting arm	1	
19	Spacer	1	
20	Oil seal	2	
21	Bearing	2	
22	Washer	1	

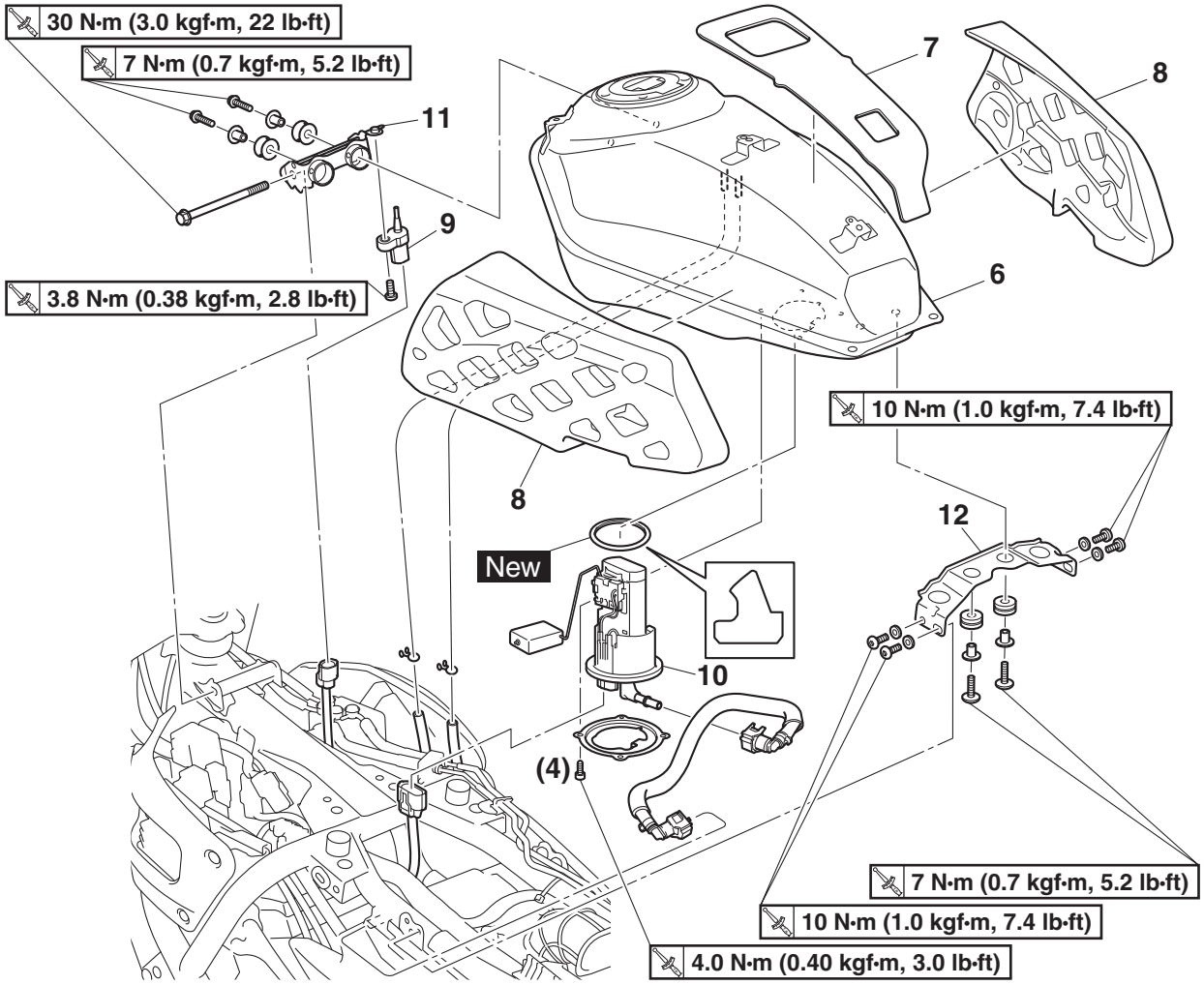
EAS20067
FUEL TANK

Removing the fuel tank and fuel pump



Order	Job/Parts to remove	Q'ty	Remarks
	Seat		Refer to "GENERAL CHASSIS (1)" in chapter 4. (Manual No.: B34-F8197-E2)
	Fuel tank center cover/Inner side cover (left)		Refer to "GENERAL CHASSIS (3)" on page 25.
1	Intake air temperature sensor coupler	1	Disconnect.
2	Fuel tank overflow hose	1	Disconnect.
3	Fuel tank breather hose	1	Disconnect.
4	Fuel pump coupler	1	Disconnect.
5	Fuel hose	1	

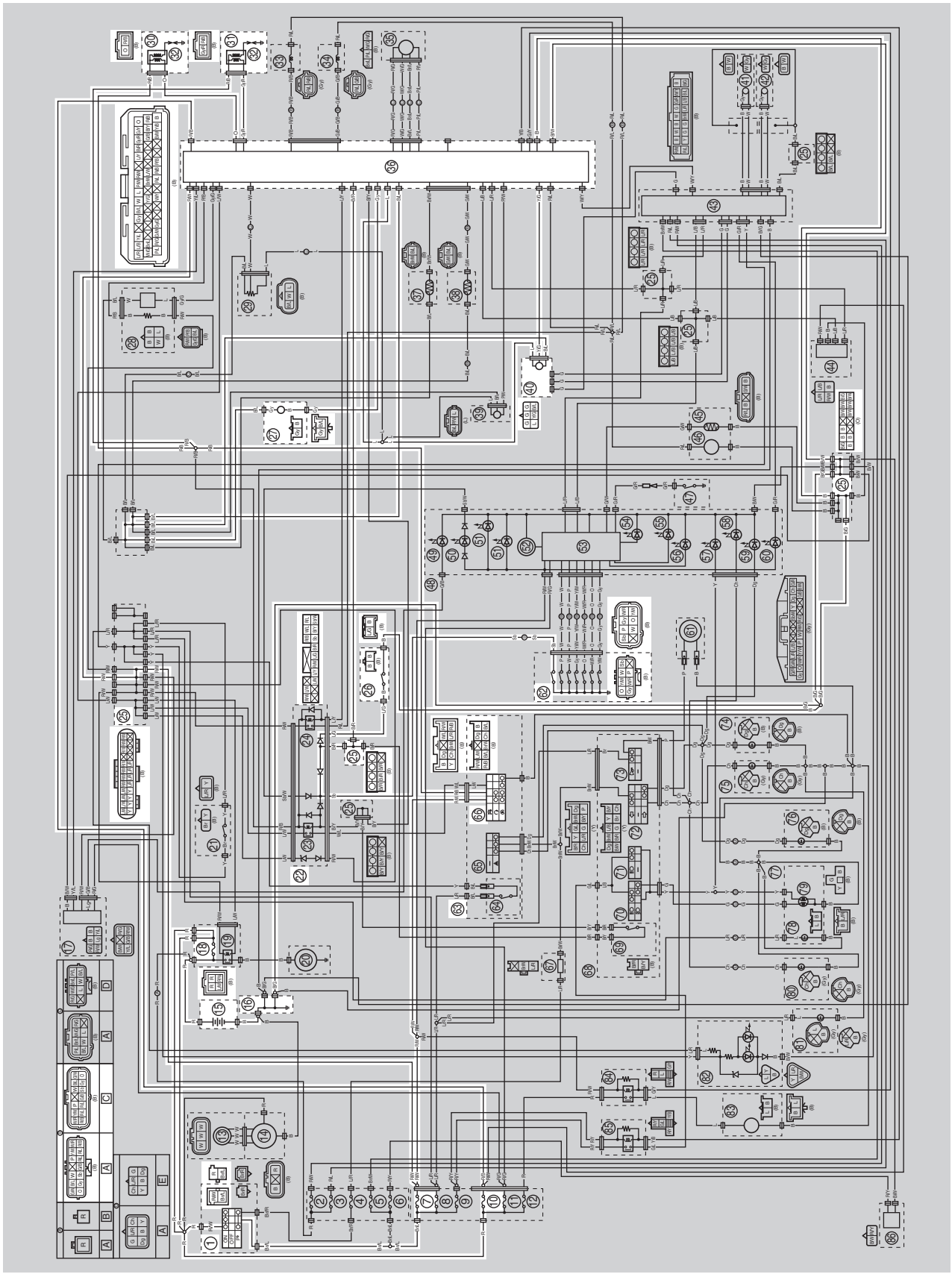
Removing the fuel tank and fuel pump



Order	Job/Parts to remove	Q'ty	Remarks
6	Fuel tank	1	
7	Damper 1	1	
8	Damper 2	2	
9	Intake air temperature sensor	1	
10	Fuel pump	1	
11	Front fuel tank bracket	1	
12	Rear fuel tank bracket	1	

EAS20072
IGNITION SYSTEM

EAS30490
CIRCUIT DIAGRAM



1. Main switch
7. Ignition fuse
10. Backup fuse 2 (for ECU)
15. Battery
16. Engine ground
18. Main fuse
22. Relay unit
25. Joint coupler
26. Sidestand switch
27. Crankshaft position sensor
30. Ignition coil #1
31. Ignition coil #2
32. Spark plug
36. ECU (Engine Control Unit)
40. Lean angle sensor
62. Gear position switch
63. Handlebar switch (right)
66. Start/engine stop switch

A. Wire harness
C. Sub-wire harness (gear position switch, coolant temperature sensor, fuel injector)

EAS30492
TROUBLESHOOTING

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

TIP

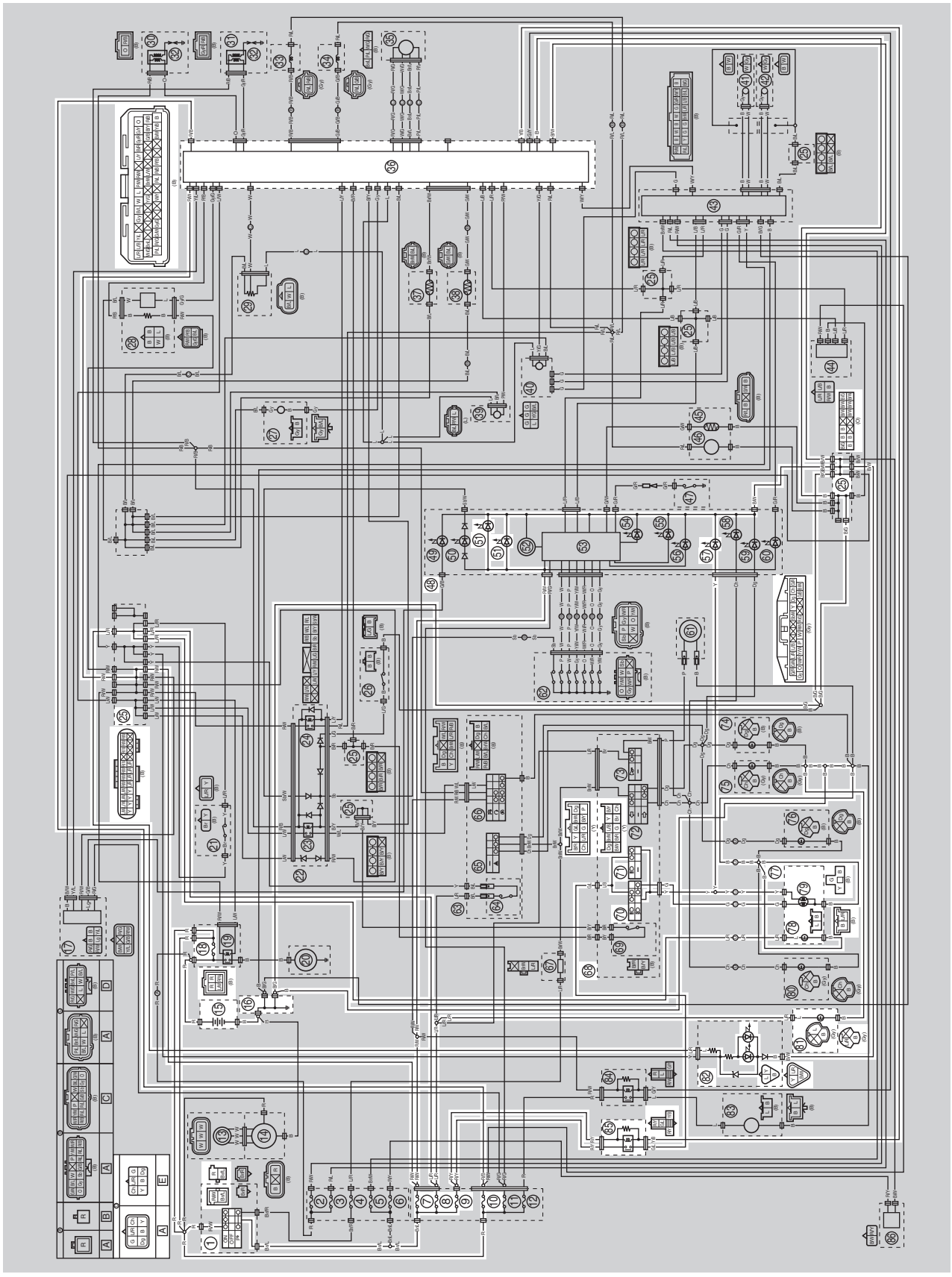
• Before troubleshooting, remove the following part(s):
1. Battery cover
2. Fuel tank center cover/Air scoops
3. Fuel tank
4. Drive sprocket cover
5. Headlight assembly

1. Check the fuses. (Ignition, backup 2, and main) Refer to “CHECKING THE FUSES” on page 81.	NG →	Replace the fuse(s).
OK ↓		
2. Check the battery. Refer to “CHECKING AND CHARGING THE BATTERY” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	• Clean the battery terminals. • Recharge or replace the battery.
OK ↓		
3. Check the spark plugs. Refer to “CHECKING THE SPARK PLUGS” in chapter 3. (Manual No.: B34-F8197-E2)	NG →	Re-gap or replace the spark plug(s).
OK ↓		
4. Check the ignition spark gap. Refer to “CHECKING THE IGNITION SPARK GAP” in chapter 8. (Manual No.: B34-F8197-E2)	OK →	Ignition system is OK.
NG ↓		
5. Check the ignition coils. Refer to “CHECKING THE IGNITION COILS” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the ignition coil(s).
OK ↓		
6. Check the crankshaft position sensor. Refer to “CHECKING THE CRANKSHAFT POSITION SENSOR” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the crankshaft position sensor.
OK ↓		

7. Check the main switch. Refer to “CHECKING THE SWITCHES” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the main switch/immobilizer unit.
OK ↓		
8. Check the start/engine stop switch. Refer to “CHECKING THE SWITCHES” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	• The start/engine stop switch is faulty. • Replace the right handlebar switch.
OK ↓		
9. Check the gear position switch. Refer to “CHECKING THE GEAR POSITION SWITCH” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the gear position switch.
OK ↓		
10. Check the sidestand switch. Refer to “CHECKING THE SWITCHES” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the sidestand switch.
OK ↓		
11. Check the relay unit (diode). Refer to “CHECKING THE RELAY UNIT (DIODE)” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the relay unit.
OK ↓		
12. Check the lean angle sensor. Refer to “CHECKING THE LEAN ANGLE SENSOR” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the lean angle sensor.
OK ↓		
13. Check the entire ignition system wiring. Refer to “CIRCUIT DIAGRAM” on page 41.	NG →	Properly connect or replace the wiring harness.
OK ↓		
Replace the ECU. Refer to “REPLACING THE ECU (engine control unit)” in chapter 8. (Manual No.: B34-F8197-E2)		

EAS20075
LIGHTING SYSTEM

EAS30498
CIRCUIT DIAGRAM



1. Main switch
7. Ignition fuse
8. Signaling system fuse
9. Headlight fuse
10. Backup fuse 2 (for ECU)
15. Battery
16. Engine ground
18. Main fuse
25. Joint coupler
36. ECU (Engine Control Unit)
48. Meter assembly
51. Meter light
57. High beam indicator light
68. Handlebar switch (left)
70. Dimmer switch
71. Pass switch
77. Headlight assembly
78. Auxiliary light
79. Headlight
81. License plate light
82. Tail/brake light
85. Headlight relay
A. Wire harness
E. Sub-wire harness (headlight, turn signal light, auxiliary light)

EAS30499
TROUBLESHOOTING

Any of the following fail to light: headlight, high beam indicator light, taillight, license plate light or meter light.

TIP

• Before troubleshooting, remove the following part(s):
1. Battery cover
2. Fuel tank center cover/Air scoops
3. Fuel tank
4. Headlight assembly

1. Check the each bulbs and bulb sockets condition. Refer to “CHECKING THE BULBS AND BULB SOCKETS” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the bulb(s) and bulb socket(s).
OK ↓		
2. Check the fuses. (Ignition, signaling system, headlight, backup 2, and main) Refer to “CHECKING THE FUSES” on page 81.	NG →	Replace the fuse(s).
OK ↓		
3. Check the battery. Refer to “CHECKING AND CHARGING THE BATTERY” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	• Clean the battery terminals. • Recharge or replace the battery.
OK ↓		
4. Check the main switch. Refer to “CHECKING THE SWITCHES” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the main switch/immobilizer unit.
OK ↓		
5. Check the dimmer switch. Refer to “CHECKING THE SWITCHES” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	• The dimmer switch is faulty. • Replace the left handlebar switch.
OK ↓		
6. Check the pass switch. Refer to “CHECKING THE SWITCHES” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	• The pass switch is faulty. • Replace the left handlebar switch.
OK ↓		

7. Check the headlight relay.
   Refer to “CHECKING THE RELAYS” in chapter 8. (Manual No.: B34-F8197-E2)

NG → Replace the headlight relay.

OK ↓

8. Check the entire lighting system wiring.
   Refer to “CIRCUIT DIAGRAM” on page 45.

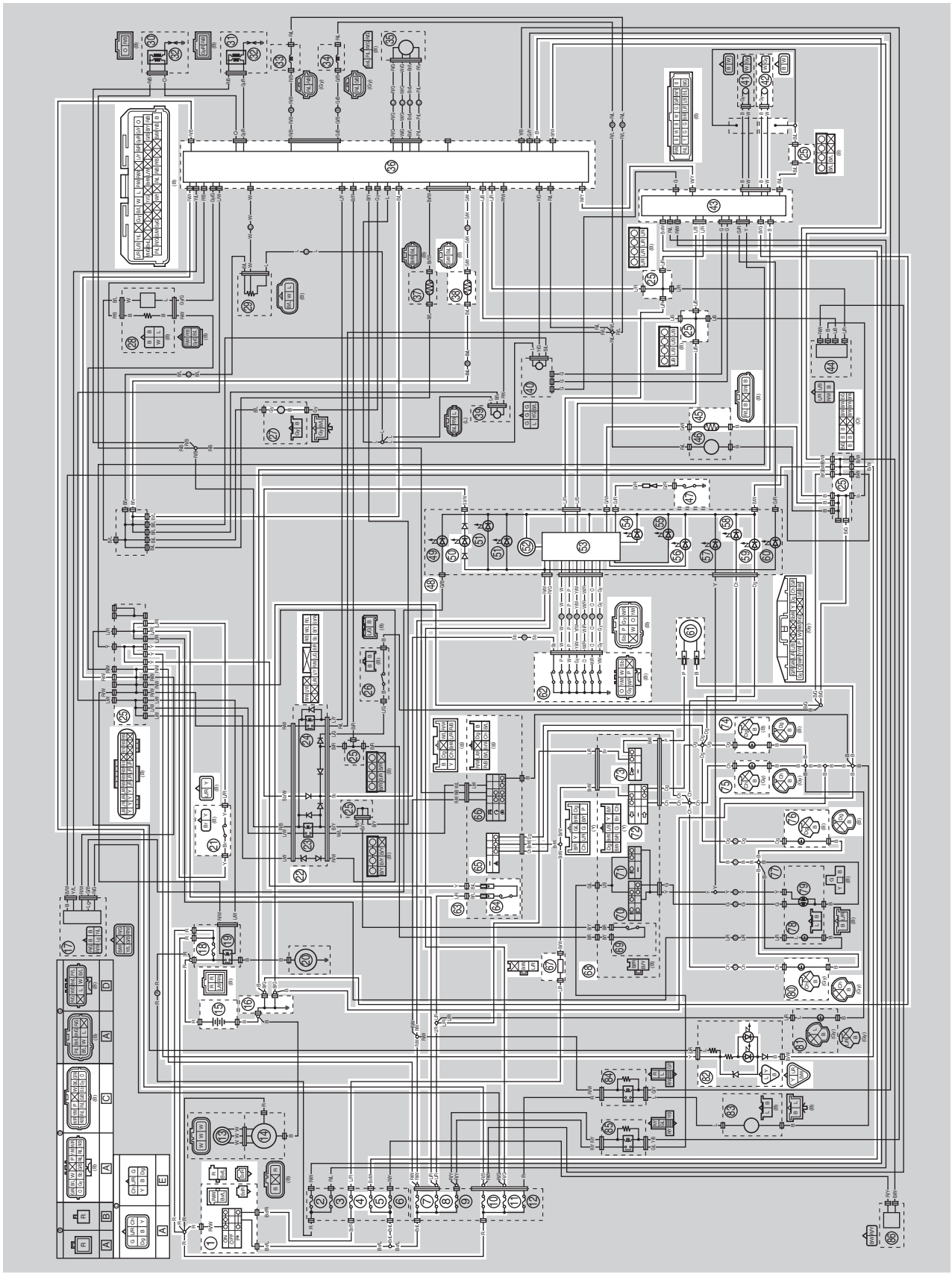
NG → Properly connect or replace the wiring harness.

OK ↓

Replace the ECU, meter assembly, or tail/brake light. Refer to “REPLACING THE ECU (engine control unit)” in chapter 8. (Manual No.: B34-F8197-E2)

EAS20076
SIGNALING SYSTEM

EAS30500
CIRCUIT DIAGRAM



1. Main switch
4. Parking lighting fuse
5. ABS control unit fuse
7. Ignition fuse
8. Signaling system fuse
10. Backup fuse 2 (for ECU)
11. Backup fuse (for clock and immobilizer system)
15. Battery
16. Engine ground
18. Main fuse
21. Rear brake light switch
22. Relay unit
25. Joint coupler
36. ECU (Engine Control Unit)
38. Coolant temperature sensor
42. Rear wheel sensor
43. ABS ECU (electronic control unit)
45. Fuel sender
47. Oil pressure switch
48. Meter assembly
50. Neutral indicator light
52. Tachometer
53. Multi-function meter
54. Oil pressure warning light
56. Coolant temperature warning light
58. Turn signal indicator light (left)
59. Turn signal indicator light (right)
61. Horn
62. Gear position switch
63. Handlebar switch (right)
64. Front brake light switch
65. Hazard switch
67. Turn signal/hazard relay
68. Handlebar switch (left)
72. Turn signal switch
73. Horn switch
74. Rear turn signal light (right)
75. Rear turn signal light (left)
76. Front turn signal light (right)
80. Front turn signal light (left)
82. Tail/brake light

A. Wire harness
C. Sub-wire harness (gear position switch, coolant temperature sensor, fuel injector)
E. Sub-wire harness (headlight, turn signal light, auxiliary light)

EAS30501
TROUBLESHOOTING

- Any of the following fail to light: turn signal light, brake light or an indicator light.
- The horn fails to sound.
- The fuel meter fails to come on.
- The speedometer fails to operate.

TIP

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

1. Battery cover
2. Fuel tank center cover/Air scoops
3. Fuel tank
4. Drive sprocket cover
5. Headlight assembly

1. Check the fuses. (Parking lighting, ABS control unit, ignition, signaling system, backup 2, backup, and main) Refer to “CHECKING THE FUSES” on page 81.	NG →	Replace the fuse(s).
OK ↓		
2. Check the battery. Refer to “CHECKING AND CHARGING THE BATTERY” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	• Clean the battery terminals. • Recharge or replace the battery.
OK ↓		
3. Check the main switch. Refer to “CHECKING THE SWITCHES” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the main switch/immobilizer unit.
OK ↓		
4. Check the entire signaling system wiring. Refer to “CIRCUIT DIAGRAM” on page 49.	NG →	Properly connect or replace the wiring harness.
OK ↓		
Check the condition of each of the signaling system circuits. Refer to “Checking the signaling system” on page 52.		

Checking the signaling system

The horn fails to sound.

1. Check the horn switch.
   Refer to "CHECKING THE SWITCHES" in chapter 8. (Manual No.: B34-F8197-E2)

NG → • The horn switch is faulty.
• Replace the left handlebar switch.

OK ↓

2. Check the entire signaling system wiring.
   Refer to "CIRCUIT DIAGRAM" on page 49.

NG → Properly connect or replace the wiring harness.

OK ↓

Replace the horn.

The tail/brake light fails to come on.

1. Check the front brake light switch.
   Refer to "CHECKING THE SWITCHES" in chapter 8. (Manual No.: B34-F8197-E2)

NG → Replace the front brake light switch.

OK ↓

2. Check the rear brake light switch.
   Refer to "CHECKING THE SWITCHES" in chapter 8. (Manual No.: B34-F8197-E2)

NG → Replace the rear brake light switch.

OK ↓

3. Check the entire signaling system wiring.
   Refer to "CIRCUIT DIAGRAM" on page 49.

NG → Properly connect or replace the wiring harness.

OK ↓

Replace the tail/brake light.

The turn signal light, turn signal indicator light or both fail to blink.

1. Check the turn signal light bulbs and sockets.
   Refer to "CHECKING THE BULBS AND BULB SOCKETS" in chapter 8. (Manual No.: B34-F8197-E2)

NG → Replace the turn signal light bulb, socket or both.

OK ↓

2. Check the turn signal switch.
   Refer to "CHECKING THE SWITCHES" in chapter 8. (Manual No.: B34-F8197-E2)

NG → • The turn signal switch is faulty.
• Replace the left handlebar switch.

OK ↓

3. Check the hazard switch. Refer to "CHECKING THE SWITCHES" in chapter 8. (Manual No.: B34-F8197-E2)	NG →	• The hazard switch is faulty. • Replace the right handlebar switch.
OK ↓		
4. Check the turn signal/hazard relay. Refer to "CHECKING THE RELAYS" in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the turn signal/hazard relay.
OK ↓		
5. Check the entire signaling system wiring. Refer to "CIRCUIT DIAGRAM" on page 49.	NG →	Properly connect or replace the wiring harness.
OK ↓		
Replace the meter assembly.		

The neutral indicator light fails to come on.

1. Check the gear position switch. Refer to "CHECKING THE GEAR POSITION SWITCH" in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the gear position switch.
OK ↓		
2. Check the relay unit (diode). Refer to "CHECKING THE RELAY UNIT (DIODE)" in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the relay unit.
OK ↓		
3. Check the entire signaling system wiring. Refer to "CIRCUIT DIAGRAM" on page 49.	NG →	Properly connect or replace the wiring harness.
OK ↓		
Replace the meter assembly.		

The oil pressure warning light fails to come on when the main switch is set to "ON".

1. Check the entire signaling system wiring. Refer to "CIRCUIT DIAGRAM" on page 49.	NG →	Properly connect or replace the wiring harness
OK ↓		

2. Disconnect the oil pressure switch lead from the oil pressure switch, and then check whether the oil pressure warning light comes on when the lead is connected to the engine ground.	NG →	Replace the meter assembly.

OK ↓

Replace the oil pressure switch.

The oil pressure warning light remains on after the engine is started.

1. Check the entire signaling system wiring. Refer to “CIRCUIT DIAGRAM” on page 49.	NG →	Properly connect or replace the wiring harness.

OK ↓

2. Measure the engine oil pressure. Refer to “MEASURING THE ENGINE OIL PRESSURE” in chapter 3. (Manual No.: B34-F8197-E2)	NG →	Check the engine oil leakage, oil viscosity, oil seal, oil filter, or oil pump.

OK ↓

Replace the oil pressure switch.

The fuel meter, fuel level warning light, or both fail to come on.

1. Check the fuel sender. Refer to “CHECKING THE FUEL SENDER” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the fuel pump assembly.

OK ↓

2. Check the entire signaling system wiring. Refer to “CIRCUIT DIAGRAM” on page 49.	NG →	Properly connect or replace the wiring harness.

OK ↓

Replace the meter assembly.

The coolant temperature warning light fails to come on.

1. Check the coolant temperature sensor. Refer to “CHECKING THE COOLANT TEMPERATURE SENSOR” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the coolant temperature sensor.

OK ↓

2. Check the entire signaling system wiring.
   Refer to “CIRCUIT DIAGRAM” on page 49.

NG → Properly connect or replace the wiring harness.

OK ↓

Replace the ECU or meter assembly. Refer to “REPLACING THE ECU (engine control unit)” in chapter 8. (Manual No.: B34-F8197-E2)

The speedometer fails to operate.

1. Check the rear wheel sensor.
   Refer to “MAINTENANCE OF THE REAR WHEEL SENSOR AND SENSOR ROTOR” in chapter 4. (Manual No.: B34-F8197-E2)

NG → Replace the rear wheel sensor.

OK ↓

2. Check the entire rear wheel sensor wiring.
   Refer to TIP.

NG → Properly connect or replace the wiring harness.

OK ↓

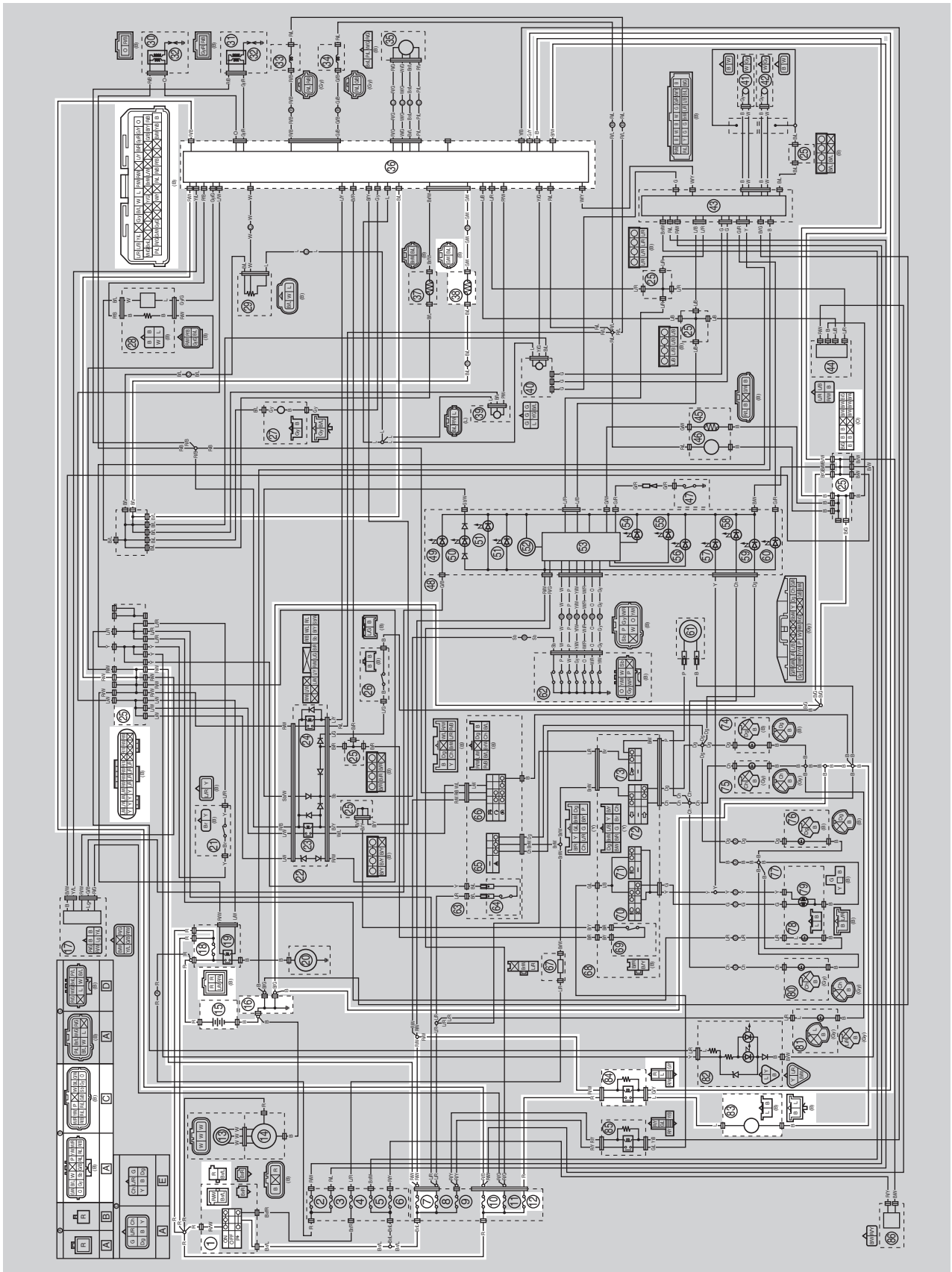
Replace the ECU, ABS ECU, or meter assembly. Refer to “REPLACING THE ECU (engine control unit)” in chapter 8. (Manual No.: B34-F8197-E2)

TIP

Replace the wire harness if there is an open or short circuit.
- Between rear wheel sensor coupler and ABS ECU coupler.
  (white–white)
  (black–black)
- Between ABS ECU coupler and meter assembly coupler.
  (blue/black–blue/black)
  (blue/red–blue/red)

EAS20077
COOLING SYSTEM

EAS30502
CIRCUIT DIAGRAM



1. Main switch
7. Ignition fuse
10. Backup fuse 2 (for ECU)
12. Radiator fan motor fuse
15. Battery
16. Engine ground
18. Main fuse
25. Joint coupler
36. ECU (Engine Control Unit)
38. Coolant temperature sensor
83. Radiator fan motor
84. Radiator fan motor relay
A. Wire harness
C. Sub-wire harness (gear position switch, coolant temperature sensor, fuel injector)

EAS30503
TROUBLESHOOTING

The radiator fan motor fails to turn.

TIP

• Before troubleshooting, remove the following part(s):
1. Battery cover
2. Fuel tank center cover/Air scoops
3. Fuel tank

1. Check the fuses. (Ignition, backup 2, radiator fan motor, and main) Refer to “CHECKING THE FUSES” on page 81.	NG →	Replace the fuse(s).
OK ↓		
2. Check the battery. Refer to “CHECKING AND CHARGING THE BATTERY” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	• Clean the battery terminals. • Recharge or replace the battery.
OK ↓		
3. Check the main switch. Refer to “CHECKING THE SWITCHES” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the main switch/immobilizer unit.
OK ↓		
4. Check the radiator fan motor. Refer to “CHECKING THE RADIATOR FAN MOTOR” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the radiator fan motor.
OK ↓		
5. Check the radiator fan motor relay. Refer to “CHECKING THE RELAYS” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the radiator fan motor relay.
OK ↓		
6. Check the coolant temperature sensor. Refer to “CHECKING THE COOLANT TEMPERATURE SENSOR” in chapter 8. (Manual No.: B34-F8197-E2)	NG →	Replace the coolant temperature sensor.
OK ↓		

7. Check the entire cooling system wiring.
   Refer to “CIRCUIT DIAGRAM” on page 57.

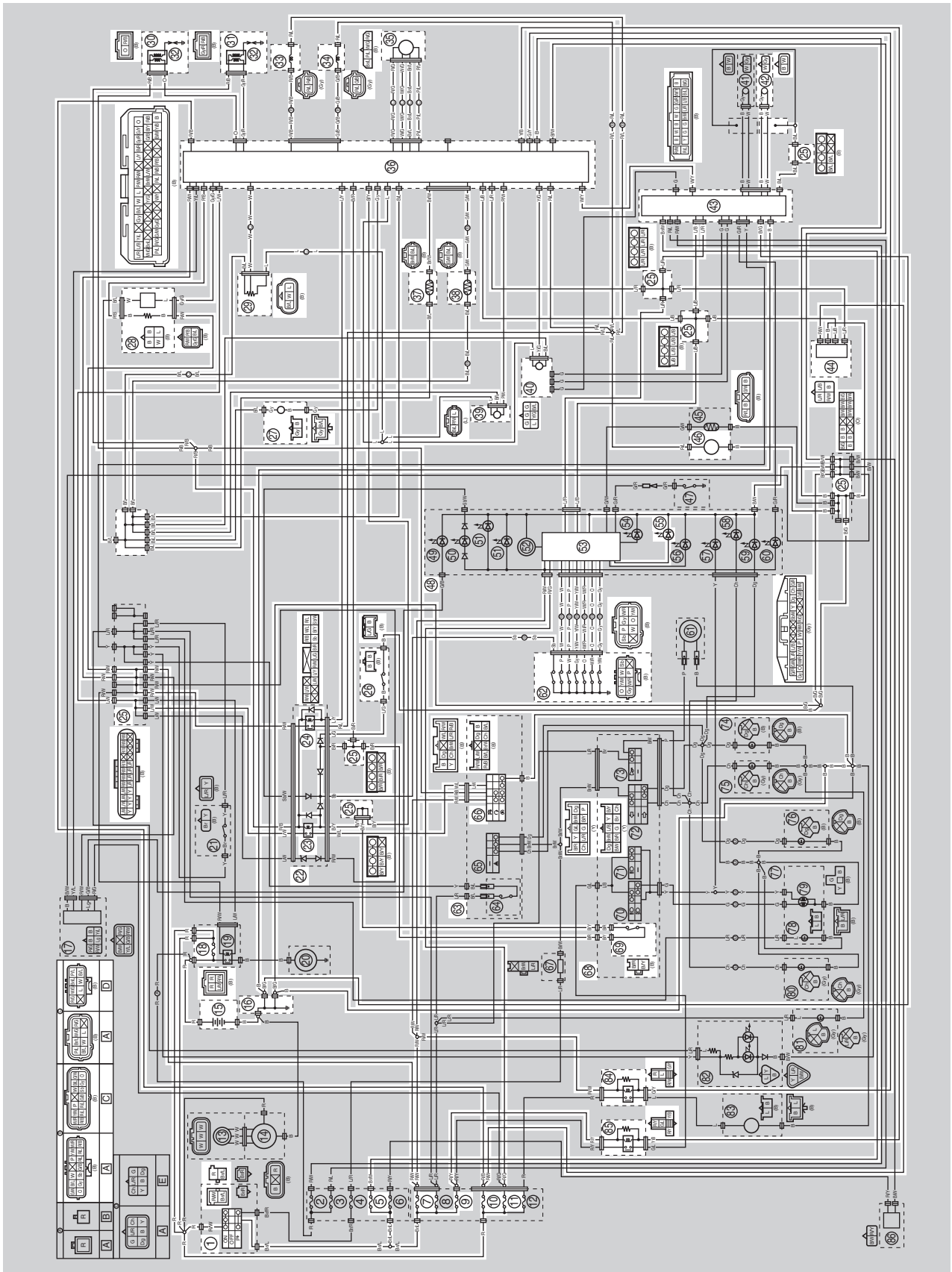
NG → Properly connect or replace the wiring harness.

OK ↓

Replace the ECU. Refer to “REPLACING THE ECU (engine control unit)” in chapter 8. (Manual No.: B34-F8197-E2)

EAS20078
FUEL INJECTION SYSTEM

EAS30504
CIRCUIT DIAGRAM



1. Main switch
5. ABS control unit fuse
7. Ignition fuse
9. Headlight fuse
10. Backup fuse 2 (for ECU)
11. Backup fuse (for clock and immobilizer system)
15. Battery
16. Engine ground
18. Main fuse
22. Relay unit
23. Starting circuit cut-off relay
24. Fuel pump relay
25. Joint coupler
26. Sidestand switch
27. Crankshaft position sensor
28. O_2 sensor
29. Throttle position sensor
30. Ignition coil #1
31. Ignition coil #2
32. Spark plug
33. Fuel injector #1
34. Fuel injector #2
35. ISC (Idle Speed Control) unit
36. ECU (Engine Control Unit)
37. Intake air temperature sensor
38. Coolant temperature sensor
39. Intake air pressure sensor
40. Lean angle sensor
42. Rear wheel sensor
43. ABS ECU (electronic control unit)
44. Yamaha diagnostic tool coupler
46. Fuel pump
48. Meter assembly
53. Multi-function meter
55. Engine trouble warning light
62. Gear position switch
63. Handlebar switch (right)
66. Start/engine stop switch
68. Handlebar switch (left)
69. Clutch switch
84. Radiator fan motor relay
85. Headlight relay

A. Wire harness
C. Sub-wire harness (gear position switch, coolant temperature sensor, fuel injector)
D. Sub-wire harness (throttle position sensor, ISC)

EAS31791
TROUBLESHOOTING DETAILS (FAULT CODE)

Fault code No. P0132

Fault code No.	**P0132**
Item	**O_2 sensor: short circuit detected (power short circuit).**
Fail-safe system	Able to start engine
	Able to drive vehicle
Diagnostic code No.	—
Tool display	—
Procedure	—

Item	Probable cause of malfunction and check	Maintenance job	Confirmation of service completion
1	Installed condition of O_2 sensor.	Check for looseness or pinching. Improperly installed sensor → Reinstall or replace the sensor.	Turn the main switch to “ON”, and then check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is “Recover” → Go to item 7 and finish the service. Condition is “Malfunction” → Go to item 2.
2	Connection of O_2 sensor coupler. Check the locking condition of the coupler. Disconnect the coupler and check the pins (bent or broken terminals and locking condition of the pins).	Improperly connected → Connect the coupler securely or replace the wire harness.	Turn the main switch to “ON”, and then check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is “Recover” → Go to item 7 and finish the service. Condition is “Malfunction” → Go to item 3.
3	Connection of wire harness ECU coupler. Check the locking condition of the coupler. Disconnect the coupler and check the pins (bent or broken terminals and locking condition of the pins).	Improperly connected → Connect the coupler securely or replace the wire harness.	Turn the main switch to “ON”, and then check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is “Recover” → Go to item 7 and finish the service. Condition is “Malfunction” → Go to item 4.

Fault code No.		P0132	
Item		O_2 sensor: short circuit detected (power short circuit).	
4	Wire harness continuity.	Open or short circuit → Properly connect or replace the wire harness. Between O_2 sensor coupler and ECU coupler. black/blue-black/blue gray/green-gray/green	Turn the main switch to "ON", and then check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is "Recover" → Go to item 7 and finish the service. Condition is "Malfunction" → Go to item 5.
5	Defective O_2 sensor.	Check the O_2 sensor. Defective → Replace the O_2 sensor. Refer to "ENGINE REMOVAL" in chapter 5. (Manual No.: B34-F8197-E2)	Turn the main switch to "ON", and then check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is "Recover" → Go to item 7 and finish the service. Condition is "Malfunction" → Go to item 6.
6	Malfunction in ECU.	Replace the ECU. Refer to "REPLACING THE ECU (engine control unit)" in chapter 8. (Manual No.: B34-F8197-E2)	
7	Delete the fault code and check that the engine trouble warning light goes off.	Confirm that the fault code has a condition of "Recover" using the Yamaha diagnostic tool, and then delete the fault code.	

Fault code No. P0335

Fault code No.		P0335	
Item		**Crankshaft position sensor: no normal signals are received from the crankshaft position sensor.**	
Fail-safe system		Unable to start engine	
		Unable to drive vehicle	
Diagnostic code No.		—	
Tool display		—	
Procedure		—	
Item	**Probable cause of malfunction and check**	**Maintenance job**	**Confirmation of service completion**

Fault code No.		P0335	
Item		Crankshaft position sensor: no normal signals are received from the crankshaft position sensor.	
1	Connection of crankshaft position sensor coupler. Check the locking condition of the coupler. Disconnect the coupler and check the pins (bent or broken terminals and locking condition of the pins).	Improperly connected → Connect the coupler securely or replace the wire harness.	Crank the engine, and then check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is “Recover” → Go to item 7 and finish the service. Condition is “Malfunction” → Go to item 2.
2	Connection of ECU coupler. Check the locking condition of the coupler. Disconnect the coupler and check the pins (bent or broken terminals and locking condition of the pins).	Improperly connected → Connect the coupler securely or replace the wire harness.	Crank the engine, and then check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is “Recover” → Go to item 7 and finish the service. Condition is “Malfunction” → Go to item 3.
3	Wire harness continuity.	Open or short circuit → Replace the wire harness. Between crankshaft position sensor coupler and ECU coupler. gray–gray black/blue–black/blue	Crank the engine, and then check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is “Recover” → Go to item 7 and finish the service. Condition is “Malfunction” → Go to item 4.
4	Installed condition of crankshaft position sensor. Check for looseness or pinching. Check the gap between the crankshaft position sensor and the generator rotor.	Improperly installed sensor → Reinstall or replace the sensor. Refer to “GENERATOR AND STARTER CLUTCH” in chapter 5. (Manual No.: B34-F8197-E2)	Crank the engine, and then check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is “Recover” → Go to item 7 and finish the service. Condition is “Malfunction” → Go to item 5.
5	Defective crankshaft position sensor.	Check the crankshaft position sensor. Refer to “CHECKING THE CRANKSHAFT POSITION SENSOR” in chapter 8. (Manual No.: B34-F8197-E2) Replace if defective.	Crank the engine, and then check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is “Recover” → Go to item 7 and finish the service. Condition is “Malfunction” → Go to item 6.

Fault code No.		P0335	
Item		Crankshaft position sensor: no normal signals are received from the crankshaft position sensor.	
6	Malfunction in ECU.	Replace the ECU. Refer to “REPLACING THE ECU (engine control unit)” in chapter 8. (Manual No.: B34-F8197-E2)	Service is finished.
7	Delete the fault code and check that the engine trouble warning light goes off.	Confirm that the fault code has a condition of “Recover” using the Yamaha diagnostic tool, and then delete the fault code.	

Fault code No. P2195

TIP

If fault code numbers “P2195” and “P0030” are both indicated, take the actions specified for fault code number “P0030” first.

Fault code No.		P2195	
Item		O_2 sensor: Open circuit detected.	
Fail-safe system		Able to start engine	
		Able to drive vehicle	
Diagnostic code No.		—	
Tool display		—	
Procedure		—	
Item	**Probable cause of malfunction and check**	**Maintenance job**	**Confirmation of service completion**
1	Installed condition of O_2 sensor.	Check for looseness or pinching. Improperly installed sensor → Reinstall or replace the sensor.	Start the engine and let it idle for approximately 10 seconds. Check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is “Recover” → Go to item 8 and finish the service. Condition is “Malfunction” → Go to item 2. Also, delete this fault code, which has a condition of “Malfunction”.

Fault code No.		P2195	
Item		O_2 sensor: Open circuit detected.	
2	Connection of O_2 sensor coupler. Check the locking condition of the coupler. Disconnect the coupler and check the pins (bent or broken terminals and locking condition of the pins).	Improperly connected → Connect the coupler securely or replace the wire harness.	Start the engine and let it idle for approximately 10 seconds. Check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is “Recover” → Go to item 8 and finish the service. Condition is “Malfunction” → Go to item 3. Also, delete this fault code, which has a condition of “Malfunction”.
3	Connection of ECU coupler. Check the locking condition of the coupler. Disconnect the coupler and check the pins (bent or broken terminals and locking condition of the pins).	Improperly connected → Connect the coupler securely or replace the wire harness.	Start the engine and let it idle for approximately 10 seconds. Check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is “Recover” → Go to item 8 and finish the service. Condition is “Malfunction” → Go to item 4. Also, delete this fault code, which has a condition of “Malfunction”.
4	Wire harness continuity.	Open or short circuit → Replace the wire harness. Between O_2 sensor coupler and ECU coupler. gray/green–gray/green pink/black–pink/black black/blue–black/blue Between O_2 sensor coupler and joint coupler. red/white–red/white Between joint coupler and ignition fuse. red/white–red/white	Start the engine and let it idle for approximately 10 seconds. Check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is “Recover” → Go to item 8 and finish the service. Condition is “Malfunction” → Go to item 5. Also, delete this fault code, which has a condition of “Malfunction”.

Fault code No.		**P2195**	
Item		**O_2 sensor: Open circuit detected.**	
5	Check fuel pressure.	Refer to “CHECKING THE FUEL PRESSURE” in chapter 7. (Manual No.: B34-F8197-E2)	Start the engine and let it idle for approximately 10 seconds. Check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is “Recover” → Go to item 8 and finish the service. Condition is “Malfunction” → Go to item 6. Also, delete this fault code, which has a condition of “Malfunction”.
6	Defective O_2 sensor.	Check the O_2 sensor. Replace if defective. Refer to “ENGINE REMOVAL” in chapter 5. (Manual No.: B34-F8197-E2)	Start the engine and let it idle for approximately 10 seconds. Check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is “Recover” → Go to item 8 and finish the service. Condition is “Malfunction” → Go to item 7. Also, delete this fault code, which has a condition of “Malfunction”.
7	Malfunction in ECU.	Replace the ECU. Refer to “REPLACING THE ECU (engine control unit)” in chapter 8. (Manual No.: B34-F8197-E2)	Service is finished.
8	Delete the fault code and check that the engine trouble warning light goes off.	Confirm that the fault code has a condition of “Recover” using the Yamaha diagnostic tool, and then delete the fault code.	

EAS31790
TROUBLESHOOTING DETAILS (EVENT CODE)

Event code No. U0155 or "Err"

TIP

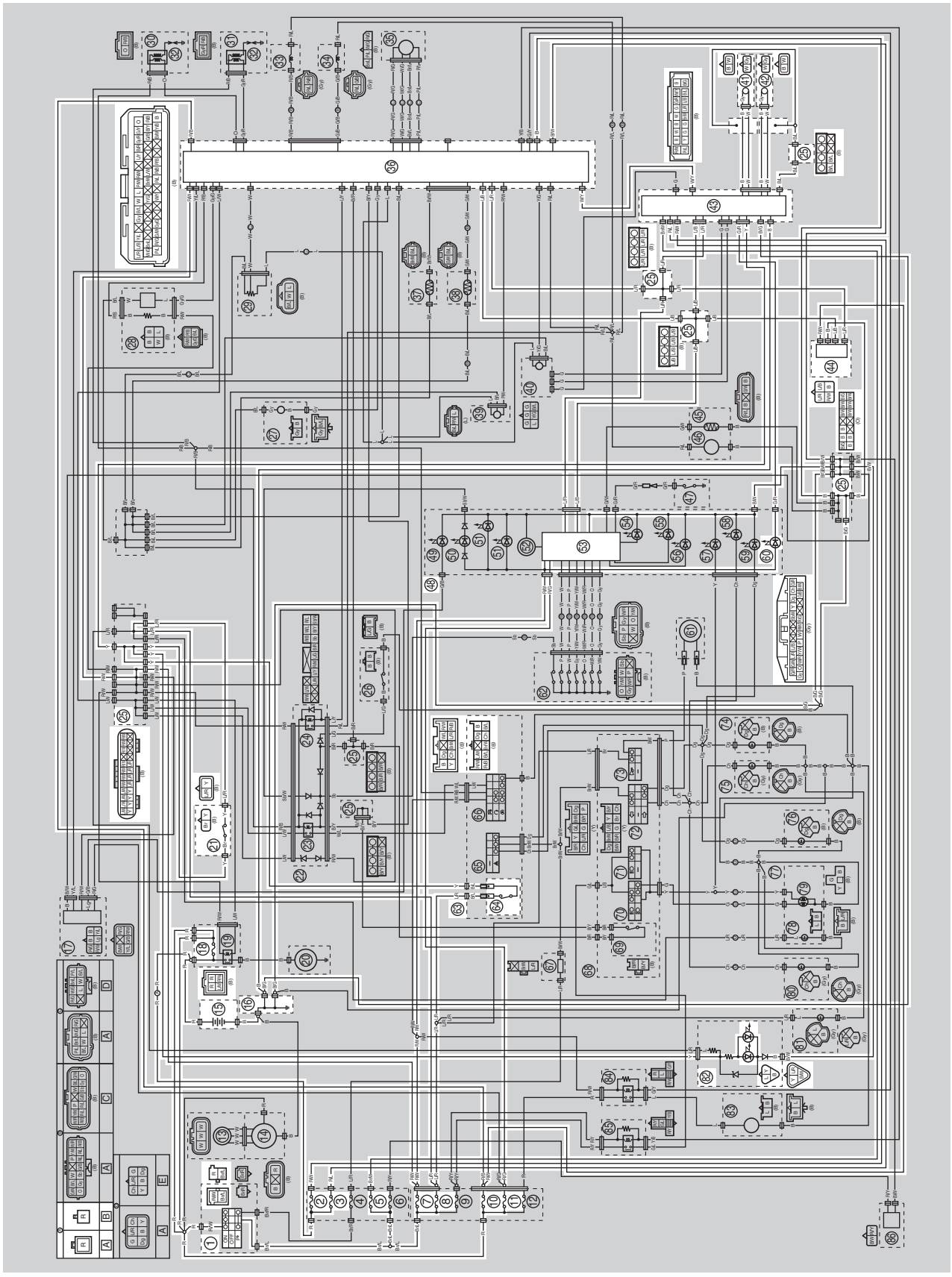
- "Err" is displayed on the clock display of the multi-function meter, but the engine trouble warning light does not come on.
- When the Yamaha diagnostic tool is used, event code No. U0155 is displayed as a fault code.

Event code No.		**U0155 or "Err"**	
Item		**Multi-function meter: signals cannot be transmitted between the ECU and the multi-function meter.**	
Item	**Probable cause of malfunction and check**	**Maintenance job**	**Confirmation of service completion**
1	Connection of meter assembly coupler. Check the locking condition of the coupler. Disconnect the coupler and check the pins (bent or broken terminals and locking condition of the pins).	Improperly connected → Connect the coupler securely or replace the wire harness.	Turn the main switch to "ON", and then check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is "Recover" → Go to item 6 and finish the service. Condition is "Malfunction" → Go to item 2.
2	Connection of ECU coupler. Check the locking condition of the coupler. Disconnect the coupler and check the pins (bent or broken terminals and locking condition of the pins).	Improperly connected → Connect the coupler securely or replace the wire harness.	Turn the main switch to "ON", and then check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is "Recover" → Go to item 6 and finish the service. Condition is "Malfunction" → Go to item 3.
3	Wire harness continuity.	Open or short circuit → Replace the wire harness. Between meter assembly coupler and joint coupler. blue/black–blue/black blue/red–blue/red Between joint coupler and ECU coupler. blue/black–blue/black blue/red–blue/red	Turn the main switch to "ON", and then check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is "Recover" → Go to item 6 and finish the service. Condition is "Malfunction" → Go to item 4.
4	Defective meter assembly.	Replace the meter assembly.	Turn the main switch to "ON", and then check the condition of the fault code using the malfunction mode of the Yamaha diagnostic tool. Condition is "Recover" → Go to item 6 and finish the service. Condition is "Malfunction" → Go to item 5.

Event code No.		**U0155 or “Err”**	
Item		**Multi-function meter: signals cannot be transmitted between the ECU and the multi-function meter.**	
5	Malfunction in ECU.	Replace the ECU. Refer to “REPLACING THE ECU (engine control unit)” in chapter 8. (Manual No.: B34-F8197-E2)	Service is finished.
6	Delete the fault code and check that the engine trouble warning light goes off.	Confirm that the fault code has a condition of “Recover” using the Yamaha diagnostic tool, and then delete the fault code.	

EAS20085
ABS (ANTI-LOCK BRAKE SYSTEM)

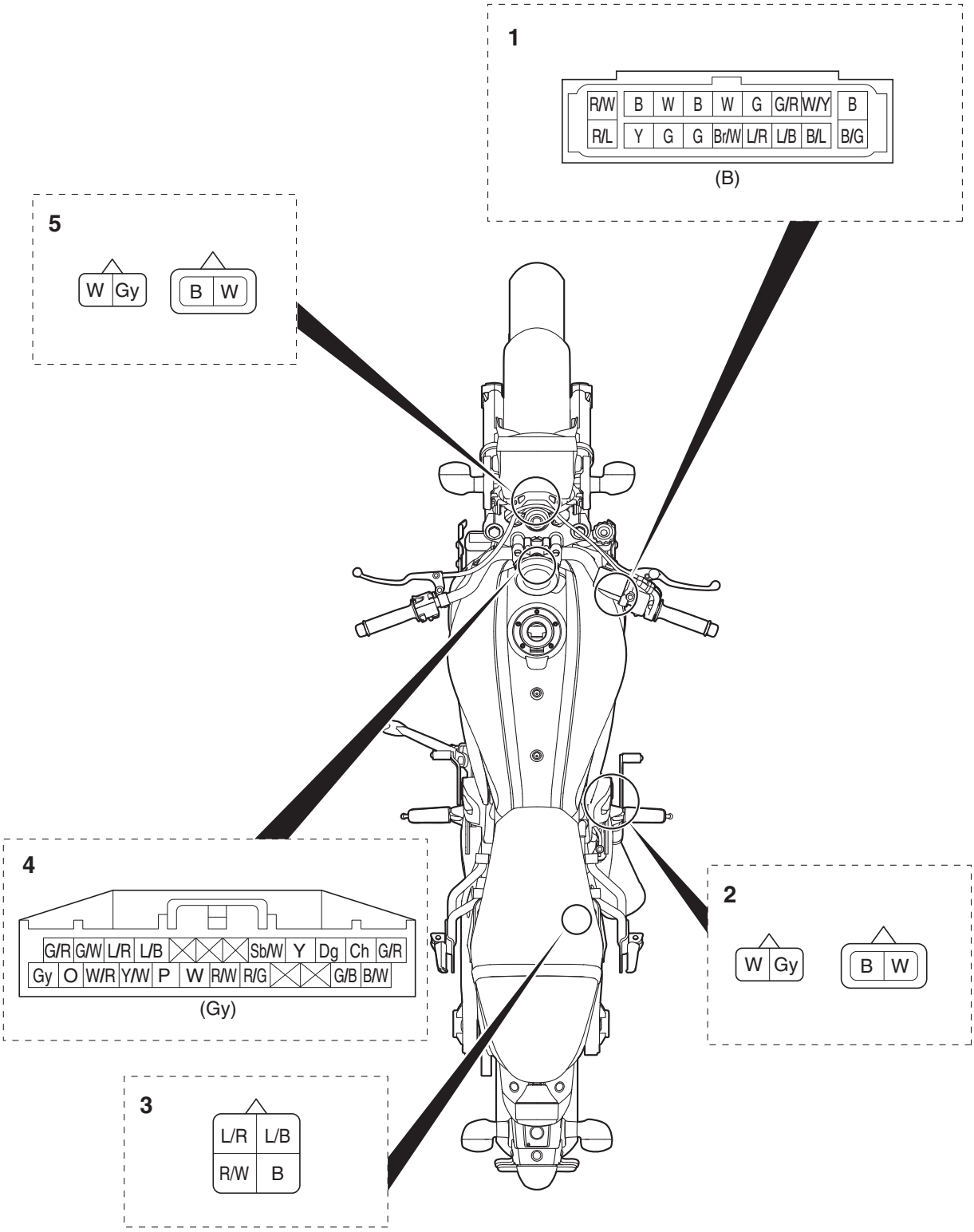
EAS30988
CIRCUIT DIAGRAM



1. Main switch
2. ABS solenoid fuse
3. ABS motor fuse
5. ABS control unit fuse
7. Ignition fuse
8. Signaling system fuse
10. Backup fuse 2 (for ECU)
11. Backup fuse (for clock and immobilizer system)
15. Battery
16. Engine ground
18. Main fuse
21. Rear brake light switch
25. Joint coupler
36. ECU (Engine Control Unit)
41. Front wheel sensor
42. Rear wheel sensor
43. ABS ECU (electronic control unit)
44. Yamaha diagnostic tool coupler
48. Meter assembly
53. Multi-function meter
60. ABS warning light
63. Handlebar switch (right)
64. Front brake light switch
82. Tail/brake light

A. Wire harness
B. Positive battery sub-wire harness

EAS30990
ABS COUPLER LOCATION CHART



1. ABS ECU coupler
2. Rear wheel sensor coupler
3. Yamaha diagnostic tool coupler
4. Meter assembly coupler
5. Front wheel sensor coupler

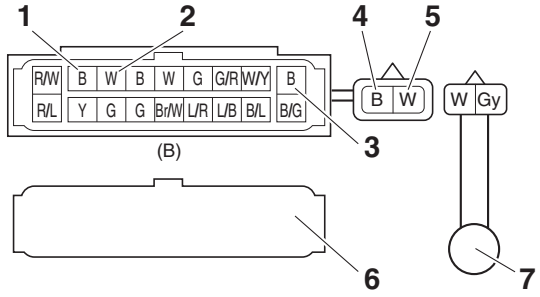
EAS31138
[B-2] DIAGNOSIS USING THE FAULT CODES

Fault code No. 15

TIP

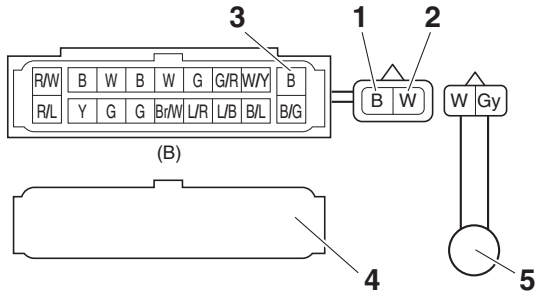
Turn the main switch to “OFF” before disconnecting or connecting a coupler.

Fault code No.	**15**
Item	**Front wheel sensor (open or short circuit)**
Symptom	**Open or short circuit is detected in the front wheel sensor.**

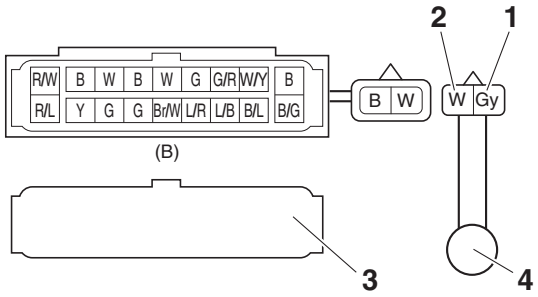
Order	**Item/components and probable cause**	**Check or maintenance job**
1	Defective coupler between the front wheel sensor and the hydraulic unit assembly	• Check the coupler for any pins that may be pulled out. • Check the locking condition of the coupler. • If there is a malfunction, repair it and connect the coupler securely. See TIP.
2	Open or short circuit in the wire harness between the front wheel sensor and the hydraulic unit assembly	• Check for continuity between the black terminal “1” and the black terminal “4” and between the white terminal “2” and the white terminal “5”. • If there is no continuity, the wire harness is defective. Replace the wire harness. • Check that there is no short circuit between the black terminal “1” and the white terminal “2” and between the black terminal “4” and the white terminal “5”. • If there is short circuit, the wire harness is defective. Replace the wire harness. • Check that there is no short circuit between the black terminal “3” and the black terminal “4” and between the black terminal “3” and the white terminal “5”. • If there is short circuit, the wire harness is defective. Replace the wire harness.  6. ABS ECU 7. Front wheel sensor

Fault code No.	15	
Item	Front wheel sensor (open or short circuit)	
Symptom	Open or short circuit is detected in the front wheel sensor.	
Order	**Item/components and probable cause**	**Check or maintenance job**
3	Defective front wheel sensor or hydraulic unit assembly	If the above items were performed and no malfunctions were found, the wheel sensor or hydraulic unit assembly is defective. Replace the wheel sensor or hydraulic unit assembly. Refer to “FRONT WHEEL” and “ABS (ANTI-LOCK BRAKE SYSTEM)” in chapter 4. (Manual No.: B34-F8197-E2)

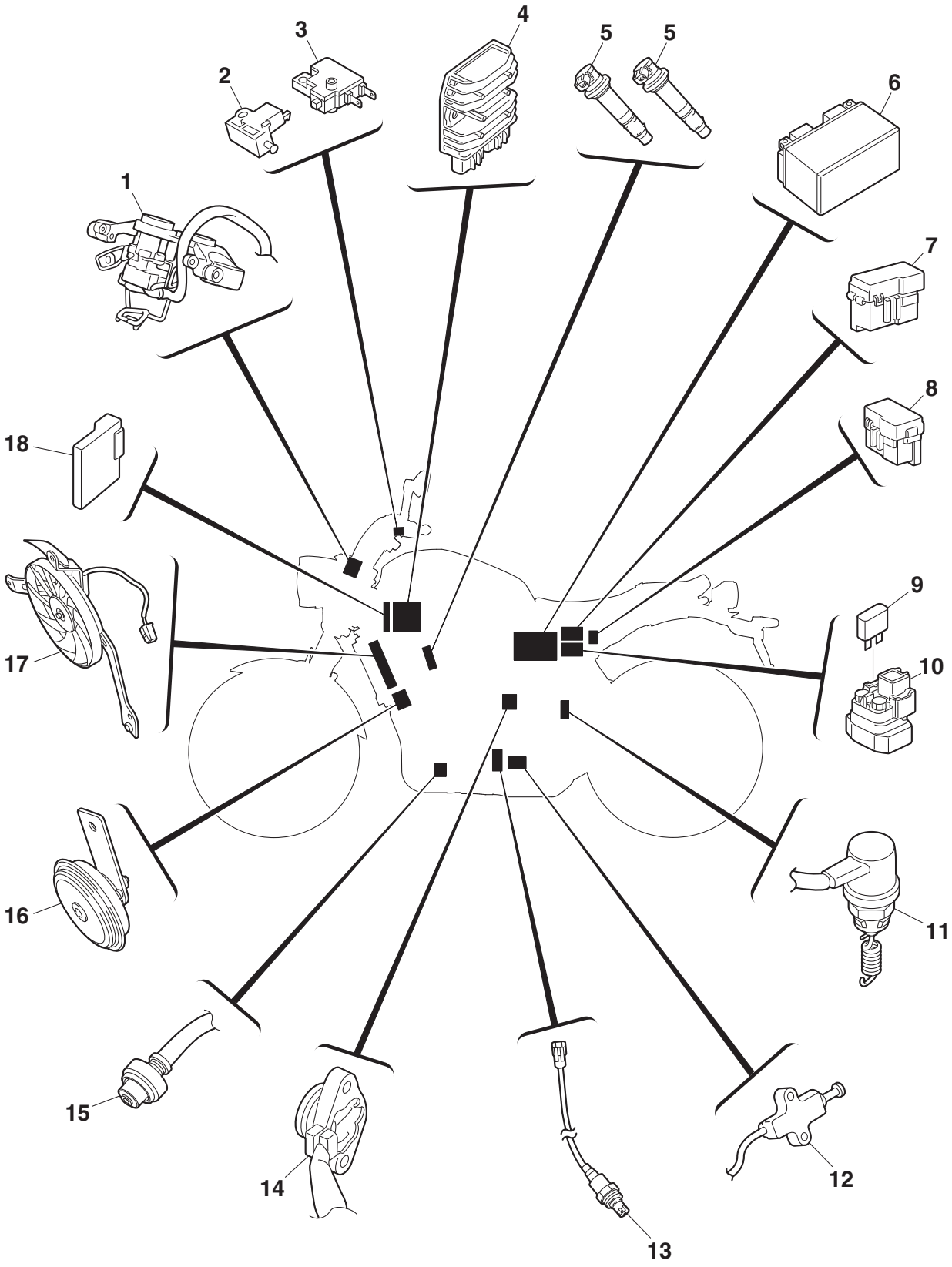
Fault code No. 63

Fault code No.	63	
Item	Front wheel sensor power supply (voltage of power supply is low)	
Symptom	Power voltage supplied from the ABS ECU to the front wheel sensor is too low.	
Order	**Item/components and probable cause**	**Check or maintenance job**
1	Short circuit in the wire harness between the front wheel sensor and the hydraulic unit assembly	• Check that there is no short circuit between the black terminal “1” and the white terminal “2”. • Check that there is no short circuit between the black terminal “3” and the black terminal “1”. • If there is a short circuit, the wire harness is defective. Replace the wire harness.  4. ABS ECU 5. Front wheel sensor

Fault code No.	63
Item	Front wheel sensor power supply (voltage of power supply is low)
Symptom	Power voltage supplied from the ABS ECU to the front wheel sensor is too low.

Order	Item/components and probable cause	Check or maintenance job
2	Defective front wheel sensor	• Check that there is no short circuit between the gray terminal “1” and the white terminal “2”. • If there is a short circuit, the wheel sensor is defective. Repair or replace the wheel sensor.  3. ABS ECU 4. Front wheel sensor
3	Defective hydraulic unit assembly	Replace the hydraulic unit assembly. Refer to “ABS (ANTI-LOCK BRAKE SYSTEM)” in chapter 4. (Manual No.: B34-F8197-E2)

EAS20089
ELECTRICAL COMPONENTS



1. Main switch
2. Front brake light switch
3. Clutch switch
4. Rectifier/regulator
5. Ignition coil
6. Battery
7. Fuse box 1
8. Fuse box 2
9. Main fuse
10. Starter relay
11. Rear brake light switch
12. Sidestand switch
13. O_2 sensor
14. Gear position switch
15. Oil pressure switch
16. Horn
17. Radiator fan motor
18. ECU (Engine Control Unit)

EAS30551
CHECKING THE FUSES

The following procedure applies to all of the fuses.

ECA13680
NOTICE

To avoid a short circuit, always set the main switch to "OFF" when checking or replacing a fuse.

1. Remove:
   - Seat
   - Seat bracket
   - Battery cover

   Refer to "GENERAL CHASSIS (1)" in chapter 4. (Manual No.: B34-F8197-E2)
2. Check:
   - Fuse
     a. Connect the digital circuit tester to the fuse and check the continuity.

Digital circuit tester (CD732)
90890-03243
Model 88 Multimeter with tachometer
YU-A1927

     b. If there is no continuity, replace the fuse.
3. Replace:
   - Blown fuse
     a. Set the main switch to "OFF".
     b. Install a new fuse of the correct amperage rating.
     c. Set on the switches to verify if the electrical circuit is operational.
     d. If the fuse immediately blows again, check the electrical circuit.

Fuses	Amperage rating	Q'ty
Main	30 A	1
ABS motor	30 A	1
ABS solenoid	20 A	1
Headlight	15 A	1
Signaling system	10 A	1
Ignition	10 A	1
Backup 2	10 A	1
Radiator fan motor	10 A	1
Parking lighting	7.5 A	1
ABS control unit	7.5 A	1
Backup	7.5 A	1
Auxiliary	2.0 A	1
Spare	30 A	1
Spare	20 A	1
Spare	15 A	1
Spare	10 A	1
Spare	7.5 A	1
Spare	2.0 A	1

EWA13310
⚠ WARNING

Never use a fuse with an amperage rating other than that specified. Improvising or using a fuse with the wrong amperage rating may cause extensive damage to the electrical system, cause the lighting and ignition systems to malfunction and could possibly cause a fire.

4. Install:
   - Battery cover
   - Seat bracket
   - Seat

   Refer to "GENERAL CHASSIS (1)" in chapter 4. (Manual No.: B34-F8197-E2)

EAS20091

WIRING DIAGRAM

MTM690/MTM690-U 2018

1. Main switch
2. ABS solenoid fuse
3. ABS motor fuse
4. Parking lighting fuse
5. ABS control unit fuse
6. Auxiliary fuse
7. Ignition fuse
8. Signaling system fuse
9. Headlight fuse
10. Backup fuse 2 (for ECU)
11. Backup fuse (for clock and immobilizer system)
12. Radiator fan motor fuse
13. AC magneto
14. Rectifier/regulator
15. Battery
16. Engine ground
17. Immobilizer unit
18. Main fuse
19. Starter relay
20. Starter motor
21. Rear brake light switch
22. Relay unit
23. Starting circuit cut-off relay
24. Fuel pump relay
25. Joint coupler
26. Sidestand switch
27. Crankshaft position sensor
28. O_2 sensor
29. Throttle position sensor
30. Ignition coil #1
31. Ignition coil #2
32. Spark plug
33. Fuel injector #1
34. Fuel injector #2
35. ISC (Idle Speed Control) unit
36. ECU (Engine Control Unit)
37. Intake air temperature sensor
38. Coolant temperature sensor
39. Intake air pressure sensor
40. Lean angle sensor
41. Front wheel sensor
42. Rear wheel sensor
43. ABS ECU (electronic control unit)
44. Yamaha diagnostic tool coupler
45. Fuel sender
46. Fuel pump
47. Oil pressure switch
48. Meter assembly
49. Immobilizer system indicator light
50. Neutral indicator light
51. Meter light
52. Tachometer
53. Multi-function meter
54. Oil pressure warning light
55. Engine trouble warning light
56. Coolant temperature warning light
57. High beam indicator light
58. Turn signal indicator light (left)
59. Turn signal indicator light (right)
60. ABS warning light
61. Horn
62. Gear position switch
63. Handlebar switch (right)
64. Front brake light switch
65. Hazard switch
66. Start/engine stop switch
67. Turn signal/hazard relay
68. Handlebar switch (left)
69. Clutch switch
70. Dimmer switch
71. Pass switch
72. Turn signal switch
73. Horn switch
74. Rear turn signal light (right)
75. Rear turn signal light (left)
76. Front turn signal light (right)
77. Headlight assembly
78. Auxiliary light
79. Headlight
80. Front turn signal light (left)
81. License plate light
82. Tail/brake light
83. Radiator fan motor
84. Radiator fan motor relay
85. Headlight relay
86. Auxiliary DC outlet

A. Wire harness
B. Positive battery sub-wire harness
C. Sub-wire harness (gear position switch, coolant temperature sensor, fuel injector)
D. Sub-wire harness (throttle position sensor, ISC)
E. Sub-wire harness (headlight, turn signal light, auxiliary light)

EAS30613

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/L	Brown/Blue
Br/R	Brown/Red
Br/W	Brown/White
G/B	Green/Black
G/L	Green/Blue
G/R	Green/Red
G/W	Green/White
G/Y	Green/Yellow
Gy/G	Gray/Green
Gy/R	Gray/Red
L/B	Blue/Black
L/G	Blue/Green
L/R	Blue/Red
L/W	Blue/White
L/Y	Blue/Yellow
P/B	Pink/Black
P/L	Pink/Blue
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/G	White/Green
W/L	White/Blue
W/R	White/Red
W/Y	White/Yellow
Y/B	Yellow/Black
Y/G	Yellow/Green
Y/L	Yellow/Blue
Y/W	Yellow/White

MBK Industrie
Z.I. de Rouvroy 02100 Saint Quentin
SAS au capital de 14 000 000 €
R.C St-Quentin B 329 035 422

MBK

YAMAHA

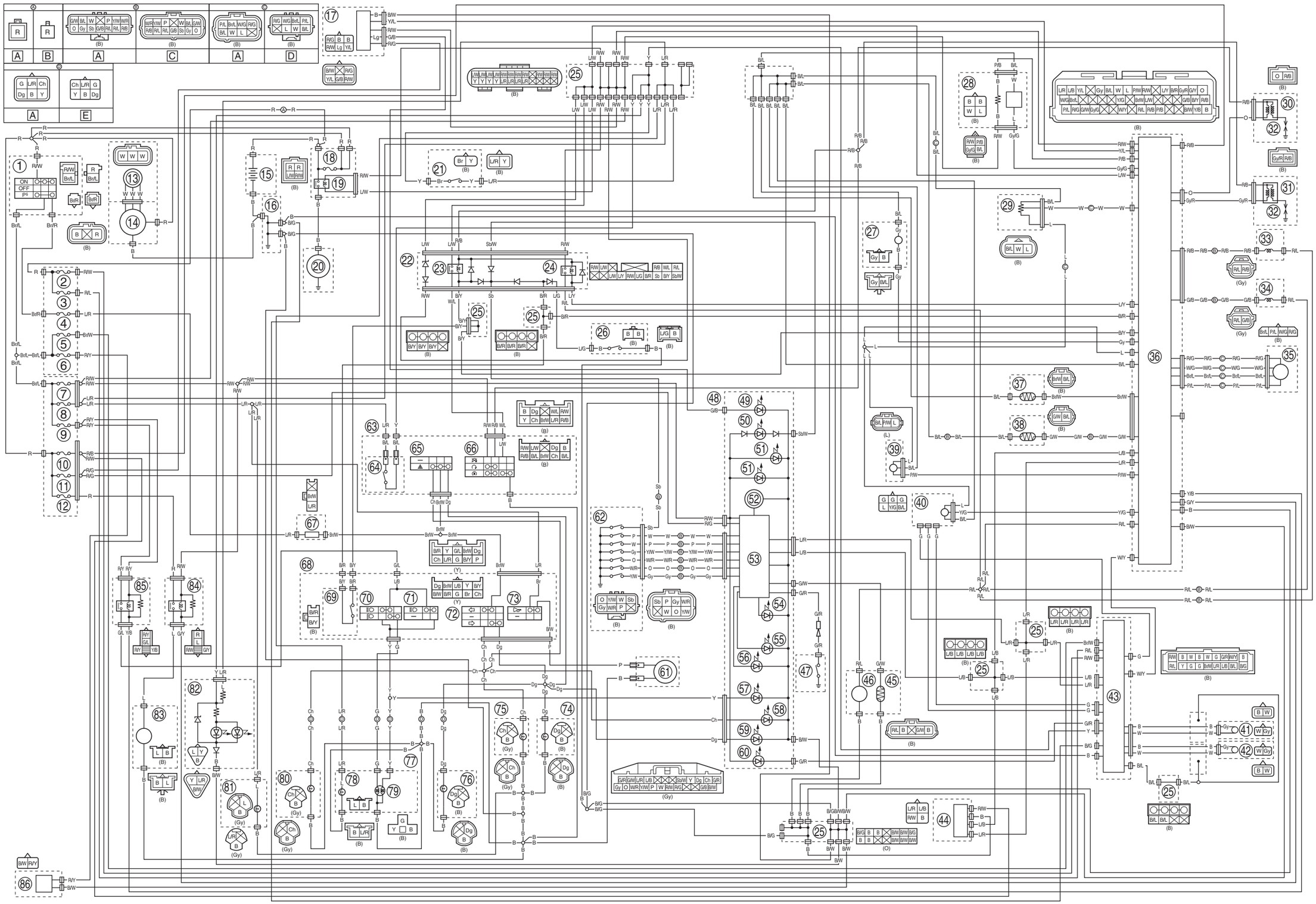
MTM690 2018
WIRING DIAGRAM

MTM690 2018
SCHÉMA DE CÂBLAGE

MTM690 2018
SCHALTPLAN

MTM690 2018
SCHEMA ELETTRICO

MTM690
DIAGRAMA ELÉCTRICO



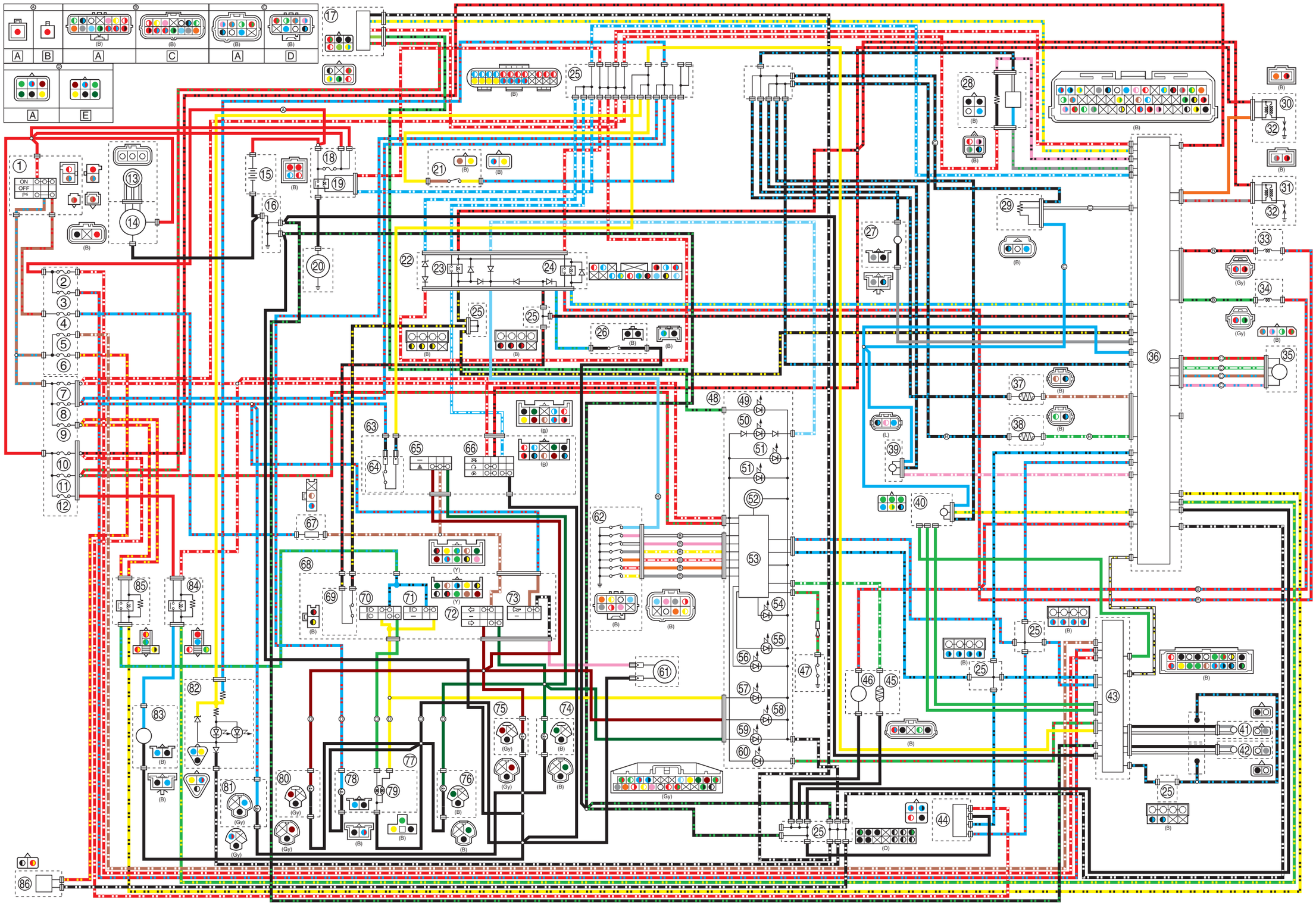
MTM690 2018
WIRING DIAGRAM

MTM690 2018
SCHÉMA DE CÂBLAGE

MTM690 2018
SCHALTPLAN

MTM690 2018
SCHEMA ELETTRICO

MTM690
DIAGRAMA ELÉCTRICO



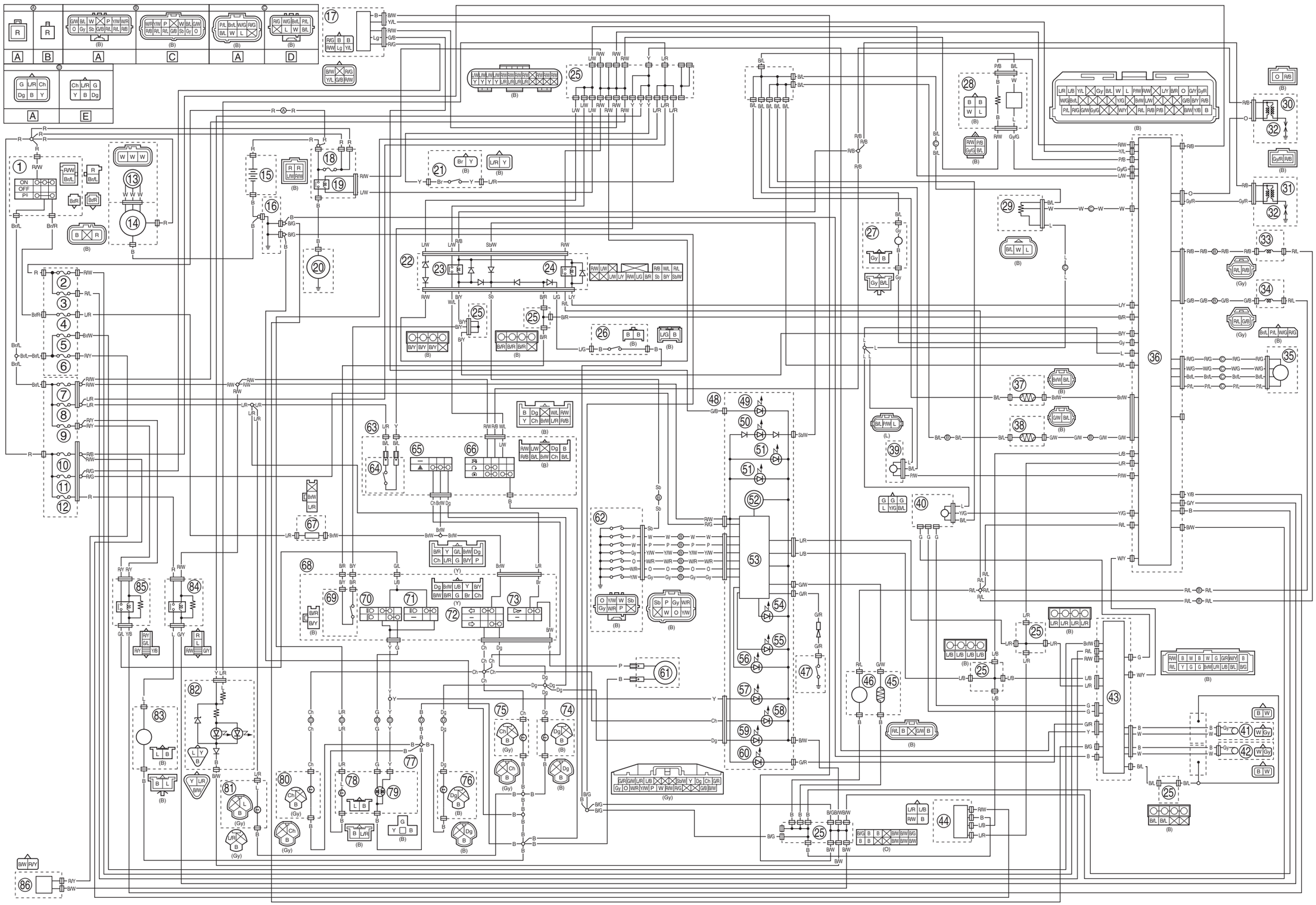
MTM690-U 2018
WIRING DIAGRAM

MTM690-U 2018
SCHÉMA DE CÂBLAGE

MTM690-U 2018
SCHALTPLAN

MTM690-U 2018
SCHEMA ELETTRICO

MTM690-U 2018
DIAGRAMA ELÉCTRICO



MTM690-U 2018
WIRING DIAGRAM

MTM690-U 2018
SCHÉMA DE CÂBLAGE

MTM690-U 2018
SCHALTPLAN

MTM690-U 2018
SCHEMA ELETTRICO

MTM690-U 2018
DIAGRAMA ELÉCTRICO