



YAMAHA MBK

2010

SERVICE MANUAL

YP125R/YP250R

XMAX

SKYCRUISER

37P-F8197-E0

EAS20060

**YP125R/YP250R 2010
SERVICE MANUAL**
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IMPORTANT

This manual was produced by Yamaha Motor España, S.A. primarily for use by Yamaha and MBK 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 and MBK 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 España, S.A. is continually striving to improve all of its models. Modifications and significant changes in specifications or procedures will be forwarded to all authorized Yamaha and MBK dealers and will appear in future editions of this manual where applicable.

TIP

Designs and specifications are subject to change without notice.

IMPORTANT MANUAL INFORMATION

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

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

HOW TO USE THIS MANUAL

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

- 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.
- Jobs “7” requiring more information (such as special tools and technical data) are described sequentially.

1

CYLINDER AND PISTON (YP125R)

CYLINDER AND PISTON (YP125R)

Removing the cylinder and piston

3 →

4 →

5 →

6 →

Order	Job/Parts to remove	Q'ty	Remarks
	Cylinder head		Refer to "CYLINDER HEAD (YP125R)" on page 5-7.
1	Timing chain guide (exhaust side)	1	
2	Cylinder	1	
3	Cylinder gasket	1	
4	Dowel pin	2	
5	Circlip	2	
6	Piston pin	1	
7	Piston	1	
8	Top ring	1	
9	2nd ring	1	
10	Oil ring	1	

For installation, reverse the removal procedure.

5-25

CYLINDER AND PISTON (YP125R)

REMOVING THE PISTON

1. Remove:

- Piston pin clips "1"
- Piston pin "2"
- Piston "3"

NOTICE

Do not use a hammer to drive the piston pin out.

TIP

- Before removing the piston pin clips, cover the crankcase opening with a clean rag to prevent them from falling into the crankcase.
- Before removing the piston pin, deburr the piston pin clip groove and the piston pin bore area. If both areas are deburred and the piston pin is still difficult to remove, remove it with the piston pin puller set "4".

Piston pin puller set 90890-01304
Piston pin puller YU-01304

2. Remove:

- Top ring
- 2nd ring
- Oil ring

7 →

TIP

When removing a piston ring, open the end gap with your fingers and lift the other side of the ring over the piston crown.

2 →

CHECKING THE CYLINDER AND PISTON

1. Check:

- Piston wall
- Cylinder wall

Vertical scratches → Rebore or replace the cylinder, and replace the piston and piston rings as a set.

2. Measure:

- Piston-to-cylinder clearance

Measure cylinder bore "C" with the cylinder bore gauge.

TIP

Measure cylinder bore "C" by taking side-to-side and front-to-back measurements of the cylinder. Then, find the average of the measurements.

Bore 52.000–52.010 mm (2.0472–2.0476 in)
Taper limit 0.050 mm (0.0020 in)
Out of round limit 0.005 mm (0.0002 in)

"C" = maximum of D₁–D₂
 "F" = maximum of D₁ or D₂ - maximum of D₃ or D₅
 "R" = maximum of D₁, D₃ or D₅ - minimum of D₂, D₄ or D₆

5-26

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.

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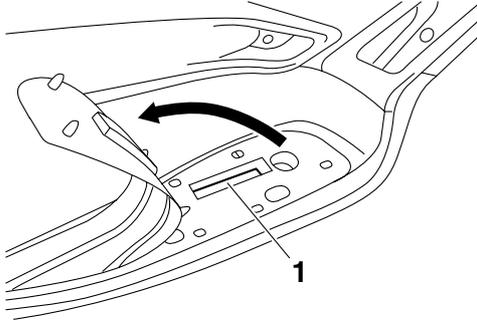
EAS20130

IDENTIFICATION

EAS20140

VEHICLE IDENTIFICATION NUMBER

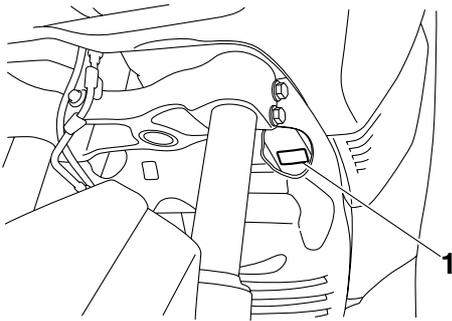
The vehicle identification number “1” is stamped into the frame.



EAS20150

MODEL LABEL

The model label “1” is affixed to the location shown. This information will be needed to order spare parts.



EAS20170

FEATURES

EAS37P1140

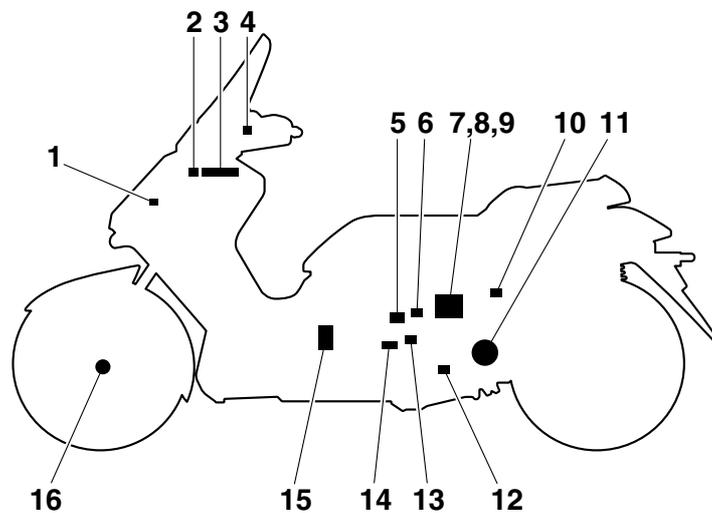
OUTLINE OF THE FI SYSTEM

The main function of a fuel supply system is to provide fuel to the combustion chamber at the optimum air-fuel ratio in accordance with the engine operating conditions and the atmospheric temperature. In the conventional carburetor system, the air-fuel ratio of the mixture that is supplied to the combustion chamber is created by the volume of the intake air and the fuel that is metered by the jet used in the respective carburetor.

Despite the same volume of intake air, the fuel volume requirement varies with the engine operating conditions, such as acceleration, deceleration, or operating under a heavy load. Carburetors that meter the fuel through the use of jets have been provided with various auxiliary devices, so that an optimum air-fuel ratio can be achieved to accommodate the constant changes in the operating conditions of the engine.

As the requirements for the engine to deliver more performance and cleaner exhaust gases increase, it becomes necessary to control the air-fuel ratio in a more precise and finely tuned manner. To accommodate this need, this model has adopted an electronically controlled fuel injection (FI) system, in place of the conventional carburetor system. This system can achieve an optimum air-fuel ratio required by the engine at all times by using a microprocessor that regulates the fuel injection volume according to the engine operating conditions detected by various sensors.

The adoption of the FI system has resulted in a highly precise fuel supply, improved engine response, better fuel economy, and reduced exhaust emissions.



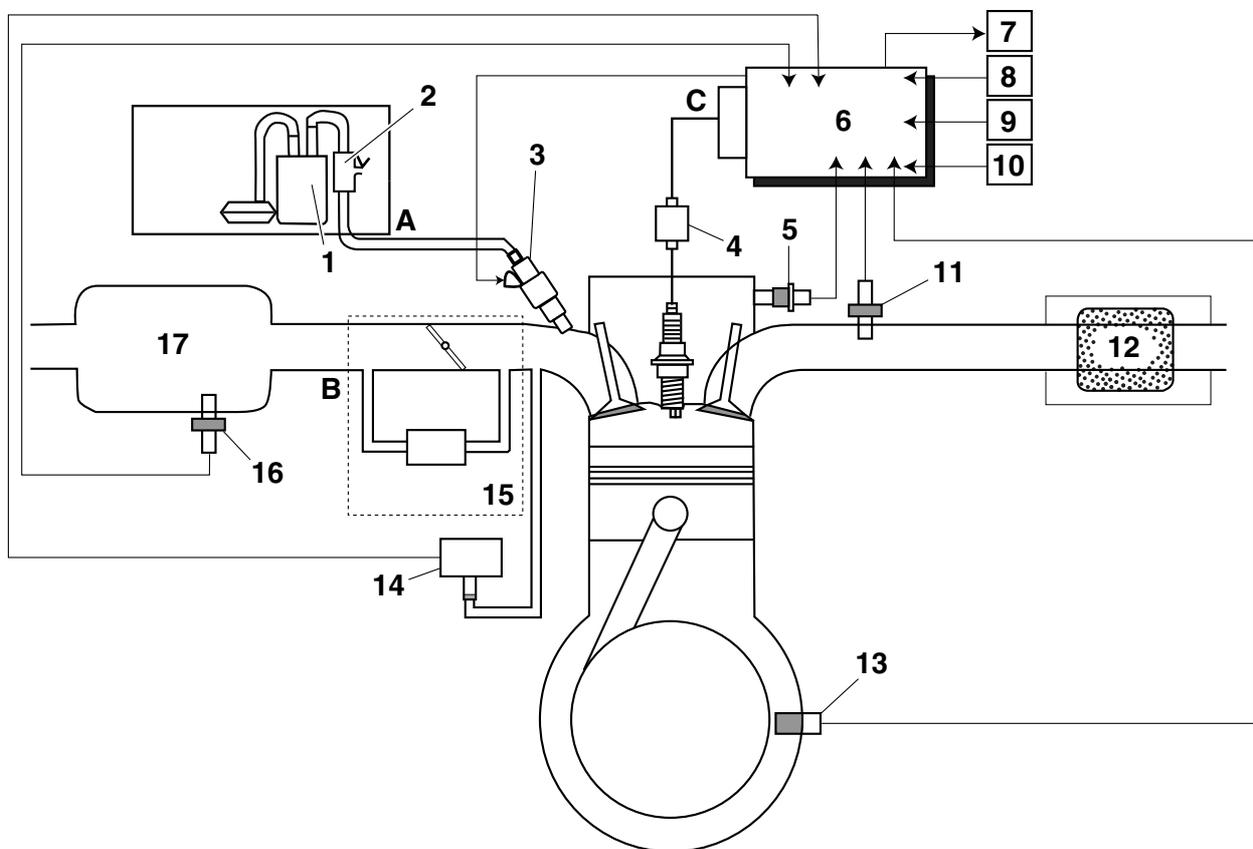
- | | |
|-----------------------------------|--------------------------------|
| 1. Lean angle sensor | 13. Coolant temperature sensor |
| 2. Air temperature sensor | 14. Spark plug |
| 3. ECU (engine control unit) | 15. Fuel pump |
| 4. Engine trouble warning light | 16. Speed sensor |
| 5. Ignition coil | |
| 6. Fuel injector | |
| 7. Intake air pressure sensor | |
| 8. Throttle position sensor | |
| 9. ISC (idle speed control) unit | |
| 10. Intake air temperature sensor | |
| 11. Crankshaft position sensor | |
| 12. O ₂ sensor | |

EAS37P1141

FI SYSTEM

The fuel pump delivers fuel to the fuel injector via the fuel filter. The pressure regulator maintains the fuel pressure that is applied to the fuel injector at only 250 kPa (2.50 kgf/cm², 36.3 psi). Accordingly, when the energizing signal from the ECU energizes the fuel injector, the fuel passage opens, causing the fuel to be injected into the intake manifold only during the time the passage remains open. Therefore, the longer the length of time the fuel injector is energized (injection duration), the greater the volume of fuel that is supplied. Conversely, the shorter the length of time the fuel injector is energized (injection duration), the lesser the volume of fuel that is supplied.

The injection duration and the injection timing are controlled by the ECU. Signals that are input from the throttle position sensor, coolant temperature sensor, lean angle sensor, crankshaft position sensor, intake air pressure sensor, intake air temperature sensor, speed sensor and O₂ sensor enable the ECU to determine the injection duration. The injection timing is determined through the signals from the crankshaft position sensor. As a result, the volume of fuel that is required by the engine can be supplied at all times in accordance with the driving conditions.



- | | |
|----------------------------------|-----------------------------------|
| 1. Fuel pump | 14. Intake air pressure sensor |
| 2. Pressure regulator | 15. Throttle body |
| 3. Fuel injector | 16. Intake air temperature sensor |
| 4. Ignition coil | 17. Air filter case |
| 5. Coolant temperature sensor | |
| 6. ECU (engine control unit) | A. Fuel system |
| 7. ISC (idle speed control) unit | B. Air system |
| 8. Throttle position sensor | C. Control system |
| 9. Lean angle sensor | |
| 10. Speed sensor | |
| 11. O ₂ sensor | |
| 12. Catalytic converter | |
| 13. Crankshaft position sensor | |

INSTRUMENT FUNCTIONS

EAS37P1080

INSTRUMENT FUNCTIONS

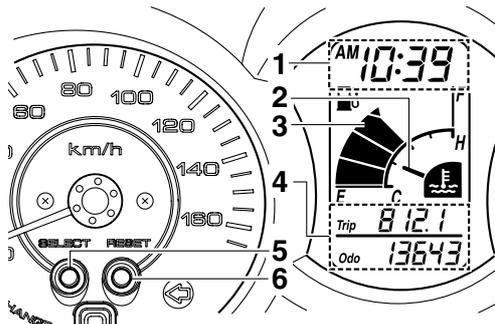
Multi-function display

EWA37P1016

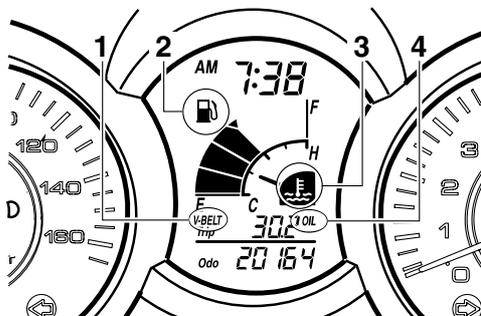


WARNING

Be sure to stop the vehicle before making any setting changes to the multi-function display. Changing settings while riding can distract the operator and increase the risk of an accident.



1. Clock/ambient temperature display
2. Coolant temperature meter
3. Fuel meter
4. Odometer/fuel reserve tripmeter
5. "SELECT" button
6. "RESET" button



1. V-belt replacement indicator "V-BELT"
2. Fuel level warning indicator "⛽"
3. Coolant temperature warning indicator "⋮"
4. Oil change indicator "OIL"

The multi-function display is equipped with the following:

- a fuel meter
- a coolant temperature meter
- an odometer
- two tripmeters (which show the distance traveled since they were last set to zero)

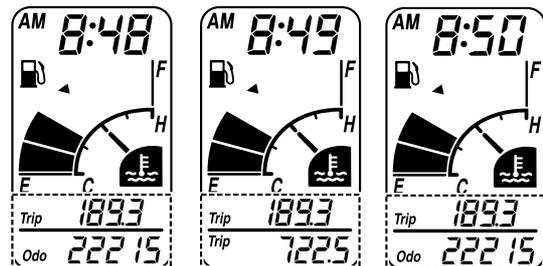
- a fuel reserve tripmeter (which shows the distance traveled since the bottom segment of the fuel meter and fuel level warning indicator started flashing)
- a self-diagnosis device
- a clock
- an ambient temperature display
- an oil change indicator
- a V-belt replacement indicator

TIP

- Be sure to turn the key to "ON" before using the "SELECT" and "RESET" buttons.
- When the key is turned to "ON", all of the display segments of the multi-function display will appear and then disappear, in order to test the electrical circuit.

Odometer and tripmeter modes

Pushing the "SELECT" button switches the display between the odometer mode "Odo" and the tripmeter modes "Trip" in the following order: Odo/Trip (top) → Trip (bottom)/Trip (top) → Odo/Trip (top)

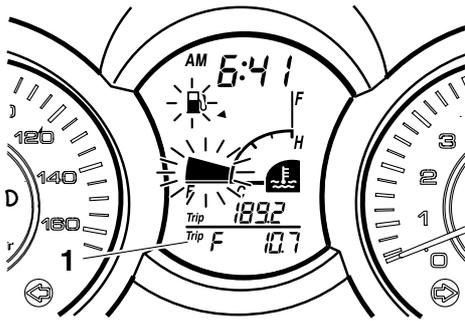


SELECT → SELECT

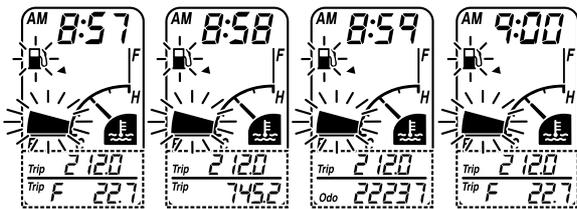
When approximately 1.7 L (0.45 US gal, 0.37 Imp.gal) of fuel remains in the fuel tank, the bottom segment of the fuel meter and fuel level warning indicator will start flashing, and the display will automatically change to the fuel reserve tripmeter mode "Trip F" and start counting the distance traveled from that point. In that case, pushing the "SELECT" button switches the display between the various tripmeter and odometer modes in the following order:

Trip F/Trip (top) → Trip (bottom)/Trip (top) → Odo/Trip (top) → Trip F/Trip (top)

INSTRUMENT FUNCTIONS



1. Fuel reserve tripmeter



SELECT → SELECT → SELECT

To reset a tripmeter, select it by pushing the “SELECT” button until “Trip” or “Trip F” begins flashing (“Trip” or “Trip F” will only flash for five seconds). While “Trip” or “Trip F” is flashing, push the “RESET” button for at least one second. If you do not reset the fuel reserve tripmeter manually, it will reset itself automatically and the display will return to the prior mode after refueling and traveling 5 km (3 mi).

TIP

The display cannot be changed back to “Trip F” after pushing the “RESET” button.

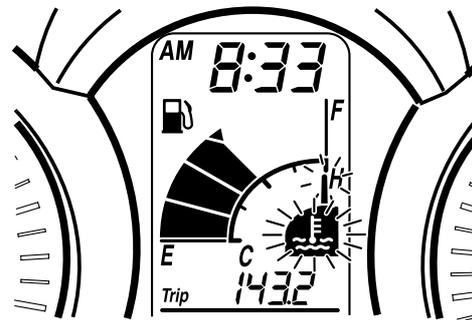
Fuel meter

With the key in the “ON” position, the fuel meter indicates the amount of fuel in the fuel tank. The display segments of the fuel meter disappear towards “E” (Empty) as the fuel level decreases. When the fuel level reaches the bottom segment near “E”, the fuel level warning indicator and the bottom segment will flash. Refuel as soon as possible.

Coolant temperature meter

With the key in the “ON” position, the coolant temperature meter indicates the temperature of the coolant. The coolant temperature varies with changes in the weather and engine load. If the

top segment and coolant temperature warning indicator flash, stop the vehicle and let the engine cool.



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NOTICE

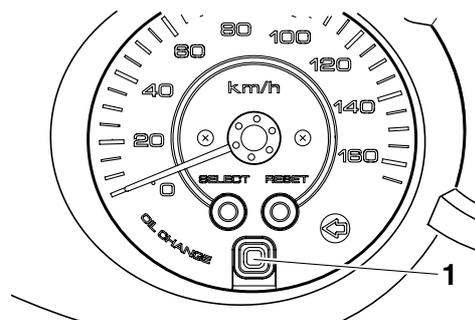
Do not continue to operate the engine if it is overheating.

Oil change indicator “OIL”

This indicator flashes at the initial 1000 km (600 mi), then at 6000 km (3500 mi) and every 6000 km (3500 mi) thereafter for YP125R, or at 4000 km (2500 mi) and every 3000 km (1800 mi) thereafter for YP250R to indicate that the engine oil should be changed. After changing the engine oil, reset the oil change indicator. If the engine oil is changed before the oil change indicator comes on (i.e. before the periodic oil change interval has been reached), the indicator must be reset after the oil change for the next periodic oil change to be indicated at the correct time. To reset the oil change indicator before the periodic oil change interval has been reached, follow the above procedure, but note that the indicator will come on for 1.4 seconds after releasing the “OIL CHANGE” button, otherwise repeat the procedure.

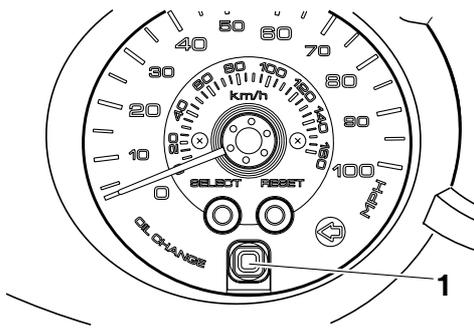
To reset the oil change indicator

1. Turn the key to “ON”.
2. Hold the “OIL CHANGE” button pushed for 15 to 20 seconds.



1. “OIL CHANGE” button

INSTRUMENT FUNCTIONS



1. "OIL CHANGE" button

3. Release the "OIL CHANGE" button, and the oil change indicator will go off.

The electrical circuit of the indicator can be checked according to the following procedure.

1. Turn the key to "ON".
2. Check that the indicator comes on for a few seconds and then goes off.
3. If the indicator does not come on, check the electrical circuit.

Refer to "SIGNALING SYSTEM" on page 8-19.

V-belt replacement indicator "V-BELT"

This indicator flashes every 18000 km (10500 mi) for the YP125R, or every 20000 km (12500 mi) for the YP250R, when the V-belt needs to be replaced.

The electrical circuit of the indicator can be checked according to the following procedure.

1. Turn the key to "ON".
2. Check that the indicator comes on for a few seconds and then goes off.
3. If the indicator does not come on, check the electrical circuit.

Refer to "SIGNALING SYSTEM" on page 8-19.

To reset the V-belt replacement indicator

1. Turn the key to "ON".
2. Disconnect the V-belt replacement reset coupler "1" for two to ten seconds.
3. And then, connect the V-belt replacement reset coupler, the V-belt replacement indicator will come on for 1.4 seconds.

And the V-belt replacement indicator will go off.

TIP

If the V-belt is replaced before the V-belt replacement indicator comes on (i.e. before the V-belt replacement interval has been reached), the

indicator must be reset after the V-belt replacement for the next periodic V-belt replacement to be indicated at the correct time.

Self-diagnosis device

This model is equipped with a self-diagnosis device for various electrical circuits.

If a problem is detected in any of those circuits, the multi-function display will indicate a fault code.

If the multi-function display indicates such a fault code, note the code number, and then check the vehicle.

Refer to "FUEL INJECTION SYSTEM" on page 8-31.

ECA37P1035

NOTICE

If the multi-function display indicates a fault code, the vehicle should be checked as soon as possible in order to avoid engine damage.

The self-diagnosis device also detects problems in the immobilizer system circuits.

If a problem is detected in the immobilizer system circuits, the immobilizer system indicator light will flash and the multi-function display will indicate a fault code when the key is turned to "ON".

TIP

If the multi-function display indicates fault code 52, this could be caused by transponder interference. If this fault appears, try the following.



1. Fault code display

1. Use the code re-registering key to start the engine.

TIP

Make sure there are no other immobilizer keys close to the main switch, and do not keep more than one immobilizer key on the same key ring!

INSTRUMENT FUNCTIONS

Immobilizer system keys may cause signal interference, which may prevent the engine from starting.

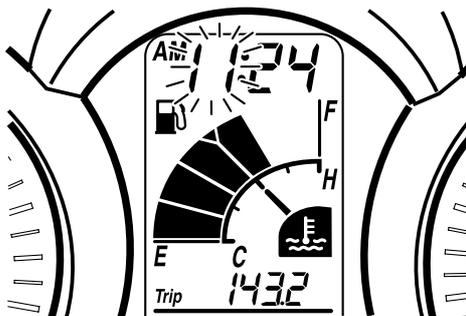
2. If the engine starts, turn it off, and try starting the engine with the standard keys.
3. If one or both of the standard keys do not start the engine, re-register the standard keys. If the multi-function display indicates any fault codes, note the code number, and then check the vehicle.

Refer to "IMMOBILIZER SYSTEM" on page 8-61.

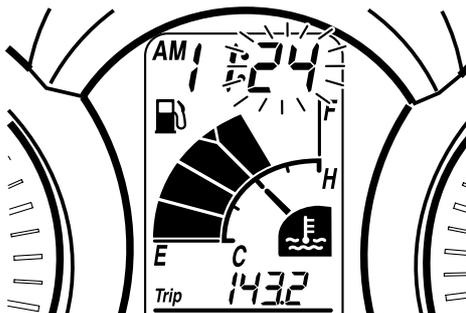
Clock mode

To set the clock:

1. Push the "SELECT" button and "RESET" button together for at least two seconds.
2. When the hour digits start flashing, push the "RESET" button to set the hours.



3. Push the "SELECT" button, and the minute digits will start flashing.



4. Push the "RESET" button to set the minutes.
5. Push the "SELECT" button and then release it to start the clock.

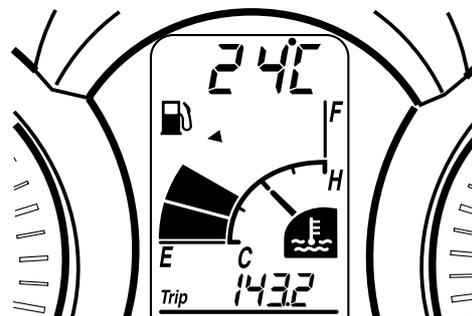
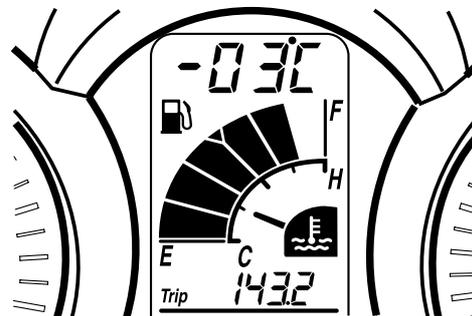
Ambient temperature display

Pushing the "SELECT" button for at least two seconds switches the clock display to the ambient temperature display. This display shows the ambient temperature from -10 °C to 50 °C in 1 °C increments. The temperature displayed may vary from the ambient temperature. Pushing the

"SELECT" button for at least two seconds switches the ambient temperature display to the clock display.

TIP

- If the ambient temperature falls below -10 °C, a lower temperature than -10 °C will not be displayed.
- If the ambient temperature climbs above 50 °C, a higher temperature than 50 °C will not be displayed.
- The accuracy of the temperature reading may be affected when riding slowly (approximately under 20 km/h (12.5 mi/h)) or when stopped at traffic signals, railroad crossings, etc.



EAS20180

IMPORTANT INFORMATION

EAS20190

PREPARATION FOR REMOVAL AND DISASSEMBLY

1. Before removal and disassembly, remove all dirt, mud, dust and foreign material.



2. Use only the proper tools and cleaning equipment.

Refer to "SPECIAL TOOLS" on page 1-11.

3. When disassembling, always keep mated parts together. This includes gears, cylinders, pistons and other parts that have been "mated" through normal wear. Mated parts must always be reused or replaced as an assembly.



4. During disassembly, clean all of the parts and place them in trays in the order of disassembly. This will speed up assembly and allow for the correct installation of all parts.
5. Keep all parts away from any source of fire.

EAS20200

REPLACEMENT PARTS

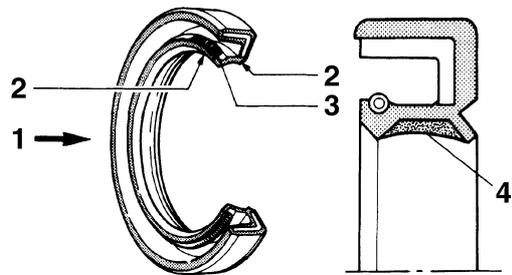
Use only genuine Yamaha parts for all replacements. Use oil and grease recommended by Yamaha for all lubrication jobs. Other brands may be similar in function and appearance, but inferior in quality.



EAS20210

GASKETS, OIL SEALS AND O-RINGS

1. When overhauling the engine, replace all gaskets, seals and O-rings. All gasket surfaces, oil seal lips and O-rings must be cleaned.
2. During reassembly, properly oil all mating parts and bearings and lubricate the oil seal lips with grease.

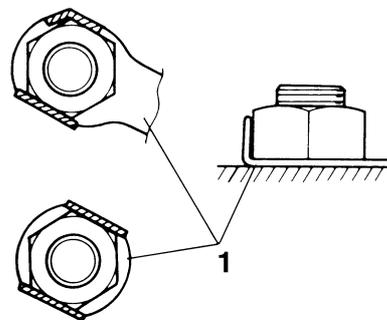


1. Oil
2. Lip
3. Spring
4. Grease

EAS20220

LOCK WASHERS/PLATES AND COTTER PINS

After removal, replace all lock washers/plates "1" and cotter pins. After the bolt or nut has been tightened to specification, bend the lock tabs along a flat of the bolt or nut.



EAS20230

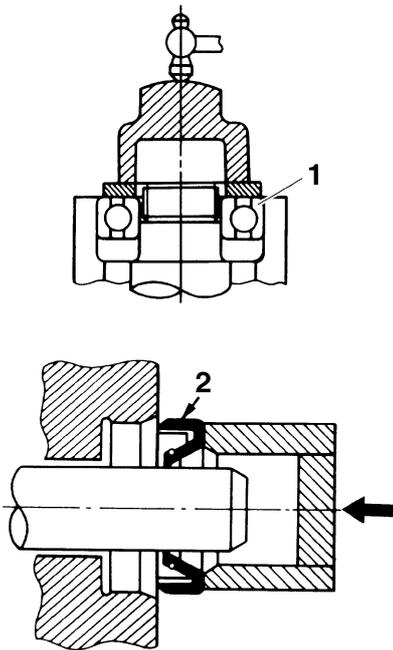
BEARINGS AND OIL SEALS

Install bearings "1" and oil seals "2" so that the manufacturer's marks or numbers are visible. When installing oil seals, lubricate the oil seal lips with a light coat of lithium-soap-based grease. Oil bearings liberally when installing, if appropriate.

ECA13300

NOTICE

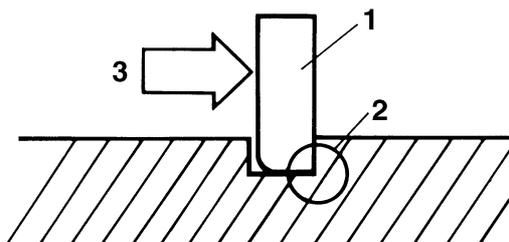
Do not spin the bearing with compressed air because this will damage the bearing surfaces.



EAS20240

CIRCLIPS

Before reassembly, check all circlips carefully and replace damaged or distorted circlips. Always replace piston pin clips after one use. When installing a circlip "1", make sure the sharp-edged corner "2" is positioned opposite the thrust "3" that the circlip receives.



CHECKING THE CONNECTIONS

EAS20250

CHECKING THE CONNECTIONS

Check the leads, couplers, and connectors for stains, rust, moisture, etc.

1. Disconnect:

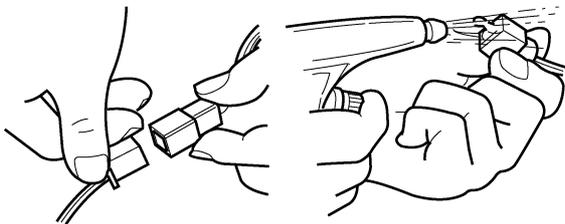
- Lead
- Coupler
- Connector

2. Check:

- Lead
- Coupler
- Connector

Moisture → Dry with an air blower.

Rust/stains → Connect and disconnect several times.



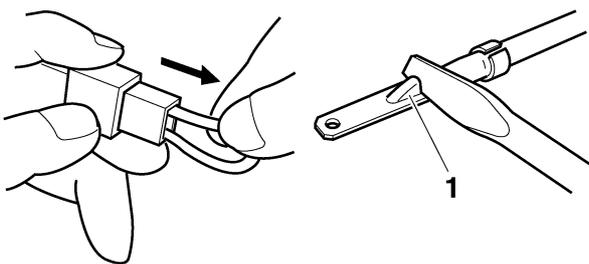
3. Check:

- All connections

Loose connection → Connect properly.

TIP

If the pin "1" on the terminal is flattened, bend it up.



4. Connect:

- Lead
- Coupler
- Connector

TIP

Make sure all connections are tight.

5. Check:

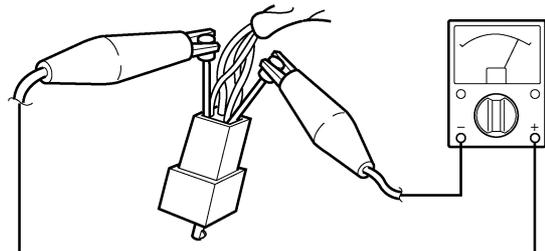
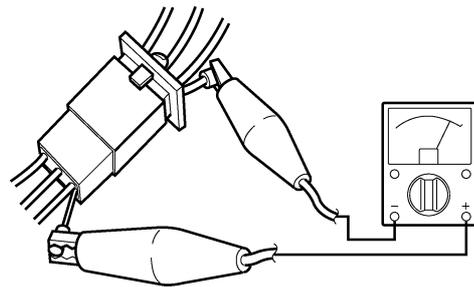
- Continuity
(with the pocket tester)



Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

TIP

- If there is no continuity, clean the terminals.
- When checking the wire harness, perform steps (1) to (3).
- As a quick remedy, use a contact revitalizer available at most part stores.



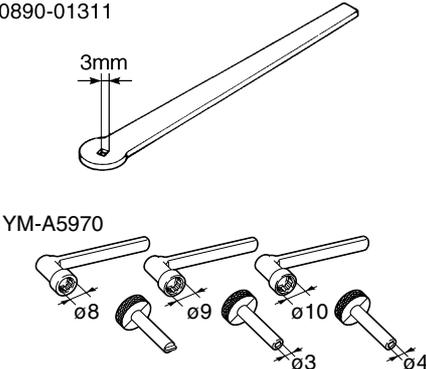
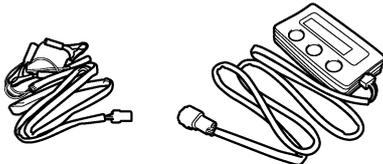
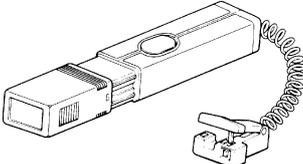
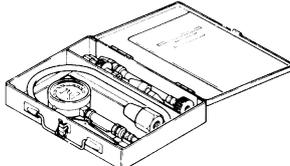
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SPECIAL TOOLS

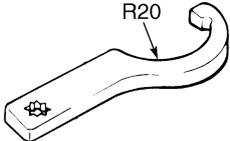
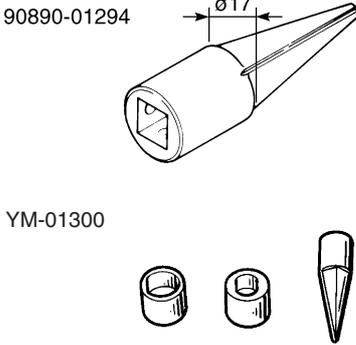
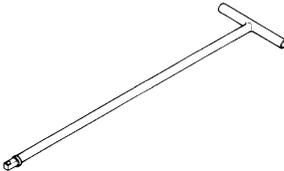
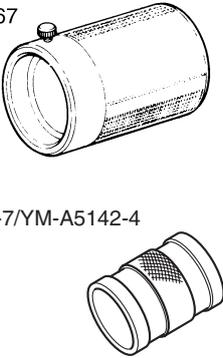
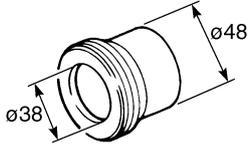
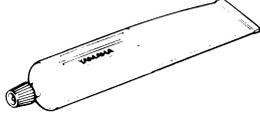
The following special tools are necessary for complete and accurate tune-up and assembly. Use only the appropriate special tools as this will help prevent damage caused by the use of inappropriate tools or improvised techniques. Special tools, part numbers or both may differ depending on the country. When placing an order, refer to the list provided below to avoid any mistakes.

TIP

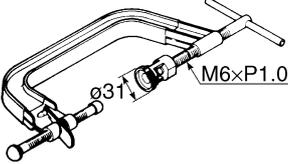
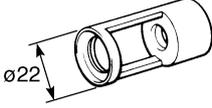
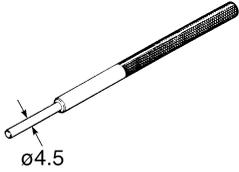
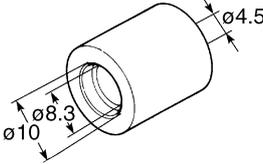
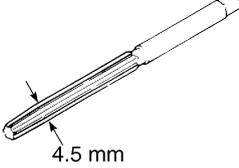
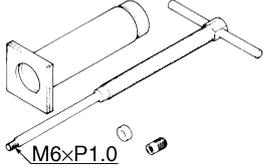
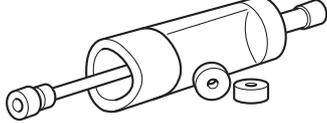
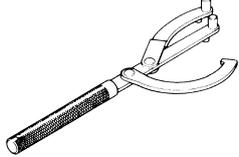
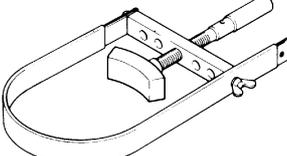
- For U.S.A. and Canada, use part numbers starting with "YM-", "YU-", or "ACC-".
- For others, use part numbers starting with "90890-".

Tool name/Tool No.	Illustration	Reference pages
Pocket tester 90890-03112 Analog pocket tester YU-03112-C		1-10, 8-75, 8-76, 8-77, 8-80, 8-81, 8-82, 8-83, 8-84, 8-85, 8-86, 8-87, 8-89, 8-90, 8-91
Tappet adjusting tool 90890-01311 Six piece tappet set YM-A5970		3-7, 3-22
FI diagnostic tool 90890-03182		3-8, 3-23, 8-34
Timing light 90890-03141 Inductive clamp timing light YU-03141		3-10, 3-25
Compression gauge 90890-03081 Engine compression tester YU-33223		3-11, 3-26

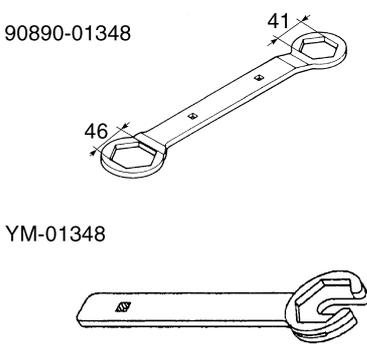
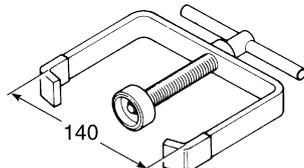
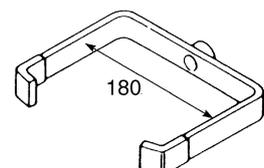
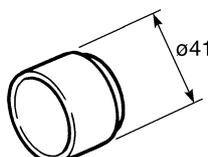
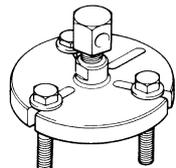
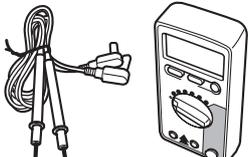
SPECIAL TOOLS

Tool name/Tool No.	Illustration	Reference pages
Steering nut wrench 90890-01403 Exhaust flange nut wrench YU-A9472		3-38, 4-59
Damper rod holder 90890-01294 Damping rod holder set YM-01300		4-52, 4-54
T-handle 90890-01326 T-handle 3/8" drive 60 cm long YM-01326		4-52, 4-54
Fork seal driver weight 90890-01367 Replacement hammer YM-A9409-7		4-54
Fork seal driver attachment (ø38) 90890-01372 Replacement 38 mm YM-A5142-1		4-54
Yamaha bond No. 1215 90890-85505 (Three Bond No.1215®)		5-12, 5-43, 5-59, 5-103, 5-120, 6-15

SPECIAL TOOLS

Tool name/Tool No.	Illustration	Reference pages
Valve spring compressor 90890-04019 YM-04019		5-19, 5-24, 5-78, 5-83
Valve spring compressor attachment 90890-04108 Valve spring compressor adapter 22 mm YM-04108		5-19, 5-24, 5-78, 5-83
Valve guide remover (ø4.5) 90890-04116 Valve guide remover (4.5 mm) YM-04116		5-20
Valve guide installer (ø4.5) 90890-04117 Valve guide installer (4.5 mm) YM-04117		5-20
Valve guide reamer (ø4.5) 90890-04118 Valve guide reamer (4.5 mm) YM-04118		5-20
Piston pin puller set 90890-01304 Piston pin puller YU-01304	<p>90890-01304</p>  <p>YU-01304</p> 	5-26, 5-85
Rotor holding tool 90890-01235 Universal magneto & rotor holder YU-01235		5-33, 5-38, 5-93, 5-98
Sheave holder 90890-01701 Primary clutch holder YS-01880-A		5-33, 5-37, 5-41, 5-42, 5-43, 5-93, 5-97, 5-101, 5-102

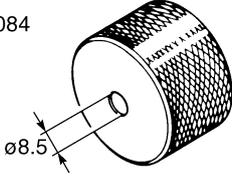
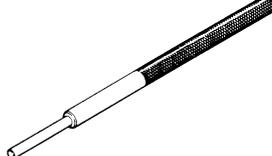
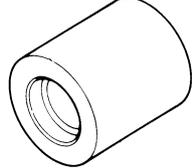
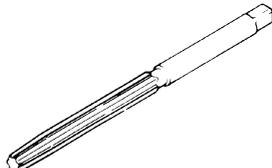
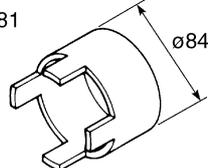
SPECIAL TOOLS

Tool name/Tool No.	Illustration	Reference pages
Locknut wrench 90890-01348 YM-01348		5-33, 5-37, 5-93, 5-97
Clutch spring holder 90890-01337		5-34, 5-37, 5-94, 5-97
Clutch spring holder arm 90890-01464		5-34, 5-37, 5-94, 5-97
Oil seal guide (ø41) 90890-01396		5-36, 5-96
Flywheel puller 90890-01362 Heavy duty puller YU-33270-B		5-41, 5-101
Digital circuit tester 90890-03174 Model 88 Multimeter with tachometer YU-A1927		5-46, 5-106, 8-88

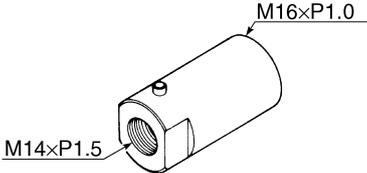
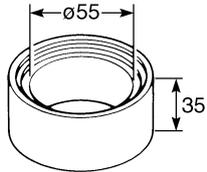
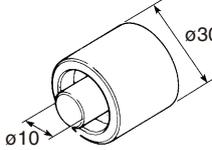
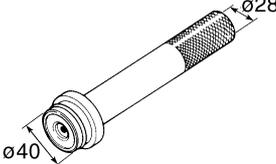
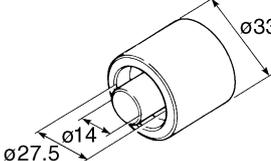
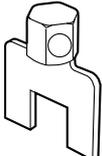
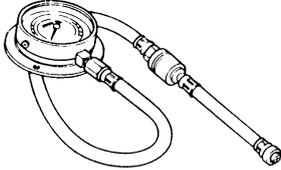
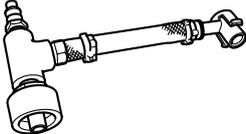
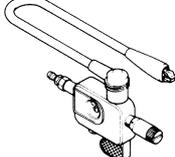
SPECIAL TOOLS

Tool name/Tool No.	Illustration	Reference pages
Crankcase separating tool 90890-01135 Crankcase separator YU-01135-B	<p>90890-01135 M8xP1.25 M8xP1.25</p> <p>YU-01135-B M5xP0.80 M8xP1.25 M6xP1.00</p>	5-56, 5-117
Crankshaft installer pot 90890-01274 Installing pot YU-90058	<p>90890-01274</p> <p>YU-90058/YU-90059</p>	5-58, 5-59, 5-119, 5-120
Crankshaft installer bolt 90890-01275 Bolt YU-90060	<p>M14xP1.5</p>	5-58, 5-59, 5-119, 5-120
Adapter (M14) 90890-01478 Adapter #6 YM-90066	<p>M14xP1.0</p> <p>M14xP1.5</p>	5-58, 5-59, 5-119
Fork seal driver attachment 90890-01186 Replacement 27 mm YM-A9409-1	<p>ø27</p> <p>ø35</p>	5-58
Slide hammer bolt 90890-01083 Slide hammer bolt 6 mm YU-01083-1	<p>M6xP1.0</p>	5-74

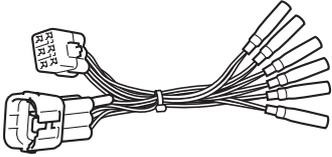
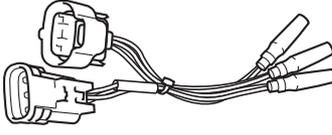
SPECIAL TOOLS

Tool name/Tool No.	Illustration	Reference pages
Weight 90890-01084 YU-01083-3	90890-01084  $\phi 8.5$ YU-01083-3 	5-74
Valve guide remover ($\phi 6$) 90890-04064 Valve guide remover (6.0 mm) YM-04064-A		5-79
Valve guide installer ($\phi 6$) 90890-04065 Valve guide installer (6.0 mm) YM-04065-A		5-79
Valve guide reamer ($\phi 6$) 90890-04066 Valve guide reamer (6.0 mm) YM-04066		5-79
Yamaha grease G 90793-40016		5-91
Spacer (crankshaft installer) 90890-04081 Pot spacer YM-91044	90890-04081  $\phi 84$ YM-91044 	5-119

SPECIAL TOOLS

Tool name/Tool No.	Illustration	Reference pages
Adapter (M16) 90890-01280 Adapter #7 YM-90067		5-120
Spacer 90890-01288		5-120
Mechanical seal installer 90890-04145		6-6
Middle driven shaft bearing driver 90890-04058 Bearing driver 40 mm YM-04058		6-6, 6-15
Mechanical seal installer 90890-04132 Water pump seal installer YM-33221-A		6-15
Fuel sender wrench 90890-11098		7-3, 7-4
Pressure gauge 90890-03153 YU-03153		7-4
Fuel pressure adapter 90890-03181		7-4
Ignition checker 90890-06754 Oppama pet-4000 spark checker YM-34487		8-83

SPECIAL TOOLS

Tool name/Tool No.	Illustration	Reference pages
Test harness-lean angle sensor (6P) 90890-03209		8-84
Test harness 90890-03204		8-89

SPECIFICATIONS

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GENERAL SPECIFICATIONS (YP125R)

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GENERAL SPECIFICATIONS (YP125R)

Model

Model	39D1 (YAMAHA) 39D3 (MBK)
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Dimensions

Overall length	2201 mm (86.7 in)
Overall width	776 mm (30.6 in)
Overall height	1337 mm (52.6 in)
Seat height	792 mm (31.2 in)
Wheelbase	1545 mm (60.8 in)
Ground clearance	134 mm (5.30 in)
Minimum turning radius	1805 mm (71.1 in)

Weight

With oil and fuel	171.6 kg (378 lb)
Maximum load	186 kg (410 lb)

ENGINE SPECIFICATIONS (YP125R)

EAS37P1118

ENGINE SPECIFICATIONS (YP125R)

Engine

Engine type	Liquid cooled 4-stroke, SOHC
Displacement	124 cm ³
Cylinder arrangement	Forward-inclined single cylinder
Bore × stroke	52.0 × 58.6 mm (2.05 × 2.31 in)
Compression ratio	11.20 :1
Standard compression pressure (at sea level)	550 kPa/680 r/min (5.5 kgf/cm ² /680 r/min, 78.2 psi/680 r/min)
Minimum–maximum	480–620 kPa (4.8–6.2 kgf/cm ² , 68.3–88.2 psi)
Starting system	Electric starter

Fuel

Recommended fuel	Regular unleaded gasoline only
Fuel tank capacity	11.8 L (3.12 US gal, 2.60 Imp.gal)
Fuel reserve amount	1.7 L (0.45 US gal, 0.37 Imp.gal)

Engine oil

Lubrication system	Wet sump
Type	SAE 10W-30, SAE 10W-40, SAE 15W-40, SAE 20W-40 or SAE 20W-50
Recommended engine oil grade	API service SG type or higher, JASO standard MA
Engine oil quantity	
Total amount	1.60 L (1.69 US qt, 1.41 Imp.qt)
Without oil filter element replacement	1.40 L (1.48 US qt, 1.23 Imp.qt)
With oil filter element replacement	1.50 L (1.59 US qt, 1.32 Imp.qt)

Final transmission oil

Type	SAE 10W-30 type SE motor oil
Quantity	0.21 L (0.22 US qt, 0.18 Imp.qt)
Quantity (disassembled)	0.23 L (0.24 US qt, 0.20 Imp.qt)

Oil filter

Oil filter type	Paper
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Oil pump

Oil pump type	Trochoid
Inner-rotor-to-outer-rotor-tip clearance	Less than 0.15 mm (0.0059 in)
Limit	0.23 mm (0.0091 in)
Outer-rotor-to-oil-pump-housing clearance	0.013–0.018 mm (0.0005–0.0007 in)
Limit	0.25 mm (0.0098 in)
Oil-pump-housing-to-inner-and-outer-rotor clearance	0.06–0.11 mm (0.0024–0.0043 in)
Limit	0.18 mm (0.0071 in)

Cooling system

Radiator capacity (including all routes)	1.00 L (1.06 US qt, 0.88 Imp.qt)
Coolant reservoir capacity (up to the maximum level mark)	0.25 L (0.26 US qt, 0.22 Imp.qt)

ENGINE SPECIFICATIONS (YP125R)

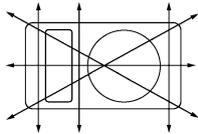
Radiator cap opening pressure	100.0–120.0 kPa (1.00–1.20 kgf/cm ² , 14.5–17.4 psi)
Thermostat	
Valve opening temperature	70.5–73.5 °C (158.9–164.3 °F)
Valve full open temperature	85.0 °C (185.0 °F)
Valve lift (full open)	3.0 mm (0.12 in)
Radiator core	
Width	244.0 mm (9.61 in)
Height	128.9 mm (5.07 in)
Depth	22.0 mm (0.87 in)
Water pump	
Water pump type	Single suction centrifugal pump
Reduction ratio	16/38 (0.42)
Impeller shaft tilt limit	0.15 mm (0.0059 in)

Spark plug (s)

Manufacturer/model	NGK/CPR9EA-9
Spark plug gap	0.8–0.9 mm (0.031–0.035 in)

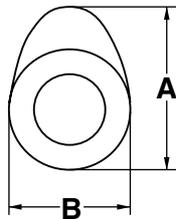
Cylinder head

Volume	9.90–10.50 cm ³ (0.60–0.64 cu.in)
Warping limit	0.05 mm (0.0020 in)



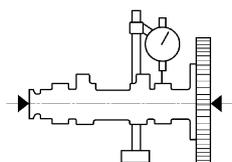
Camshaft

Drive system	Chain drive (left)
Camshaft lobe dimensions	
Intake A	30.225–30.325 mm (1.1900–1.1939 in)
Limit	30.125 mm (1.1860 in)
Intake B	25.064–25.164 mm (0.9868–0.9907 in)
Limit	24.964 mm (0.9828 in)
Exhaust A	30.261–30.361 mm (1.1914–1.1953 in)
Limit	30.161 mm (1.1874 in)
Exhaust B	25.121–25.221 mm (0.9890–0.9930 in)
Limit	25.021 mm (0.9851 in)



ENGINE SPECIFICATIONS (YP125R)

Camshaft runout limit 0.030 mm (0.0012 in)



Timing chain

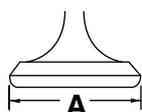
Tensioning system Automatic

Rocker arm/rocker arm shaft

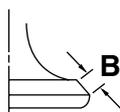
Rocker arm inside diameter 9.985–10.000 mm (0.3931–0.3937 in)
 Limit 10.015 mm (0.3943 in)
 Rocker arm shaft outside diameter 9.966–9.976 mm (0.3924–0.3928 in)
 Limit 9.940 mm (0.3913 in)
 Rocker-arm-to-rocker-arm-shaft clearance 0.009–0.034 mm (0.0004–0.0013 in)
 Limit 0.075 mm (0.0030 in)

Valve, valve seat, valve guide

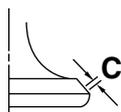
Valve clearance (cold)
 Intake 0.10–0.14 mm (0.0039–0.0055 in)
 Exhaust 0.22–0.26 mm (0.0087–0.0102 in)
 Valve dimensions
 Valve head diameter A (intake) 19.40–19.60 mm (0.7638–0.7717 in)
 Valve head diameter A (exhaust) 16.90–17.10 mm (0.6654–0.6732 in)



Valve face width B (intake) 1.680–2.120 mm (0.0661–0.0835 in)
 Valve face width B (exhaust) 1.480–2.190 mm (0.0583–0.0862 in)



Valve seat width C (intake) 0.90–1.10 mm (0.0354–0.0433 in)
 Limit 1.6 mm (0.06 in)
 Valve seat width C (exhaust) 0.90–1.10 mm (0.0354–0.0433 in)
 Limit 1.6 mm (0.06 in)

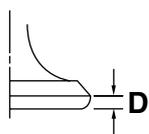


Valve margin thickness D (intake) 0.85–1.15 mm (0.0335–0.0453 in)
 Limit 0.5 mm (0.02 in)
 Valve margin thickness D (exhaust) 0.85–1.15 mm (0.0335–0.0453 in)

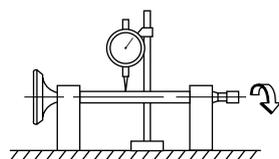
ENGINE SPECIFICATIONS (YP125R)

Limit

0.5 mm (0.02 in)



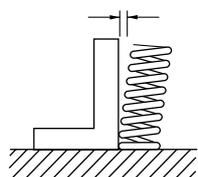
Valve stem diameter (intake)	4.475–4.490 mm (0.1762–0.1768 in)
Limit	4.445 mm (0.1750 in)
Valve stem diameter (exhaust)	4.460–4.475 mm (0.1756–0.1762 in)
Limit	4.430 mm (0.1744 in)
Valve guide inside diameter (intake)	4.500–4.512 mm (0.1772–0.1776 in)
Limit	4.550 mm (0.1791 in)
Valve guide inside diameter (exhaust)	4.500–4.512 mm (0.1772–0.1776 in)
Limit	4.550 mm (0.1791 in)
Valve-stem-to-valve-guide clearance (intake)	0.010–0.037 mm (0.0004–0.0015 in)
Limit	0.080 mm (0.0031 in)
Valve-stem-to-valve-guide clearance (exhaust)	0.025–0.052 mm (0.0010–0.0020 in)
Limit	0.100 mm (0.0039 in)
Valve stem runout	0.010 mm (0.0004 in)



Cylinder head valve seat width (intake)	0.90–1.10 mm (0.0354–0.0433 in)
Limit	1.6 mm (0.06 in)
Cylinder head valve seat width (exhaust)	0.90–1.10 mm (0.0354–0.0433 in)
Limit	1.6 mm (0.06 in)

Valve spring

Free length (intake)	41.71 mm (1.64 in)
Limit	39.62 mm (1.56 in)
Free length (exhaust)	41.71 mm (1.64 in)
Limit	39.62 mm (1.56 in)
Installed length (intake)	35.30 mm (1.39 in)
Installed length (exhaust)	35.30 mm (1.39 in)
Spring rate K1 (intake)	23.54 N/mm (2.40 kgf/mm, 134.41 lb/in)
Spring rate K2 (intake)	36.58 N/mm (3.73 kgf/mm, 208.87 lb/in)
Spring rate K1 (exhaust)	23.54 N/mm (2.40 kgf/mm, 134.41 lb/in)
Spring rate K2 (exhaust)	36.58 N/mm (3.73 kgf/mm, 208.87 lb/in)
Installed compression spring force (intake)	140–162 N (14.28–16.52 kgf, 31.47–36.42 lbf)
Installed compression spring force (exhaust)	140–162 N (14.28–16.52 kgf, 31.47–36.42 lbf)
Spring tilt (intake)	2.5°/1.8 mm
Spring tilt (exhaust)	2.5°/1.8 mm



ENGINE SPECIFICATIONS (YP125R)

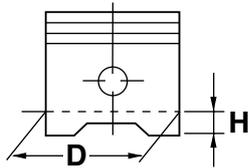
Winding direction (intake)	Clockwise
Winding direction (exhaust)	Clockwise

Cylinder

Bore	52.000–52.010 mm (2.0472–2.0476 in)
Wear limit	52.110 mm (2.0516 in)
Taper limit	0.050 mm (0.0020 in)
Out of round limit	0.005 mm (0.0002 in)
Warp limit	0.05 mm (0.0020 in)

Piston

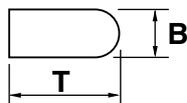
Piston-to-cylinder clearance	0.015–0.048 mm (0.0006–0.0019 in)
Limit	0.15 mm (0.0059 in)
Diameter D	51.962–51.985 mm (2.0457–2.0466 in)
Height H	5.0 mm (0.20 in)



Offset	0.50 mm (0.0197 in)
Offset direction	Intake side
Piston pin bore inside diameter	14.002–14.013 mm (0.5513–0.5517 in)
Limit	14.043 mm (0.5529 in)
Piston pin outside diameter	13.995–14.000 mm (0.5510–0.5512 in)
Limit	13.975 mm (0.5502 in)
Piston-pin-to-piston-pin-bore clearance	0.002–0.018 mm (0.0001–0.0007 in)
Limit	0.068 mm (0.0027 in)

Piston ring

Top ring	
Ring type	Barrel
Dimensions (B × T)	0.80 × 1.90 mm (0.03 × 0.07 in)



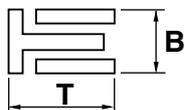
End gap (installed)	0.10–0.25 mm (0.0039–0.0098 in)
Limit	0.50 mm (0.0197 in)
Ring side clearance	0.040–0.080 mm (0.0016–0.0031 in)
Limit	0.120 mm (0.0047 in)
2nd ring	
Ring type	Taper
Dimensions (B × T)	0.80 × 2.10 mm (0.03 × 0.08 in)



End gap (installed)	0.10–0.25 mm (0.0039–0.0098 in)
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ENGINE SPECIFICATIONS (YP125R)

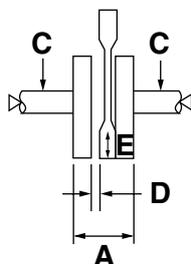
Limit	0.60 mm (0.0236 in)
Ring side clearance	0.030–0.070 mm (0.0012–0.0028 in)
Limit	0.120 mm (0.0047 in)
Oil ring	
Dimensions (B × T)	1.50 × 1.95 mm (0.06 × 0.08 in)



End gap (installed)	0.20–0.70 mm (0.0079–0.0276 in)
Ring side clearance	0.060–0.150 mm (0.0024–0.0059 in)

Crankshaft

Width A	45.95–46.00 mm (1.809–1.811 in)
Runout limit C	0.030 mm (0.0012 in)
Big end side clearance D	0.150–0.450 mm (0.0059–0.0177 in)
Big end radial clearance E	0.004–0.014 mm (0.0002–0.0006 in)



Clutch

Clutch type	Dry, centrifugal automatic
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Automatic centrifugal clutch

Clutch shoe thickness	2.0 mm (0.08 in)
Limit	1.0 mm (0.04 in)
Clutch shoe spring free length	33.0 mm (1.30 in)
Clutch housing inside diameter	135.0 mm (5.31 in)
Limit	135.5 mm (5.33 in)
Compression spring free length	112.0 mm (4.41 in)
Limit	106.4 mm (4.19 in)
Weight outside diameter	20.0 mm (0.79 in)
Limit	19.5 mm (0.77 in)
Clutch-in revolution	3500–4100 r/min
Clutch-stall revolution	5300–6300 r/min

V-belt

V-belt width	22.0 mm (0.87 in)
Limit	19.8 mm (0.78 in)

Transmission

Transmission type	V-belt automatic
Primary reduction system	Helical gear
Primary reduction ratio	41/14 (2.929)
Secondary reduction system	Helical gear

ENGINE SPECIFICATIONS (YP125R)

Secondary reduction ratio	44/13 (3.385)
Operation	Centrifugal automatic type
Gear ratio	2.645–0.824 :1

Decompression device	
Device type	Auto decomp

Air filter	
Air filter element	Oil-coated paper element

Fuel pump	
Pump type	Electrical
Output pressure	250.0 kPa (2.50 kgf/cm ² , 36.3 psi)

Fuel injector	
Model/quantity	1P51/1

Throttle body	
Type/quantity	EFI 1B91/1
ID mark	1B91 00

Throttle position sensor	
Input voltage (at idle)	5 V
Output voltage (at idle)	0.40–0.90 V

Fuel injection sensor	
Crankshaft position sensor resistance	248–372 Ω at 20 °C (68 °F)
Intake air pressure sensor output voltage	3.57–3.71 V
Intake air temperature sensor resistance	2.21–2.69 k Ω at 20 °C (68 °F)
Coolant temperature sensor resistance	2.32–2.59 k Ω at 20 °C (68 °F) 310–326 Ω at 80 °C (176 °F)

Idling condition	
Engine idling speed	1600–1800 r/min
CO% (muffler tailpipe)	0.5%
Intake vacuum	67.0–73.0 kPa (503–548 mmHg, 19.8–21.6 inHg)
Water temperature	80.0–90.0 °C (176.00–194.00 °F)
Oil temperature	75.0–85.0 °C (167.00–185.00 °F)
Throttle cable free play	3.0–5.0 mm (0.12–0.20 in)

CHASSIS SPECIFICATIONS (YP125R)

EAS37P1119

CHASSIS SPECIFICATIONS (YP125R)

Chassis

Frame type	Steel tube underbone
Caster angle	28.00°
Trail	100.0 mm (3.94 in)

Front wheel

Wheel type	Cast wheel
Rim size	15 × MT3.5
Rim material	Aluminum
Wheel travel	110.0 mm (4.33 in)
Radial wheel runout limit	1.0 mm (0.04 in)
Lateral wheel runout limit	0.5 mm (0.02 in)
Wheel axle bending limit	0.25 mm (0.01 in)

Rear wheel

Wheel type	Cast wheel
Rim size	14 × MT3.75
Rim material	Aluminum
Wheel travel	95.0 mm (3.74 in)
Radial wheel runout limit	1.0 mm (0.04 in)
Lateral wheel runout limit	0.5 mm (0.02 in)
Wheel axle bending limit	0.25 mm (0.01 in)

Front tire

Type	Tubeless
Size	120/70–15 M/C 56P (PIRELLI) 120/70–15 M/C 56S (MICHELIN)
Manufacturer/model	MICHELIN/GOLD STANDARD PIRELLI/GTS23
Wear limit (front)	1.6 mm (0.06 in)

Rear tire

Type	Tubeless
Size	140/70–14 M/C 68P (PIRELLI) 140/70–14 M/C 68S (MICHELIN)
Manufacturer/model	MICHELIN/GOLD STANDARD PIRELLI/GTS24
Wear limit (rear)	1.6 mm (0.06 in)

Tire air pressure (measured on cold tires)

Loading condition	0–90 kg (0–198 lb)
Front	190 kPa (1.90 kgf/cm ² , 28 psi)
Rear	220 kPa (2.20 kgf/cm ² , 32 psi)
Loading condition	90 kg–maximum load
Front	210 kPa (2.10 kgf/cm ² , 30 psi)
Rear	250 kPa (2.50 kgf/cm ² , 36 psi)

Front brake

Type	Single disc brake
Operation	Right hand operation

CHASSIS SPECIFICATIONS (YP125R)

Front disc brake

Disc outside diameter × thickness	267.0 × 5.0 mm (10.51 × 0.20 in)
Brake disc thickness limit	4.5 mm (0.18 in)
Brake disc deflection limit	0.15 mm (0.0059 in)
Brake pad lining thickness (inner)	5.0 mm (0.20 in)
Limit	1.5 mm (0.06 in)
Brake pad lining thickness (outer)	5.0 mm (0.20 in)
Limit	1.5 mm (0.06 in)
Master cylinder inside diameter	12.70 mm (0.50 in)
Caliper cylinder inside diameter	27.00 mm × 2 (1.06 in × 2)
Recommended fluid	DOT 4

Rear brake

Type	Single disc brake
Operation	Left hand operation
Rear disc brake	
Disc outside diameter × thickness	240.0 × 5.0 mm (9.45 × 0.20 in)
Brake disc thickness limit	4.5 mm (0.18 in)
Brake disc deflection limit	0.25 mm (0.0098 in)
Brake pad lining thickness (inner)	7.3 mm (0.29 in)
Limit	0.8 mm (0.03 in)
Brake pad lining thickness (outer)	7.3 mm (0.29 in)
Limit	0.8 mm (0.03 in)
Master cylinder inside diameter	11.0 mm (0.43 in)
Caliper cylinder inside diameter	32.00 mm × 2 (1.26 in × 2)
Recommended fluid	DOT 4

Steering

Steering bearing type	Ball and angular bearings
Center to lock angle (left)	57.0°
Center to lock angle (right)	57.0°
No./size of steel balls	
(Upper)	14 pcs
(Lower)	18 pcs

Front suspension

Type	Telescopic fork
Spring/shock absorber type	Coil spring/oil damper
Front fork travel	110.0 mm (4.33 in)
Fork spring free length	340.0 mm (13.39 in)
Limit	333.0 mm (13.11 in)
Installed length	285.1 mm (11.22 in)
Spring rate K1	12.00 N/mm (1.22 kgf/mm, 68.52 lb/in)
Spring rate K2	16.60 N/mm (1.69 kgf/mm, 94.79 lb/in)
Spring stroke K1	0–77.0 mm (0–3.03 in)
Spring stroke K2	77.0–110.0 mm (3.03–4.33 in)
Inner tube outer diameter	35.0 mm (1.38 in)
Inner tube bending limit	0.2 mm (0.01 in)
Optional spring available	No
Recommended oil	Fork oil 10W or equivalent
Quantity	128.0 cm ³ (4.33 US oz, 4.51 Imp.oz)
Level	109.0 mm (4.29 in)

CHASSIS SPECIFICATIONS (YP125R)

Rear suspension

Type	Unit swing
Spring/shock absorber type	Coil spring/oil damper
Rear shock absorber assembly travel	95.0 mm (3.74 in)
Spring free length	274.0 mm (10.79 in)
Installed length	241.3 mm (9.50 in)
Spring rate K1	8.00 N/mm (0.82 kgf/mm, 45.68 lb/in)
Spring rate K2	17.30 N/mm (1.76 kgf/mm, 98.78 lb/in)
Spring stroke K1	0–47.5 mm (0–1.87 in)
Spring stroke K2	47.5–95.0 mm (1.87–3.74 in)
Optional spring available	No
Spring preload adjusting positions	
Minimum	1
Standard	2
Maximum	4

Swingarm

Swingarm end free play limit (radial)	1.0 mm (0.04 in)
Swingarm end free play limit (axial)	1.0 mm (0.04 in)

ELECTRICAL SPECIFICATIONS (YP125R)

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ELECTRICAL SPECIFICATIONS (YP125R)

Voltage

System voltage 12 V

Ignition system

Ignition system TCI (digital)
Advancer type Digital
Ignition timing (B.T.D.C.) 8.0°/1700 r/min

Engine control unit

Model/manufacture 39D0/YAMAHA

Ignition coil

Minimum ignition spark gap 6.0 mm (0.24 in)
Primary coil resistance 2.16–2.64 Ω at 20 °C (68 °F)
Secondary coil resistance 8.64–12.96 k Ω at 20 °C (68 °F)

Spark plug cap

Material Resin
Resistance 10.0 k Ω

AC magneto

Standard output 14.0 V, 245 W 5000 r/min
Stator coil resistance 0.28–0.42 Ω at 20 °C (68 °F)

Rectifier/regulator

Regulator type Semi conductor-short circuit
Regulated voltage (DC) 14.1–14.9 V
Rectifier capacity 25.0 A
Rectifier capacity (DC) 18.0 A
Withstand voltage 200.0 V

Battery

Model GTX9-BS
Voltage, capacity 12 V, 8.0 Ah
Manufacturer GS

Headlight

Bulb type Halogen bulb

Bulb voltage, wattage \times quantity

Low beam headlight 12 V, 55.0 W \times 1
High beam headlight 12 V, 55.0 W \times 1
Auxiliary light 12 V, 5.0 W \times 2
Tail/brake light 12 V, 5.0 W/21.0 W \times 2
Front turn signal light 12 V, 10.0 W \times 2
Rear turn signal light 12 V, 10.0 W \times 2
License plate light 12 V, 5.0 W \times 1
Meter lighting 12 V, 2.0 W \times 3

ELECTRICAL SPECIFICATIONS (YP125R)

Indicator lights

Turn signal indicator light	12 V, 1.4 W × 2
High beam indicator light	12 V, 1.4 W × 1
Engine trouble warning light	12 V, 1.4 W × 1
Immobilizer system indicator light	LED

Electric starting system

System type	Constant mesh
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Starter motor

Power output	0.25 kW
Armature coil resistance	0.0378–0.0462 Ω
Brush overall length	7.0 mm (0.28 in)
Limit	3.50 mm (0.14 in)
Brush spring force	3.92–5.88 N (400–600 gf, 14.11–21.17 oz)
Commutator diameter	17.6 mm (0.69 in)
Limit	16.6 mm (0.65 in)
Mica undercut (depth)	1.35 mm (0.05 in)

Starter relay

Amperage	180.0 A
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Horn

Horn type	Plane
Quantity	1 pc
Maximum amperage	3.0 A
Coil resistance	1.4 Ω at 20 °C (68 °F)
Performance	105–118 dB/2m

Turn signal relay

Relay type	Full transistor
Built-in, self-canceling device	No
Turn signal flashing frequency	75–95 cycles/min
Wattage	21 W × 2.0 + 3.4 W

Fuel sender unit

Sender unit resistance (full)	20.0 Ω
Sender unit resistance (empty)	140.0 Ω

Starting circuit cut-off relay

Diode	Yes
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Fuses

Main fuse	30.0 A
Headlight fuse	15.0 A
Signaling system fuse	10.0 A
Ignition fuse	10.0 A
Radiator fan fuse	7.5 A
Turn signal/hazard fuse	10.0 A
ECU fuse	5.0 A
Backup fuse	5.0 A
Spare fuse	30.0 A

ELECTRICAL SPECIFICATIONS (YP125R)

Spare fuse	15.0 A
Spare fuse	10.0 A
Spare fuse	5.0 A
Spare fuse	7.5 A

TIGHTENING TORQUES (YP125R)

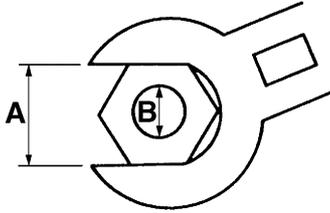
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TIGHTENING TORQUES (YP125R)

EAS37P1123

GENERAL TIGHTENING TORQUE SPECIFICATIONS

This chart specifies tightening torques for standard fasteners with a standard ISO thread pitch. Tightening torque specifications for special components or assemblies are provided for each chapter of this manual. To avoid warpage, tighten multi-fastener assemblies in a crisscross pattern and progressive stages until the specified tightening torque is reached. Unless otherwise specified, tightening torque specifications require clean, dry threads. Components should be at room temperature.



- A. Distance between flats
- B. Outside thread diameter

A (nut)	B (bolt)	General tightening torques		
		Nm	m·kgf	ft·lbf
10 mm	6 mm	6	0.6	4.3
12 mm	8 mm	15	1.5	11
14 mm	10 mm	30	3.0	22
17 mm	12 mm	55	5.5	40
19 mm	14 mm	85	8.5	61
22 mm	16 mm	130	13.0	94

TIGHTENING TORQUES (YP125R)

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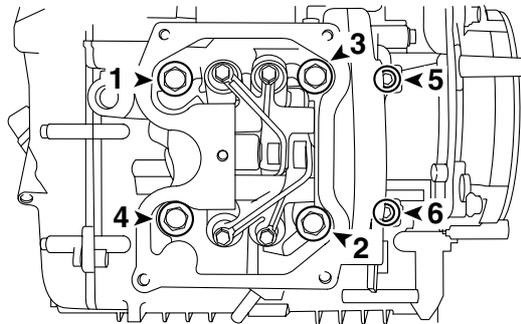
ENGINE TIGHTENING TORQUES

Item	Thread size	Q'ty	Tightening torque	Remarks
Exhaust pipe nut	M8	2	20 Nm (2.0 m·kgf, 14 ft·lbf)	
Muffler bolt	M10	3	53 Nm (5.3 m·kgf, 38 ft·lbf)	
Muffler joint bolt	M8	1	14 Nm (1.4 m·kgf, 10 ft·lbf)	
O ₂ sensor	M18	1	45 Nm (4.5 m·kgf, 32 ft·lbf)	
Oil check bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Cylinder head cover bolt	M6	5	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Cylinder head nut	M8	4	22 Nm (2.2 m·kgf, 16 ft·lbf)	
Cylinder head bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Cylinder head stud bolt	M8	4	13 Nm (1.3 m·kgf, 9.4 ft·lbf)	
Exhaust pipe stud bolt	M8	2	15 Nm (1.5 m·kgf, 11 ft·lbf)	
Timing chain tensioner bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	Yamaha bond No. 1215®
Spark plug	M10	1	13 Nm (1.3 m·kgf, 9.4 ft·lbf)	
Coolant temperature sensor	M12	1	18 Nm (1.8 m·kgf, 13 ft·lbf)	
Camshaft sprocket bolt	M8	1	30 Nm (3.0 m·kgf, 22 ft·lbf)	
Camshaft retainer bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Valve clearance adjusting screw locknut	M5	4	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Coolant drain bolt (cylinder)	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
V-belt case cover bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
V-belt case bolt	M6	8	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
V-belt case air duct bolt	M6	3	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Primary sheave nut	M12	1	55 Nm (5.5 m·kgf, 40 ft·lbf)	
Secondary sheave nut	M14	1	60 Nm (6.0 m·kgf, 43 ft·lbf)	
Clutch carrier nut	M36	1	90 Nm (9.0 m·kgf, 65 ft·lbf)	
Timing mark accessing plug	M16	1	8 Nm (0.8 m·kgf, 5.8 ft·lbf)	
Generator cover bolt	M6	9	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Stator coil bolt	M6	3	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Crankshaft position sensor bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Generator rotor nut	M14	1	80 Nm (8.0 m·kgf, 58 ft·lbf)	
Starter clutch assembly bolt	M6	3	13 Nm (1.3 m·kgf, 9.4 ft·lbf)	
Starter motor bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Oil pump plate bolt	M6	2	12 Nm (1.2 m·kgf, 8.7 ft·lbf)	
Oil pump assembly screw	M5	2	4 Nm (0.4 m·kgf, 2.9 ft·lbf)	
Transmission case cover bolt	M8	6	16 Nm (1.6 m·kgf, 11 ft·lbf)	
Oil filter element cover bolt	M6	3	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Oil strainer cover	M35	1	32 Nm (3.2 m·kgf, 23 ft·lbf)	

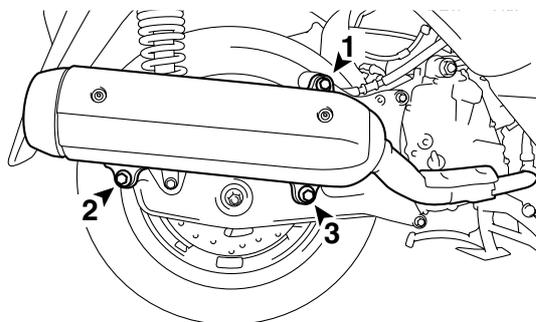
TIGHTENING TORQUES (YP125R)

Item	Thread size	Q'ty	Tightening torque	Remarks
Engine oil drain bolt	M12	1	20 Nm (2.0 m·kgf, 14 ft·lbf)	
Final transmission oil drain bolt	M8	1	20 Nm (2.0 m·kgf, 14 ft·lbf)	
Crankcase bolt	M6	10	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Timing chain guide bolt (intake side)	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Air bleed bolt (thermostat cover)	M6	1	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Thermostat cover bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Water pump housing bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Water pump housing cover bolt	M6	5	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Water pump housing plate 1 bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	⚠
Fuel injector assembly bolt	M6	1	12 Nm (1.2 m·kgf, 8.7 ft·lbf)	
Fuel injector assembly holder bolt	M6	1	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Intake air pressure sensor bolt	M6	2	8 Nm (0.8 m·kgf, 5.8 ft·lbf)	
Intake air pressure sensor bracket bolt	M6	1	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Intake manifold bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Throttle body clamp screw	M4	1	3 Nm (0.3 m·kgf, 2.2 ft·lbf)	
Air filter case mounting bolt	M6	2	9 Nm (0.9 m·kgf, 6.5 ft·lbf)	⚠

Cylinder head tightening sequence:



Muffler tightening sequence:



TIGHTENING TORQUES (YP125R)

EAS37P1124

CHASSIS TIGHTENING TORQUES

Item	Thread size	Q'ty	Tightening torque	Remarks
Engine bracket nut	M12	2	59 Nm (5.9 m·kgf, 43 ft·lbf)	
Engine bracket rod nut	M10	2	64 Nm (6.4 m·kgf, 46 ft·lbf)	
Engine mounting nut	M10	1	43 Nm (4.3 m·kgf, 31 ft·lbf)	
Radiator bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Filler neck bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Coolant reservoir bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Radiator bracket nut	M6	4	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Fuel tank bolt	M6	3	14 Nm (1.4 m·kgf, 10 ft·lbf)	
Fuel tank bracket bolt	M6	4	13 Nm (1.3 m·kgf, 9.4 ft·lbf)	
Seat nut	M6	4	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Seat hinge and storage box nut	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Seat hinge spring guide bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Storage box bolt	M6	2	11 Nm (1.1 m·kgf, 8.0 ft·lbf)	
Grab bar bolt	M8	4	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Center panel bolt	M6	6	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Rear panel bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Mudguard bolt	M6	3	11 Nm (1.1 m·kgf, 8.0 ft·lbf)	
Rear fender bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Front cowling assembly bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Battery box bolt	M6	1	11 Nm (1.1 m·kgf, 8.0 ft·lbf)	
Battery holder bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Battery bracket bolt	M8	4	30 Nm (3.0 m·kgf, 22 ft·lbf)	
Windshield bracket bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Windshield bracket bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Bottom cover bolt	M6	2	11 Nm (1.1 m·kgf, 8.0 ft·lbf)	
Storage compartment bolt	M6	1	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Footrest board bolt	M6	6	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Sidestand nut	M10	1	56 Nm (5.6 m·kgf, 40 ft·lbf)	
Sidestand switch nut	M5	2	8 Nm (0.8 m·kgf, 5.8 ft·lbf)	
Front fender bolt	M6	4	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Front wheel axle	M14	1	70 Nm (7.0 m·kgf, 50 ft·lbf)	
Front wheel axle pinch bolt	M8	1	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Front brake disc bolt	M6	5	12 Nm (1.2 m·kgf, 8.7 ft·lbf)	
Rear wheel axle nut	M14	1	135 Nm (13.5 m·kgf, 98 ft·lbf)	
Rear brake disc bolt	M8	4	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Front brake caliper bolt	M8	2	40 Nm (4.0 m·kgf, 29 ft·lbf)	
Front brake hose union bolt	M10	2	23 Nm (2.3 m·kgf, 17 ft·lbf)	

TIGHTENING TORQUES (YP125R)

Item	Thread size	Q'ty	Tightening torque	Remarks
Front brake hose holder bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Front brake caliper bleed screw	M7	1	6 Nm (0.6 m·kgf, 4.3 ft·lbf)	
Front brake pad pin cap	M8	1	3 Nm (0.3 m·kgf, 2.2 ft·lbf)	
Front brake pad pin	M8	1	18 Nm (1.8 m·kgf, 13 ft·lbf)	
Front brake caliper retaining pin	M8	1	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Front brake caliper retaining pin	M8	1	13 Nm (1.3 m·kgf, 9.4 ft·lbf)	
Rear brake caliper bolt	M8	2	40 Nm (4.0 m·kgf, 29 ft·lbf)	
Rear brake hose union bolt (brake caliper side)	M10	2	28 Nm (2.8 m·kgf, 20 ft·lbf)	
Rear brake hose union bolt (brake master cylinder side)	M10	2	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Rear brake hose holder bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Rear brake caliper bleed screw	M10	1	14 Nm (1.4 m·kgf, 10 ft·lbf)	
Upper handlebar holder bolt	M8	4	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Front and rear brake master cylinder holder bolt	M6	4	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Front and rear brake lever nut	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Grip end	M16	2	26 Nm (2.6 m·kgf, 19 ft·lbf)	
Steering stem nut	M20	1	120 Nm (12.0 m·kgf, 85 ft·lbf)	
Upper ring nut	M25	1	75 Nm (7.5 m·kgf, 54 ft·lbf)	See TIP.
Lower ring nut (initial tightening torque)	M25	1	38 Nm (3.8 m·kgf, 27 ft·lbf)	See TIP.
Lower ring nut (final tightening torque)	M25	1	22 Nm (2.2 m·kgf, 16 ft·lbf)	See TIP.
Speed sensor lead holder bracket bolt	M6	1	9 Nm (0.9 m·kgf, 6.5 ft·lbf)	
Lower bracket pinch bolt	M8	4	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Cap bolt	M29	2	45 Nm (4.5 m·kgf, 32 ft·lbf)	
Damper rod bolt	M10	2	30 Nm (3.0 m·kgf, 22 ft·lbf)	
Swingarm bolt	M8	2	28 Nm (2.8 m·kgf, 20 ft·lbf)	See TIP.
Rear shock absorber assembly nut (upper side)	M10	2	32 Nm (3.2 m·kgf, 23 ft·lbf)	
Rear shock absorber assembly bolt (lower side)	M8	2	18 Nm (1.8 m·kgf, 13 ft·lbf)	
Ignition coil bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Ignition coil bracket bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
ECU (engine control unit) bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Rectifier/regulator bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Battery terminal bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Horn bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	

TIGHTENING TORQUES (YP125R)

TIP

Lower ring nut

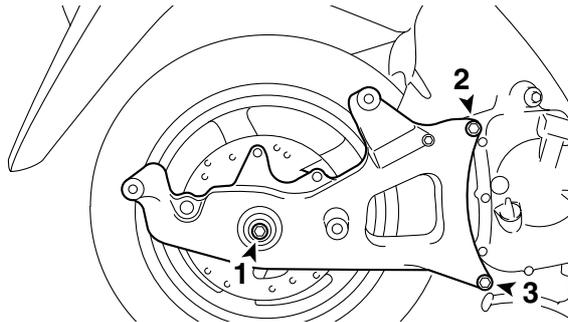
1. Tighten the lower ring nut 38 Nm (3.8 m·kgf, 27 ft·lbf) with a torque wrench and the steering nut wrench, and then loosen the nut 1/4 turn.
 2. Tighten the lower ring nut 22 Nm (2.2 m·kgf, 16 ft·lbf) with a torque wrench and the steering nut wrench.
 3. Install the rubber washer and the center ring nut.
 4. Finger tighten the center ring nut, align the slots of both ring nuts, and then install the lock washer.
 5. Hold the lower and center ring nuts, and then tighten the upper ring nut 75 Nm (7.5 m·kgf, 54 ft·lbf) with a torque wrench and the steering nut wrench.
-

TIP

Swingarm mounting bolt

1. Temporarily install the rear wheel axle nut "1".
 2. Temporarily install the swingarm mounting bolt (upper side) "2", then the swingarm mounting bolt (lower side) "3".
 3. Tighten the rear wheel axle nut to 135 Nm (13.5 m·kgf, 98 ft·lbf).
 4. Tighten the swingarm mounting bolt (upper side), then the swingarm mounting bolt (lower side) to 28 Nm (2.8 m·kgf, 20 ft·lbf).
-

Swingarm tightening sequence:



LUBRICATION POINTS AND LUBRICANT TYPES (YP125R)

EAS37P1125

LUBRICATION POINTS AND LUBRICANT TYPES (YP125R)

EAS37P1126

ENGINE

Lubrication point	Lubricant
Oil seal lips	
O-rings	
Bearings	
Cylinder head nut mounting surface	
Crankshaft pin	
Connecting rod big end thrust surface	
Oil pump drive gear inner surface	
Camshaft sprocket inner surface	
Piston pin and connecting rod small end	
Piston, piston rings, and cylinder inner surface	
Crankshaft end (generator rotor side)	
Camshaft lobes	
Valve stems (intake and exhaust)	
Valve stem ends (intake and exhaust)	
Rocker arm shaft and rocker arm	
Decompressor cam	
Oil pump driven gear shaft	
Oil pump rotors (inner and outer)	
Collar (clutch housing)	
Starter clutch idle gear thrust surface	
Starter clutch idle gear shaft surface	
Starter clutch gear thrust surface	
Starter clutch gear inner surface	
Starter clutch rollers	
Main axle thrust surface	
Drive axle serration	
Oil seal and spacer (primary sheave)	BEL-RAY assembly lube®
O-ring (clutch housing and secondary sheave)	BEL-RAY assembly lube®
Crankcase mating surfaces	Yamaha bond No.1215®
Crankshaft position sensor/stator assembly lead grommet	Yamaha bond No.1215®

LUBRICATION POINTS AND LUBRICANT TYPES (YP125R)

Lubrication point	Lubricant
Timing chain tensioner bolt	Yamaha bond No.1215®

LUBRICATION POINTS AND LUBRICANT TYPES (YP125R)

EAS37P1127

CHASSIS

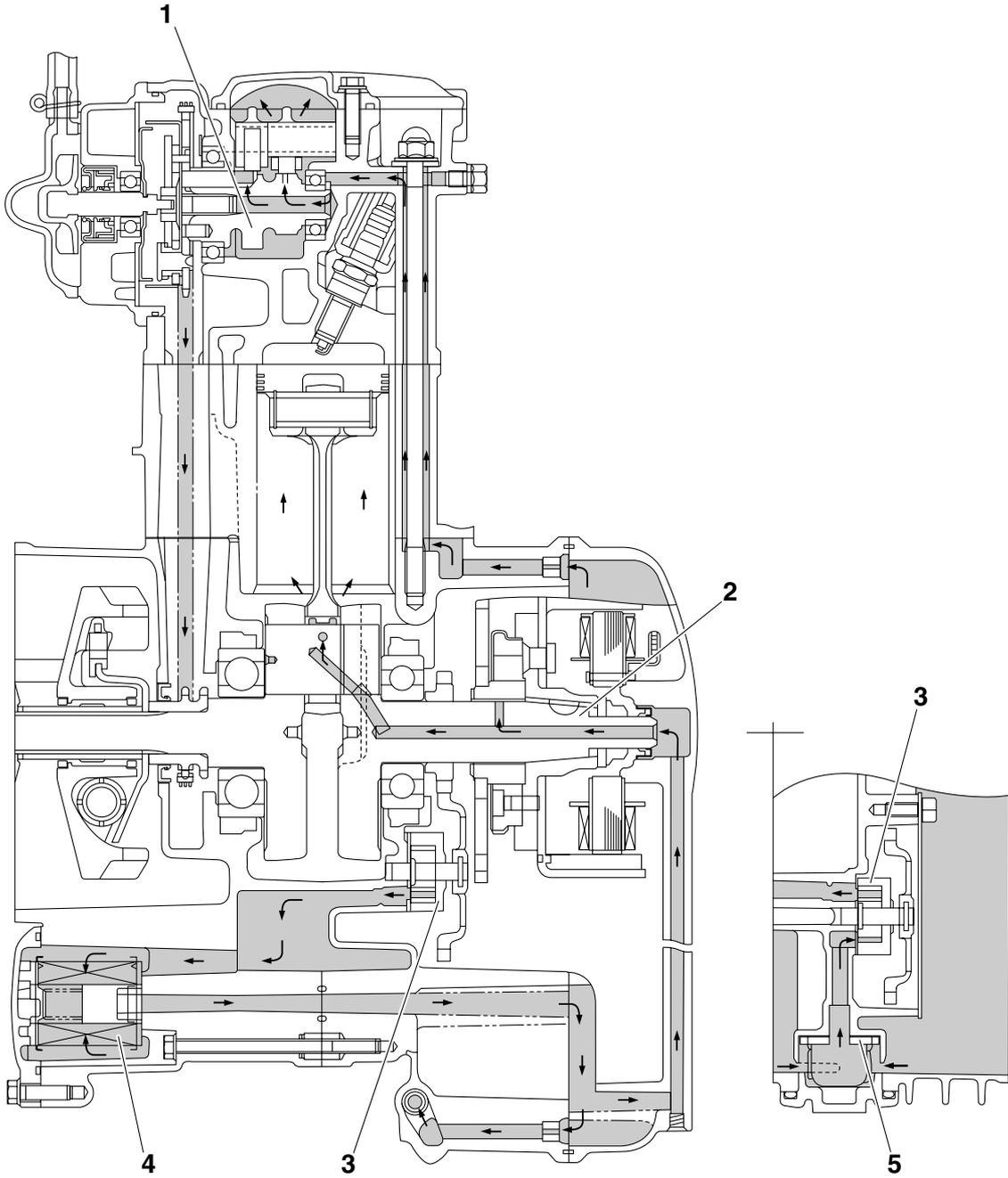
Lubrication point	Lubricant
Drive axle	
Swingarm oil seal lips	
Steering bearings (upper and lower)	
Seat hinge pin	
Front wheel oil seal lip and front wheel axle	
Speed sensor oil seal lip	
Brake lever pivoting point and metal-to-metal moving parts	
Rear brake pad pin	
Throttle cable end	
Throttle grip inner surface and throttle cables	
Handlebar grip inner surface	Rubber adhesive
Sidestand pivoting point and metal-to-metal moving parts	
Sidestand spring hook metal-to-metal moving parts	
Centerstand shaft pivoting point and metal-to-metal moving parts	
Centerstand spring hook metal-to-metal moving parts	
Passenger footrest pivoting point	

LUBRICATION POINTS AND LUBRICANT TYPES (YP125R)

LUBRICATION SYSTEM DIAGRAMS (YP125R)

EAS37P1139

LUBRICATION SYSTEM DIAGRAMS (YP125R)



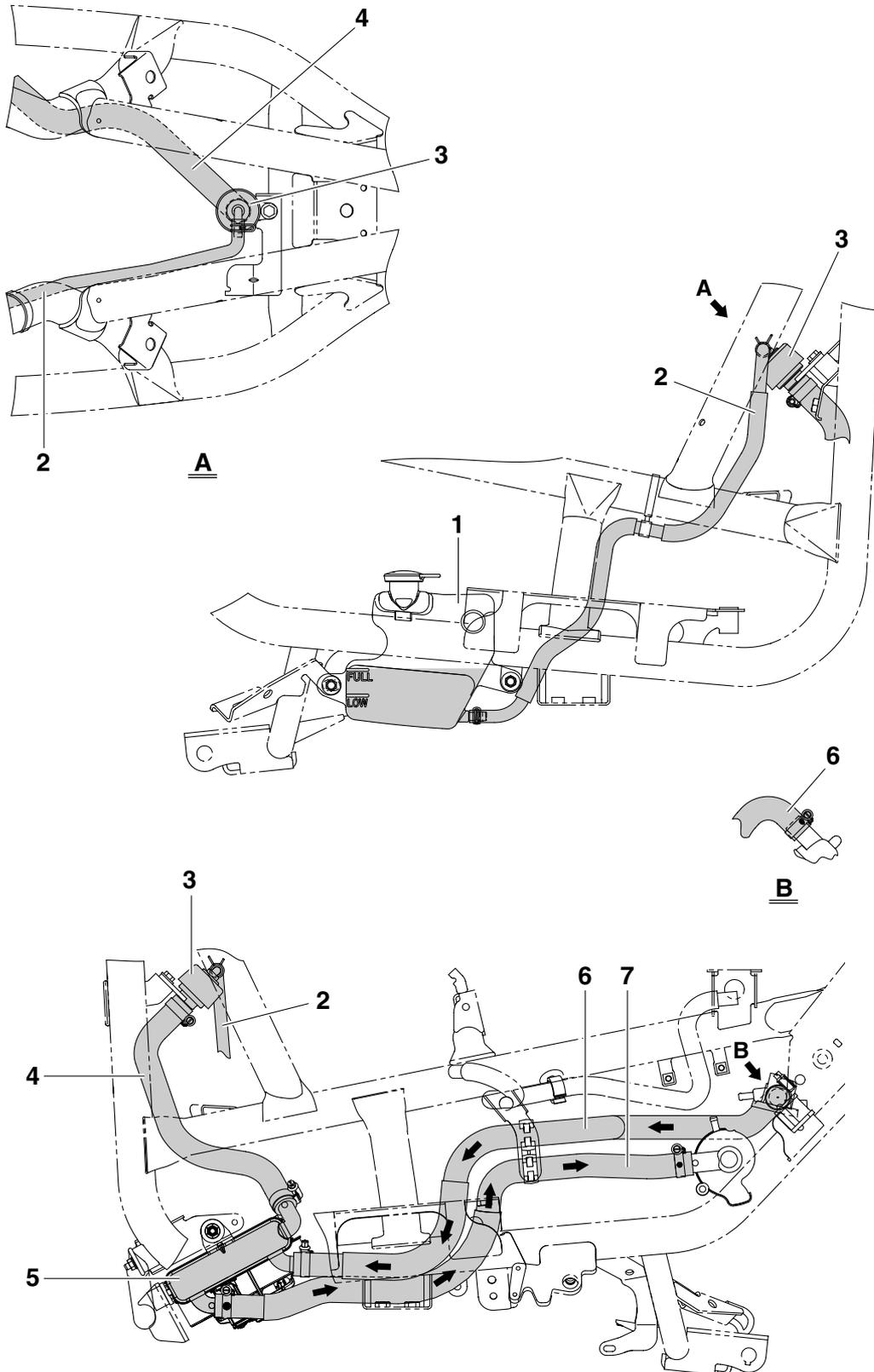
LUBRICATION SYSTEM DIAGRAMS (YP125R)

1. Camshaft
2. Crankshaft
3. Oil pump
4. Oil filter
5. Oil strainer

COOLING SYSTEM DIAGRAMS (YP125R)

EAS37P1128

COOLING SYSTEM DIAGRAMS (YP125R)



COOLING SYSTEM DIAGRAMS (YP125R)

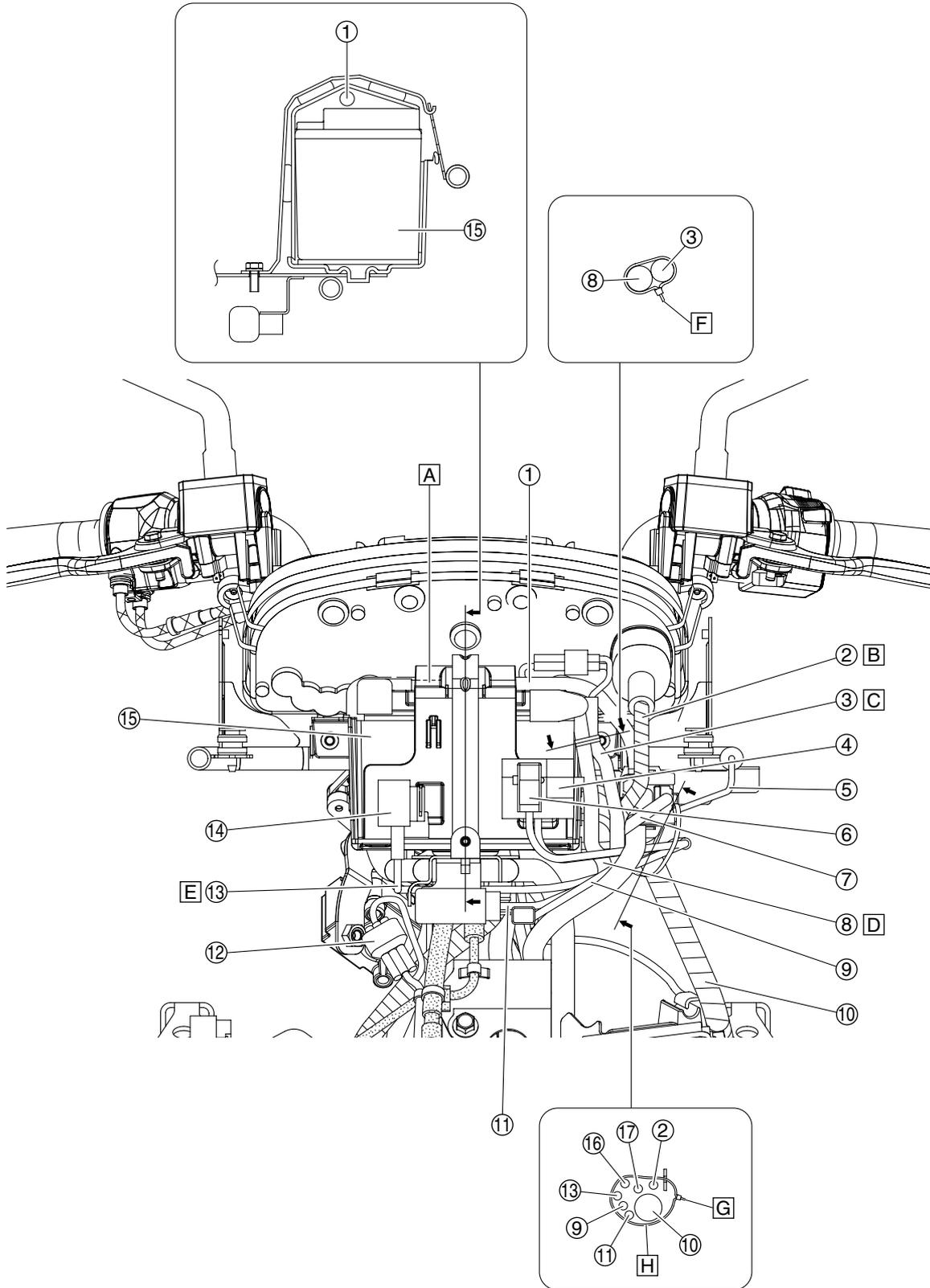
1. Coolant reservoir
2. Coolant reservoir hose
3. Radiator cap
4. Radiator filler hose
5. Radiator
6. Radiator inlet hose
7. Radiator outlet hose

CABLE ROUTING (YP125R)

EAS37P1129

CABLE ROUTING (YP125R)

Battery (front view)

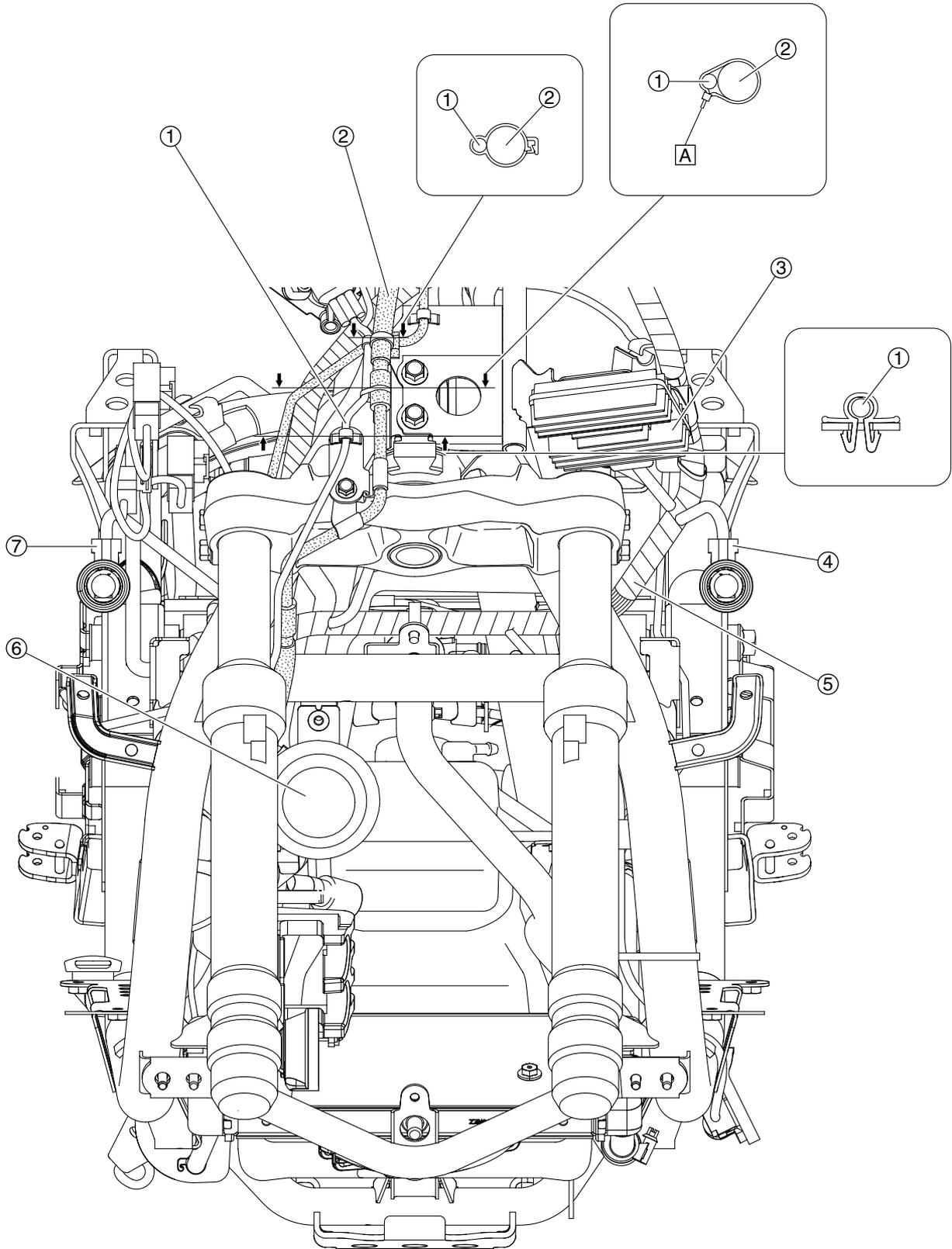


CABLE ROUTING (YP125R)

1. Positive battery lead
 2. Meter assembly lead
 3. Self-diagnosis signal lead
 4. Fuse box 1
 5. Air temperature sensor lead
 6. Fuse box 2
 7. Starter relay lead
 8. Negative battery lead
 9. Headlight lead
 10. Wire harness
 11. Lean angle sensor lead
 12. Speed sensor coupler
 13. Turn signal/hazard relay lead
 14. Turn signal/hazard relay
 15. Battery
 16. Fuse box 2 lead
 17. Fuse box 1 lead
- A. Route the positive battery lead under the battery cover.
 - B. Route the meter assembly lead to the front of the starter relay.
 - C. Route the self-diagnosis signal lead along the negative battery lead.
 - D. Route the negative battery lead to the rear of the turn signal/hazard relay lead, lean angle sensor lead, and headlight lead.
 - E. Route the turn signal/hazard relay lead to the rear of the lean angle sensor.
 - F. Point the end of the plastic locking tie forward, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).
 - G. Point the end of the plastic locking tie upward, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).
 - H. Fasten the wire harness and the other leads with a plastic locking tie, making sure to align the tie with the white tape on the harness.

CABLE ROUTING (YP125R)

Front fork (front view)

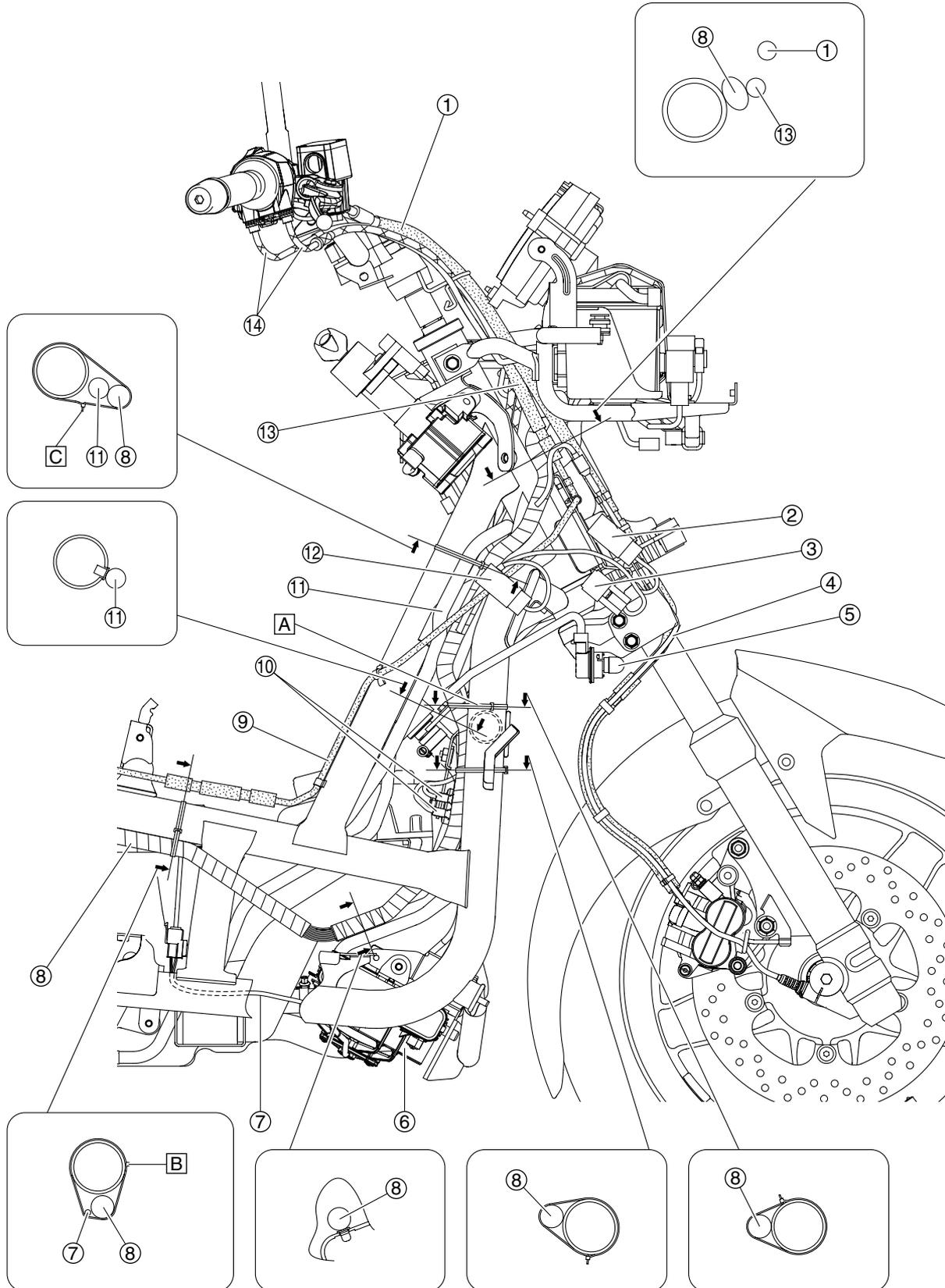


CABLE ROUTING (YP125R)

1. Speed sensor lead
2. Front brake hose
3. Rectifier/regulator
4. Left front turn signal light coupler
5. Wire harness
6. Horn
7. Right front turn signal light coupler
- A. Point the end of the plastic locking tie forward, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).

CABLE ROUTING (YP125R)

Front brake hose (right side view)

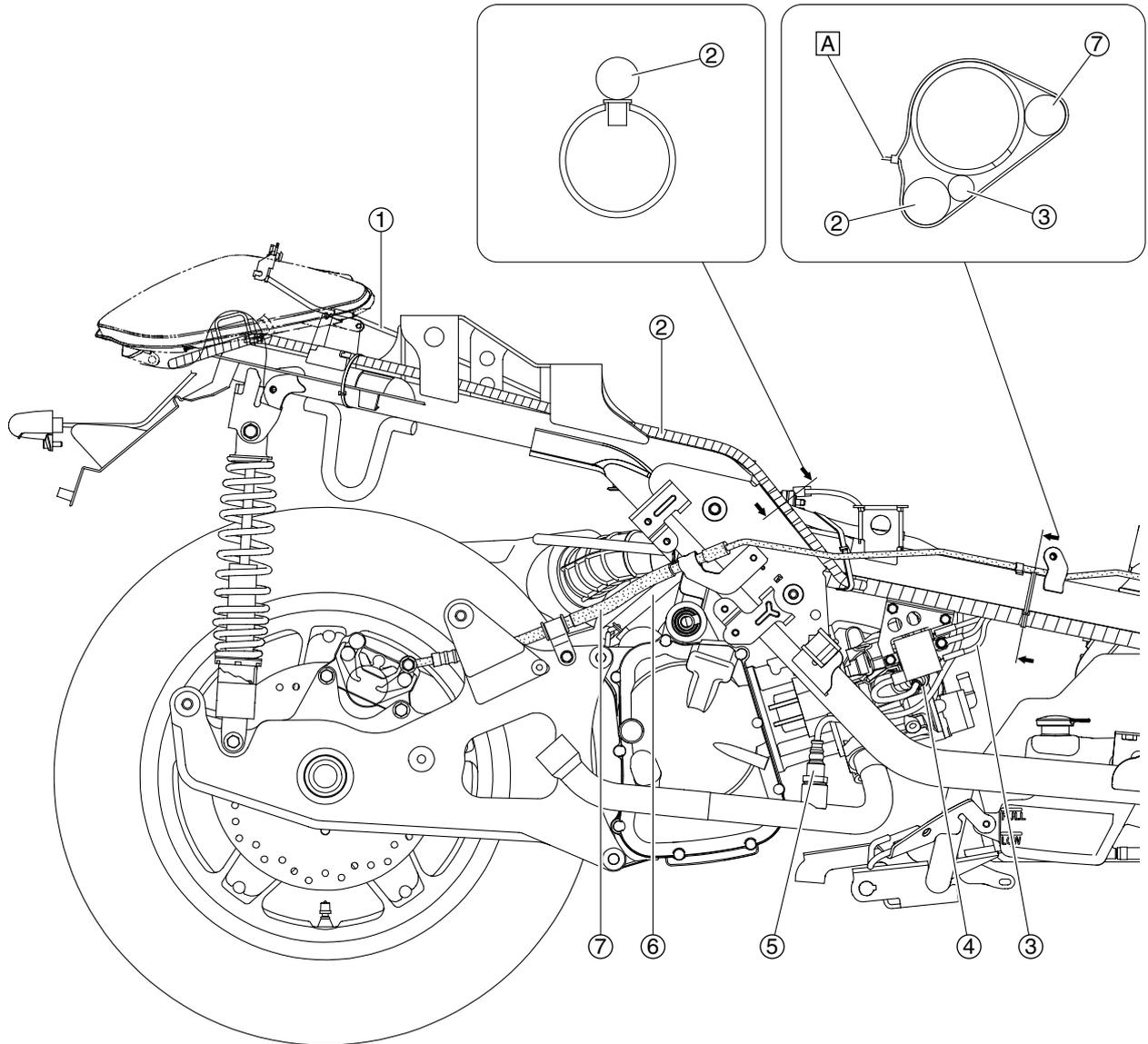


CABLE ROUTING (YP125R)

1. Front brake hose
 2. Radiator fan motor relay
 3. Starting circuit cut-off relay
 4. Speed sensor lead
 5. Right front turn signal light
 6. Radiator fan motor
 7. Radiator fan motor lead
 8. Wire harness
 9. Rear brake pipe
 10. Horn leads
 11. Starter motor lead
 12. Headlight relay
 13. Rear brake hose
 14. Throttle cables
- A. Position the plastic locking tie above the frame cross member.
 - B. Point the end of the plastic locking tie to the right, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).
 - C. Point the end of the plastic locking tie forward, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).

CABLE ROUTING (YP125R)

Engine (right side view)

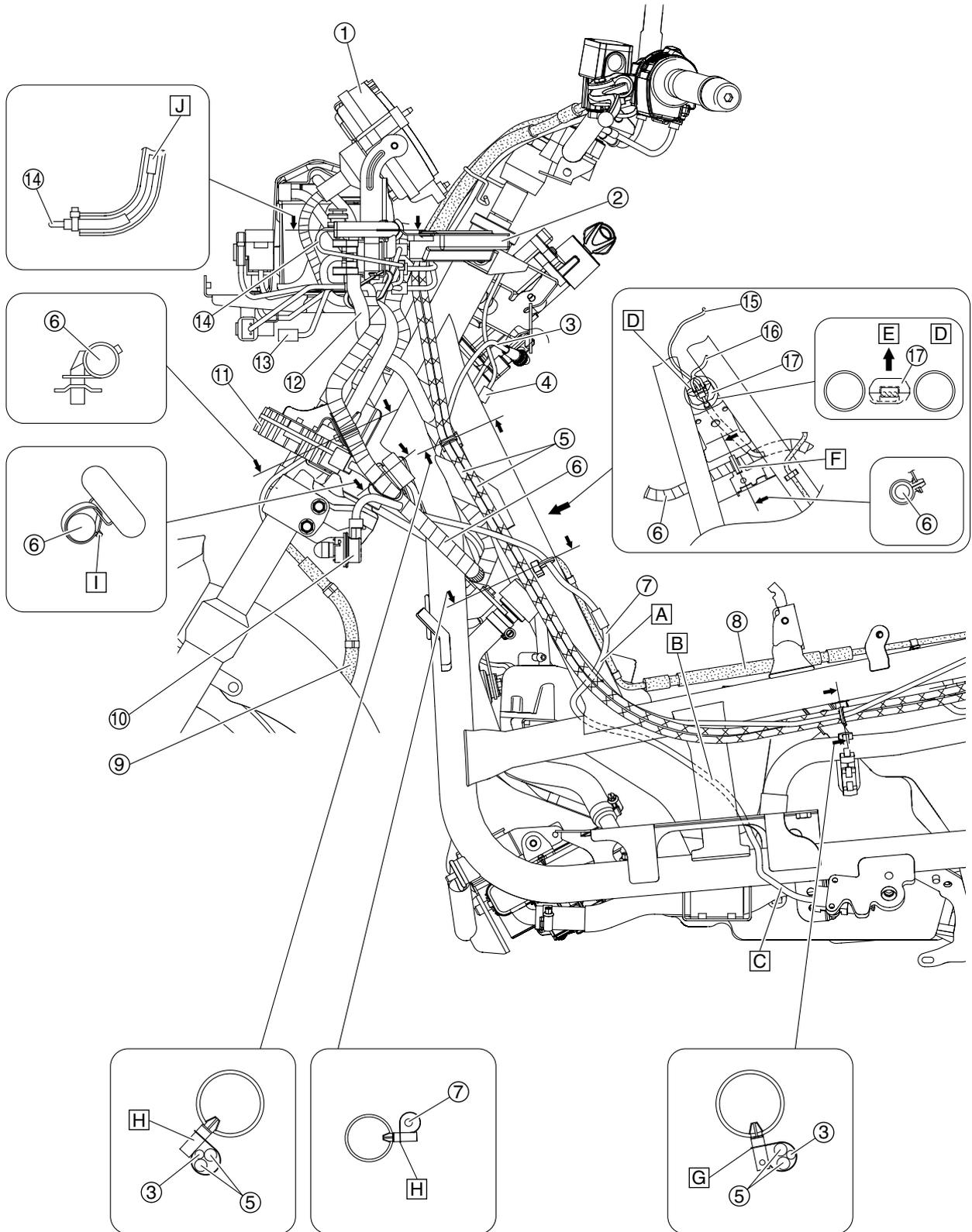


CABLE ROUTING (YP125R)

1. Seat lock cable
 2. Wire harness
 3. Ignition coil lead
 4. Spark plug cap
 5. O₂ sensor
 6. Starter motor lead
 7. Rear brake hose
- A. Point the end of the plastic locking tie to the right, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).

CABLE ROUTING (YP125R)

Throttle cables (left side view)

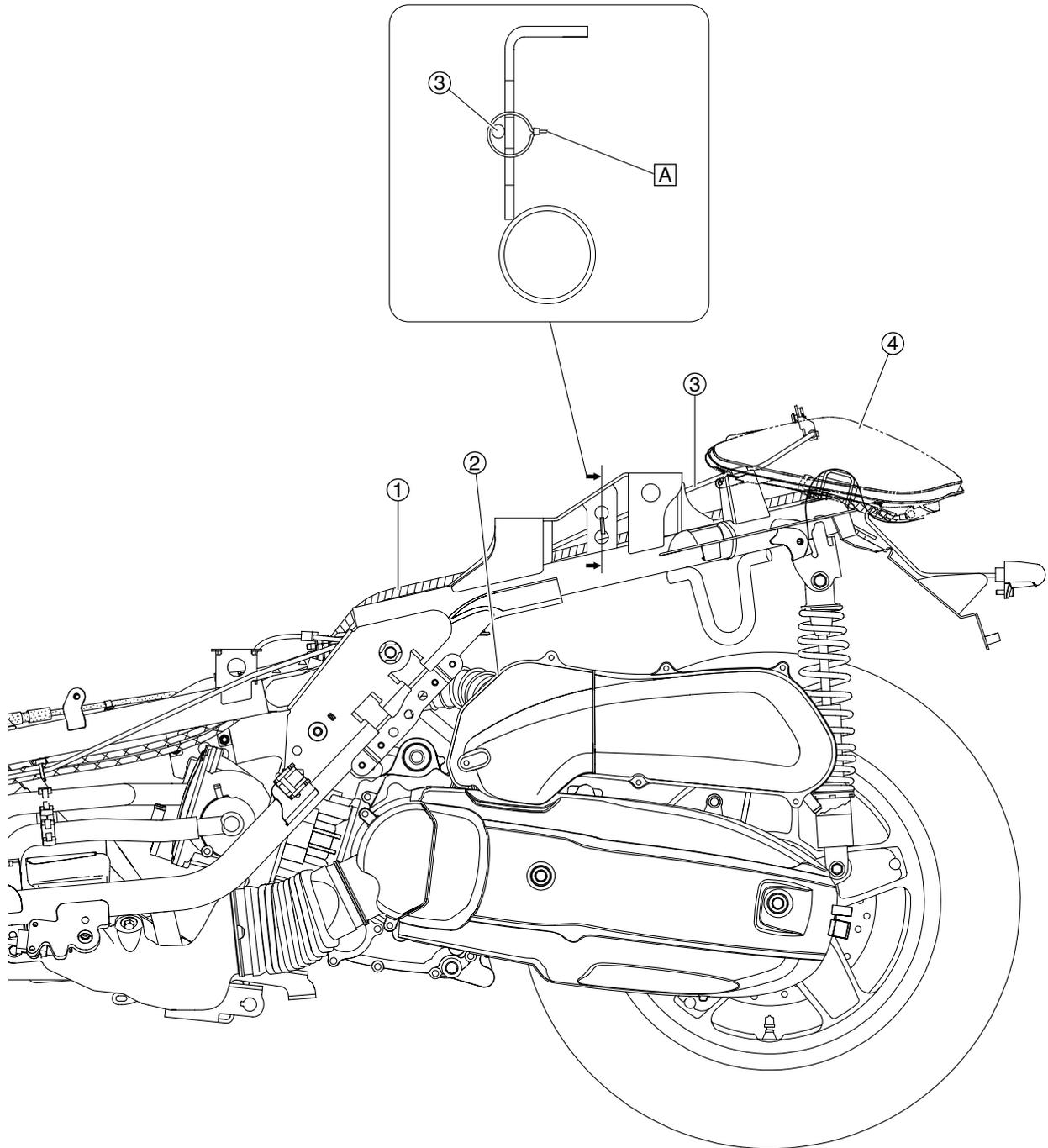


CABLE ROUTING (YP125R)

1. Meter assembly
 2. ECU (engine control unit)
 3. Seat lock cable
 4. Immobilizer unit coupler
 5. Throttle cables
 6. Wire harness
 7. Sidestand switch lead
 8. Rear brake hose
 9. Front brake hose
 10. Left front turn signal light lead
 11. Rectifier/regulator
 12. Starter motor lead
 13. Headlight coupler
 14. Air temperature sensor lead
 15. Immobilizer unit lead
 16. Main switch lead
 17. Connector cover
- A. Route the sidestand switch lead to the outside of the rear brake pipe.
 - B. Route the sidestand switch lead to the inside of the frame.
 - C. Route the sidestand switch lead to the outside of the frame.
 - D. Position the connector cover as shown in the illustration.
 - E. Forward
 - F. Fasten the wire harness at the white tape with the holder.
 - G. Point the end of the plastic locking tie to the right, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).
 - H. Point the end of the plastic locking tie forward.
 - I. Point the end of the plastic locking tie to the left, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).
 - J. Install the air temperature sensor so that there is some slack in the air temperature sensor lead.

CABLE ROUTING (YP125R)

Engine (left side view)

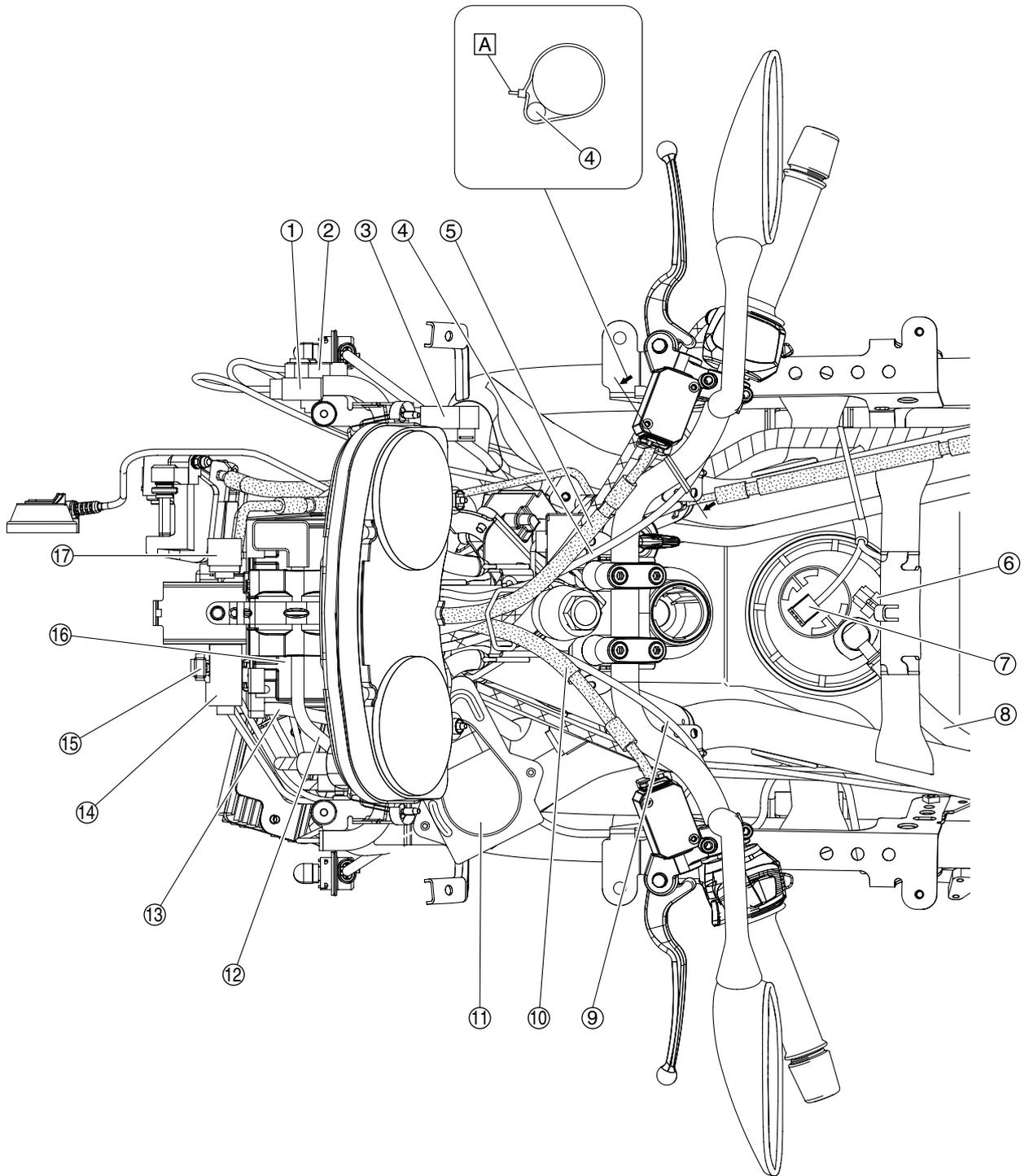


CABLE ROUTING (YP125R)

1. Wire harness
 2. Intake air temperature sensor
 3. Seat lock cable
 4. Left tail/brake light assembly
- A. Point the end of the plastic locking tie to the left, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).

CABLE ROUTING (YP125R)

Handlebar (top view)

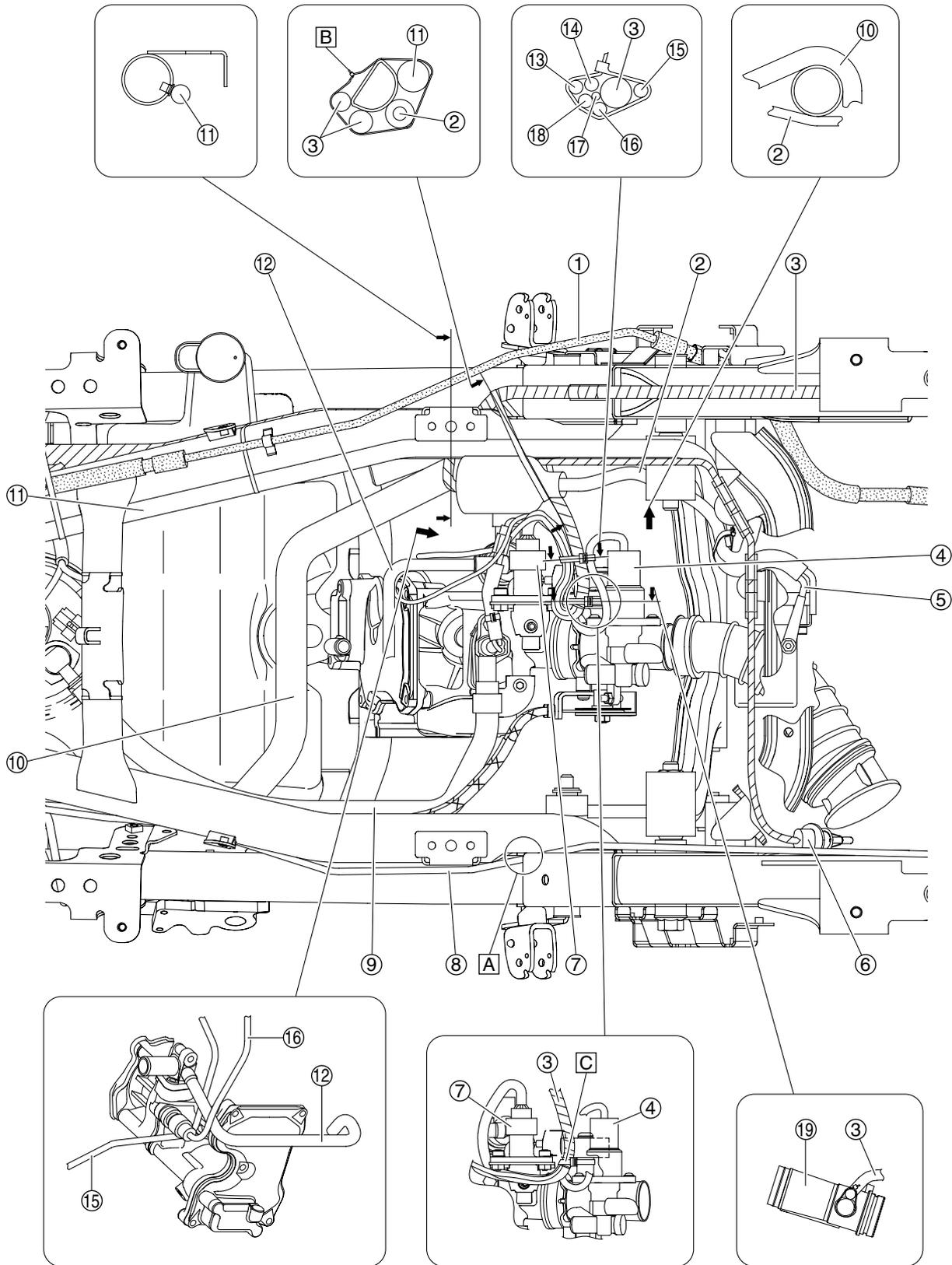


CABLE ROUTING (YP125R)

1. Radiator fan motor relay
 2. Starting circuit cut-off relay
 3. Headlight relay
 4. Right handlebar switch lead
 5. Front brake hose
 6. Fuel pump coupler
 7. Fuel sender coupler
 8. Fuel hose
 9. Left handlebar switch lead
 10. Rear brake hose
 11. ECU (engine control unit)
 12. Positive battery lead
 13. Negative battery lead
 14. Fuse box 1
 15. Fuse box 2
 16. Battery
 17. Turn signal/hazard relay
- A. Point the end of the plastic locking tie to the left, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).

CABLE ROUTING (YP125R)

Throttle body (top view)

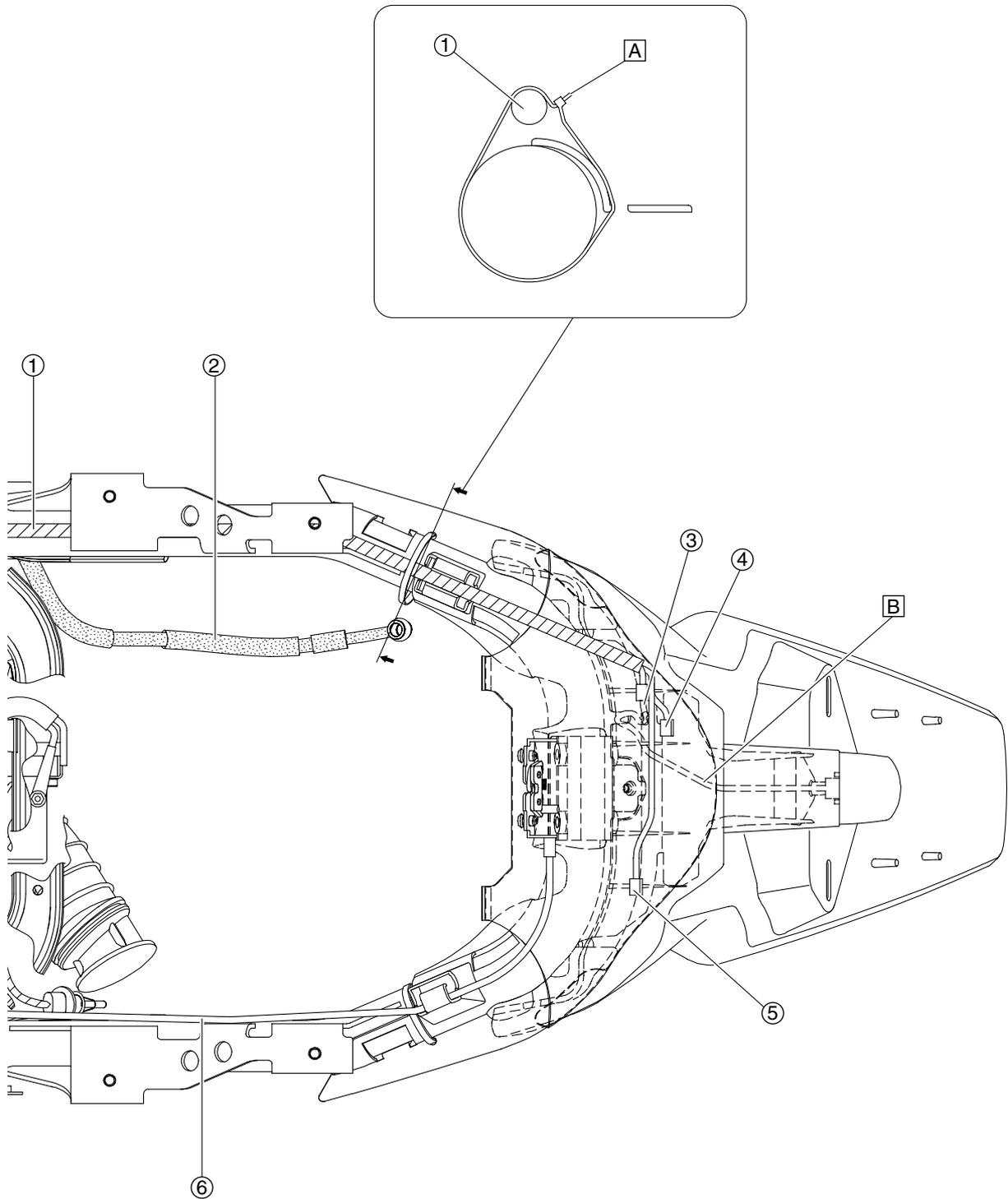


CABLE ROUTING (YP125R)

1. Rear brake pipe
 2. Crankshaft position sensor/stator assembly lead
 3. Wire harness
 4. ISC (idle speed control) unit coupler
 5. Ground lead
 6. Intake air temperature sensor coupler
 7. Intake air pressure sensor coupler
 8. Seat lock cable
 9. Fuel injector assembly
 10. Radiator inlet hose
 11. Starter motor lead
 12. Thermostat inlet hose
 13. Intake air pressure lead
 14. Fuel injector lead
 15. Throttle position sensor lead
 16. Coolant temperature sensor lead
 17. ISC (idle speed control) unit lead
 18. O₂ sensor lead
 19. Throttle body
- A. Route the seat lock cable to the inside of the frame.
 - B. Point the end of the plastic locking tie to the right, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).
 - C. Fasten the wire harness at the white tape with a plastic locking tie. Cut off the excess end of the tie to 0–5 mm (0–0.20 in).

CABLE ROUTING (YP125R)

Tail/brake light (top view)



CABLE ROUTING (YP125R)

1. Wire harness
2. Rear brake hose
3. License plate light lead
4. Right tail/brake light assembly coupler
5. Left tail/brake light assembly coupler
6. Seat lock cable
- A. Point the end of the plastic locking tie to the right, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).
- B. Route the license plate light lead between the water guard and the license plate light bracket.

GENERAL SPECIFICATIONS (YP250R)

EAS20280

GENERAL SPECIFICATIONS (YP250R)

Model

Model	37P1 (YAMAHA)
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Dimensions

Overall length	2201 mm (86.7 in)
Overall width	776 mm (30.6 in)
Overall height	1337 mm (52.6 in)
Seat height	792 mm (31.2 in)
Wheelbase	1545 mm (60.8 in)
Ground clearance	134 mm (5.30 in)
Minimum turning radius	1805 mm (71.1 in)

Weight

With oil and fuel	177.4 kg (391 lb)
Maximum load	186 kg (410 lb)

ENGINE SPECIFICATIONS (YP250R)

EAS20290

ENGINE SPECIFICATIONS (YP250R)

Engine

Engine type	Liquid cooled 4-stroke, SOHC
Displacement	249 cm ³
Cylinder arrangement	Forward-inclined single cylinder
Bore × stroke	69.0 × 66.8 mm (2.72 × 2.63 in)
Compression ratio	10.00 :1
Standard compression pressure (at sea level)	1400 kPa/500 r/min (14.0 kgf/cm ² /500 r/min, 199.1 psi/500 r/min)
Minimum–maximum	1120–1570 kPa (11.2–15.7 kgf/cm ² , 159.3–223.3 psi)
Starting system	Electric starter

Fuel

Recommended fuel	Regular unleaded gasoline only
Fuel tank capacity	11.8 L (3.12 US gal, 2.60 Imp.gal)
Fuel reserve amount	1.7 L (0.45 US gal, 0.37 Imp.gal)

Engine oil

Lubrication system	Wet sump
Type	SAE 10W-30, SAE 10W-40, SAE 15W-40, SAE 20W-40 or SAE 20W-50
Recommended engine oil grade	API service SF, SG type or higher, JASO standard MA
Engine oil quantity	
Total amount	1.50 L (1.59 US qt, 1.32 Imp.qt)
Periodic oil change	1.30 L (1.37 US qt, 1.14 Imp.qt)

Final transmission oil

Type	SAE 10W-30 type SE motor oil
Quantity	0.25 L (0.26 US qt, 0.22 Imp.qt)

Oil filter

Oil filter type	Paper
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Oil pump

Oil pump type	Trochoid
Inner-rotor-to-outer-rotor-tip clearance	Less than 0.15 mm (0.0059 in)
Limit	0.23 mm (0.0091 in)
Outer-rotor-to-oil-pump-housing clearance	0.013–0.036 mm (0.0005–0.0014 in)
Limit	0.106 mm (0.0042 in)
Oil-pump-housing-to-inner-and-outer-rotor clearance	0.04–0.09 mm (0.0016–0.0035 in)
Limit	0.16 mm (0.0063 in)

Cooling system

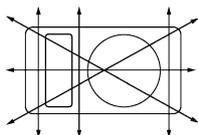
Radiator capacity (including all routes)	1.00 L (1.06 US qt, 0.88 Imp.qt)
Coolant reservoir capacity (up to the maximum level mark)	0.25 L (0.26 US qt, 0.22 Imp.qt)
Radiator cap opening pressure	100.0–120.0 kPa (1.00–1.20 kgf/cm ² , 14.5–17.4 psi)

ENGINE SPECIFICATIONS (YP250R)

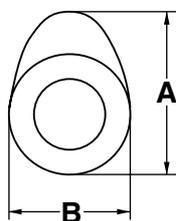
Thermostat	
Valve opening temperature	80.5–83.5 °C (176.9–182.3 °F)
Valve full open temperature	93.0–97.0 °C (199.4–206.6 °F)
Valve lift (full open)	3.0 mm (0.12 in)
Radiator core	
Width	244.0 mm (9.61 in)
Height	128.9 mm (5.07 in)
Depth	22.0 mm (0.87 in)
Water pump	
Water pump type	Single suction centrifugal pump
Reduction ratio	37/22 × 25/37 (1.136)
Impeller shaft tilt limit	0.15 mm (0.0059 in)

Spark plug (s)	
Manufacturer/model	NGK/DPR8EA-9
Spark plug gap	0.8–0.9 mm (0.031–0.035 in)

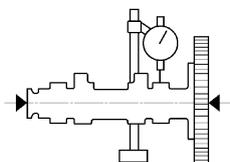
Cylinder head	
Volume	21.40–22.00 cm ³ (1.31–1.34 cu.in)
Warpage limit	0.05 mm (0.0020 in)



Camshaft	
Drive system	Chain drive (left)
Camshaft lobe dimensions	
Intake A	37.051–37.151 mm (1.4587–1.4626 in)
Limit	36.950 mm (1.4547 in)
Intake B	30.074–30.174 mm (1.1840–1.1880 in)
Limit	29.974 mm (1.1801 in)
Exhaust A	37.053–37.153 mm (1.4588–1.4627 in)
Limit	36.953 mm (1.4548 in)
Exhaust B	30.091–30.191 mm (1.1847–1.1886 in)
Limit	29.991 mm (1.1807 in)



Camshaft runout limit	0.030 mm (0.0012 in)
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ENGINE SPECIFICATIONS (YP250R)

Timing chain

Tensioning system Automatic

Rocker arm/rocker arm shaft

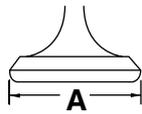
Rocker arm inside diameter 12.000–12.018 mm (0.4724–0.4731 in)
 Limit 12.030 mm (0.4736 in)
 Rocker arm shaft outside diameter 11.981–11.991 mm (0.4717–0.4721 in)
 Limit 11.950 mm (0.4705 in)
 Rocker-arm-to-rocker-arm-shaft clearance 0.009–0.037 mm (0.0004–0.0015 in)
 Limit 0.080 mm (0.0031 in)

Valve, valve seat, valve guide

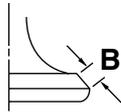
Valve clearance (cold)
 Intake 0.08–0.12 mm (0.0031–0.0047 in)
 Exhaust 0.16–0.20 mm (0.0063–0.0079 in)

Valve dimensions

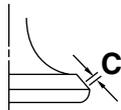
Valve head diameter A (intake) 33.90–34.10 mm (1.3346–1.3425 in)
 Valve head diameter A (exhaust) 28.40–28.60 mm (1.1181–1.1260 in)



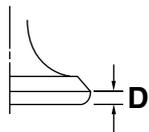
Valve face width B (intake) 3.394–3.960 mm (0.1336–0.1559 in)
 Valve face width B (exhaust) 3.394–3.960 mm (0.1336–0.1559 in)



Valve seat width C (intake) 0.90–1.10 mm (0.0354–0.0433 in)
 Limit 1.6 mm (0.06 in)
 Valve seat width C (exhaust) 0.90–1.10 mm (0.0354–0.0433 in)
 Limit 1.6 mm (0.06 in)



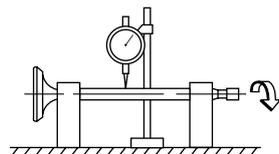
Valve margin thickness D (intake) 0.80–1.20 mm (0.0315–0.0472 in)
 Limit 0.5 mm (0.02 in)
 Valve margin thickness D (exhaust) 0.80–1.20 mm (0.0315–0.0472 in)
 Limit 0.5 mm (0.02 in)



Valve stem diameter (intake) 5.975–5.990 mm (0.2352–0.2358 in)
 Limit 5.940 mm (0.2339 in)
 Valve stem diameter (exhaust) 5.960–5.975 mm (0.2346–0.2352 in)
 Limit 5.920 mm (0.2331 in)

ENGINE SPECIFICATIONS (YP250R)

Valve guide inside diameter (intake)	6.000–6.012 mm (0.2362–0.2367 in)
Limit	6.050 mm (0.2382 in)
Valve guide inside diameter (exhaust)	6.000–6.012 mm (0.2362–0.2367 in)
Limit	6.050 mm (0.2382 in)
Valve-stem-to-valve-guide clearance (intake)	0.010–0.037 mm (0.0004–0.0015 in)
Limit	0.080 mm (0.0031 in)
Valve-stem-to-valve-guide clearance (exhaust)	0.025–0.052 mm (0.0010–0.0020 in)
Limit	0.100 mm (0.0039 in)
Valve stem runout	0.010 mm (0.0004 in)

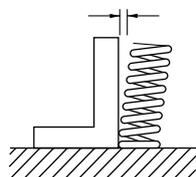


Cylinder head valve seat width (intake)	0.90–1.10 mm (0.0354–0.0433 in)
Limit	1.6 mm (0.06 in)
Cylinder head valve seat width (exhaust)	0.90–1.10 mm (0.0354–0.0433 in)
Limit	1.6 mm (0.06 in)

Valve spring

Inner spring

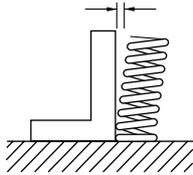
Free length (intake)	38.10 mm (1.50 in)
Limit	36.10 mm (1.42 in)
Free length (exhaust)	38.10 mm (1.50 in)
Limit	36.10 mm (1.42 in)
Installed length (intake)	30.10 mm (1.19 in)
Installed length (exhaust)	30.10 mm (1.19 in)
Spring rate K1 (intake)	10.29 N/mm (1.05 kgf/mm, 58.75 lb/in)
Spring rate K2 (intake)	13.37 N/mm (1.36 kgf/mm, 76.34 lb/in)
Spring rate K1 (exhaust)	10.29 N/mm (1.05 kgf/mm, 58.75 lb/in)
Spring rate K2 (exhaust)	13.37 N/mm (1.36 kgf/mm, 76.34 lb/in)
Installed compression spring force (intake)	76–88 N (7.75–8.97 kgf, 17.08–19.78 lbf)
Installed compression spring force (exhaust)	76–88 N (7.75–8.97 kgf, 17.08–19.78 lbf)
Spring tilt (intake)	2.5°/1.7 mm
Spring tilt (exhaust)	2.5°/1.7 mm



Winding direction (intake)	Counterclockwise
Winding direction (exhaust)	Counterclockwise
Outer spring	
Free length (intake)	36.93 mm (1.45 in)
Limit	35.00 mm (1.38 in)
Free length (exhaust)	36.93 mm (1.45 in)
Limit	35.00 mm (1.38 in)
Installed length (intake)	31.60 mm (1.24 in)
Installed length (exhaust)	31.60 mm (1.24 in)

ENGINE SPECIFICATIONS (YP250R)

Spring rate K1 (intake)	23.18 N/mm (2.36 kgf/mm, 132.36 lb/in)
Spring rate K2 (intake)	31.66 N/mm (3.23 kgf/mm, 180.78 lb/in)
Spring rate K1 (exhaust)	23.18 N/mm (2.36 kgf/mm, 132.36 lb/in)
Spring rate K2 (exhaust)	31.66 N/mm (3.23 kgf/mm, 180.78 lb/in)
Installed compression spring force (intake)	115–133 N (11.73–13.56 kgf, 25.85–29.90 lbf)
Installed compression spring force (exhaust)	115–133 N (11.73–13.56 kgf, 25.85–29.90 lbf)
Spring tilt (intake)	2.5°/1.6 mm
Spring tilt (exhaust)	2.5°/1.6 mm



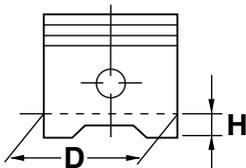
Winding direction (intake)	Clockwise
Winding direction (exhaust)	Clockwise

Cylinder

Bore	69.000–69.005 mm (2.7165–2.7167 in)
Wear limit	69.100 mm (2.7205 in)
Taper limit	0.030 mm (0.0012 in)
Out of round limit	0.030 mm (0.0012 in)
Warp limit	0.05 mm (0.0020 in)

Piston

Piston-to-cylinder clearance	0.020–0.040 mm (0.0008–0.0016 in)
Limit	0.15 mm (0.0059 in)
Diameter D	68.965–68.980 mm (2.7152–2.7157 in)
Height H	5.0 mm (0.20 in)



Offset	0.50 mm (0.0197 in)
Offset direction	Intake side
Piston pin bore inside diameter	17.004–17.015 mm (0.6694–0.6699 in)
Limit	17.045 mm (0.6711 in)
Piston pin outside diameter	16.991–17.000 mm (0.6689–0.6693 in)
Limit	16.971 mm (0.6681 in)
Piston-pin-to-piston-pin-bore clearance	0.004–0.024 mm (0.0002–0.0009 in)
Limit	0.074 mm (0.0029 in)

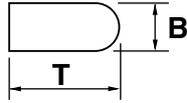
Piston ring

Top ring	Barrel
Ring type	

ENGINE SPECIFICATIONS (YP250R)

Dimensions (B × T)

1.00 × 2.60 mm (0.04 × 0.10 in)



End gap (installed)

0.15–0.30 mm (0.0059–0.0118 in)

Limit

0.55 mm (0.0217 in)

Ring side clearance

0.040–0.080 mm (0.0016–0.0031 in)

Limit

0.130 mm (0.0051 in)

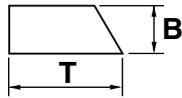
2nd ring

Ring type

Taper

Dimensions (B × T)

1.00 × 2.90 mm (0.04 × 0.11 in)



End gap (installed)

0.30–0.45 mm (0.0118–0.0177 in)

Limit

0.80 mm (0.0315 in)

Ring side clearance

0.030–0.070 mm (0.0012–0.0028 in)

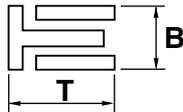
Limit

0.130 mm (0.0051 in)

Oil ring

Dimensions (B × T)

1.50 × 2.50 mm (0.06 × 0.10 in)



End gap (installed)

0.20–0.70 mm (0.0079–0.0276 in)

Ring side clearance

0.060–0.150 mm (0.0024–0.0059 in)

Crankshaft

Width A

59.75–59.80 mm (2.352–2.354 in)

Runout limit C

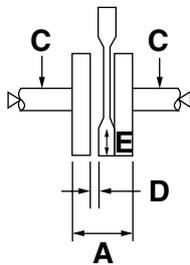
0.030 mm (0.0012 in)

Big end side clearance D

0.350–0.850 mm (0.0138–0.0335 in)

Big end radial clearance E

0.010–0.025 mm (0.0004–0.0010 in)



Clutch

Clutch type

Dry, centrifugal automatic

Automatic centrifugal clutch

Clutch shoe thickness

3.3 mm (0.13 in)

Limit

2.0 mm (0.08 in)

ENGINE SPECIFICATIONS (YP250R)

Clutch shoe spring free length	40.5 mm (1.59 in)
Clutch housing inside diameter	145.0 mm (5.71 in)
Limit	145.5 mm (5.73 in)
Compression spring free length	102.4 mm (4.03 in)
Limit	90.0 mm (3.54 in)
Weight outside diameter	20.0 mm (0.79 in)
Limit	19.5 mm (0.77 in)
Clutch-in revolution	2100–2700 r/min
Clutch-stall revolution	3650–4650 r/min

V-belt	
V-belt width	23.0 mm (0.91 in)
Limit	21.0 mm (0.83 in)

Transmission	
Transmission type	V-belt automatic
Primary reduction system	Helical gear
Primary reduction ratio	40/15 (2.666)
Secondary reduction system	Helical gear
Secondary reduction ratio	40/14 (2.857)
Operation	Centrifugal automatic type
Gear ratio	2.440–0.830 :1

Air filter	
Air filter element	Oil-coated paper element

Fuel pump	
Pump type	Electrical
Output pressure	250.0 kPa (2.50 kgf/cm ² , 36.3 psi)

Fuel injector	
Model/quantity	1C04/1

Throttle body	
Type/quantity	EFI 1C04/1
ID mark	1C04 00

Throttle position sensor	
Input voltage (at idle)	5 V
Output voltage (at idle)	0.40–0.90 V

Fuel injection sensor	
Crankshaft position sensor resistance	248–372 Ω at 20 °C (68 °F)
Intake air pressure sensor output voltage	3.57–3.71 V
Intake air temperature sensor resistance	2.21–2.69 k Ω at 20 °C (68 °F)
Coolant temperature sensor resistance	2.32–2.59 k Ω at 20 °C (68 °F) 310–326 Ω at 80 °C (176 °F)

Idling condition	
Engine idling speed	1450–1650 r/min
CO% (muffler tailpipe)	0.3–0.7%
Intake vacuum	39.0–45.0 kPa (293–338 mmHg, 11.5–13.3 inHg)

ENGINE SPECIFICATIONS (YP250R)

Water temperature	85.0–95.0 °C (185.00–203.00 °F)
Oil temperature	75.0–85.0 °C (167.00–185.00 °F)
Throttle cable free play	3.0–5.0 mm (0.12–0.20 in)

CHASSIS SPECIFICATIONS (YP250R)

EAS20300

CHASSIS SPECIFICATIONS (YP250R)

Chassis

Frame type	Steel tube underbone
Caster angle	28.00°
Trail	100.0 mm (3.94 in)

Front wheel

Wheel type	Cast wheel
Rim size	15 × MT3.5
Rim material	Aluminum
Wheel travel	110.0 mm (4.33 in)
Radial wheel runout limit	1.0 mm (0.04 in)
Lateral wheel runout limit	0.5 mm (0.02 in)
Wheel axle bending limit	0.25 mm (0.01 in)

Rear wheel

Wheel type	Cast wheel
Rim size	14 × MT3.75
Rim material	Aluminum
Wheel travel	95.0 mm (3.74 in)
Radial wheel runout limit	1.0 mm (0.04 in)
Lateral wheel runout limit	0.5 mm (0.02 in)
Wheel axle bending limit	0.25 mm (0.01 in)

Front tire

Type	Tubeless
Size	120/70–15 M/C 56P (PIRELLI) 120/70–15 M/C 56S (MICHELIN)
Manufacturer/model	MICHELIN/GOLD STANDARD PIRELLI/GTS23
Wear limit (front)	1.6 mm (0.06 in)

Rear tire

Type	Tubeless
Size	140/70–14 M/C 68P (PIRELLI) 140/70–14 M/C 68S (MICHELIN)
Manufacturer/model	MICHELIN/GOLD STANDARD PIRELLI/GTS24
Wear limit (rear)	1.6 mm (0.06 in)

Tire air pressure (measured on cold tires)

Loading condition	0–90 kg (0–198 lb)
Front	190 kPa (1.90 kgf/cm ² , 28 psi)
Rear	220 kPa (2.20 kgf/cm ² , 32 psi)
Loading condition	90 kg–maximum load
Front	210 kPa (2.10 kgf/cm ² , 30 psi)
Rear	250 kPa (2.50 kgf/cm ² , 36 psi)

Front brake

Type	Single disc brake
Operation	Right hand operation

CHASSIS SPECIFICATIONS (YP250R)

Front disc brake

Disc outside diameter × thickness	267.0 × 5.0 mm (10.51 × 0.20 in)
Brake disc thickness limit	4.5 mm (0.18 in)
Brake disc deflection limit	0.15 mm (0.0059 in)
Brake pad lining thickness (inner)	5.0 mm (0.20 in)
Limit	1.5 mm (0.06 in)
Brake pad lining thickness (outer)	5.0 mm (0.20 in)
Limit	1.5 mm (0.06 in)
Master cylinder inside diameter	12.70 mm (0.50 in)
Caliper cylinder inside diameter	27.00 mm × 2 (1.06 in × 2)
Recommended fluid	DOT 4

Rear brake

Type	Single disc brake
Operation	Left hand operation
Rear disc brake	
Disc outside diameter × thickness	240.0 × 5.0 mm (9.45 × 0.20 in)
Brake disc thickness limit	4.5 mm (0.18 in)
Brake disc deflection limit	0.15 mm (0.0059 in)
Brake pad lining thickness (inner)	5.3 mm (0.21 in)
Limit	0.8 mm (0.03 in)
Brake pad lining thickness (outer)	5.3 mm (0.21 in)
Limit	0.8 mm (0.03 in)
Master cylinder inside diameter	11.0 mm (0.43 in)
Caliper cylinder inside diameter	22.22 mm × 2 (0.87 in × 2)
Recommended fluid	DOT 4

Steering

Steering bearing type	Ball and angular bearings
Center to lock angle (left)	57.0°
Center to lock angle (right)	57.0°
No./size of steel balls	
(Upper)	14 pcs
(Lower)	18 pcs

Front suspension

Type	Telescopic fork
Spring/shock absorber type	Coil spring/oil damper
Front fork travel	110.0 mm (4.33 in)
Fork spring free length	340.0 mm (13.39 in)
Limit	333.0 mm (13.11 in)
Installed length	285.1 mm (11.22 in)
Spring rate K1	12.00 N/mm (1.22 kgf/mm, 68.52 lb/in)
Spring rate K2	16.60 N/mm (1.69 kgf/mm, 94.79 lb/in)
Spring stroke K1	0–77.0 mm (0–3.03 in)
Spring stroke K2	77.0–110.0 mm (3.03–4.33 in)
Inner tube outer diameter	35.0 mm (1.38 in)
Inner tube bending limit	0.2 mm (0.01 in)
Optional spring available	No
Recommended oil	Fork oil 10W or equivalent
Quantity	128.0 cm ³ (4.33 US oz, 4.51 Imp.oz)
Level	109.0 mm (4.29 in)

CHASSIS SPECIFICATIONS (YP250R)

Rear suspension

Type	Unit swing
Spring/shock absorber type	Coil spring/oil damper
Rear shock absorber assembly travel	95.0 mm (3.74 in)
Spring free length	274.0 mm (10.79 in)
Installed length	241.3 mm (9.50 in)
Spring rate K1	8.00 N/mm (0.82 kgf/mm, 45.68 lb/in)
Spring rate K2	17.30 N/mm (1.76 kgf/mm, 98.78 lb/in)
Spring stroke K1	0–47.5 mm (0–1.87 in)
Spring stroke K2	47.5–95.0 mm (1.87–3.74 in)
Optional spring available	No
Spring preload adjusting positions	
Minimum	1
Standard	2
Maximum	4

Swingarm

Swingarm end free play limit (radial)	1.0 mm (0.04 in)
Swingarm end free play limit (axial)	1.0 mm (0.04 in)

ELECTRICAL SPECIFICATIONS (YP250R)

EAS20310

ELECTRICAL SPECIFICATIONS (YP250R)

Voltage

System voltage 12 V

Ignition system

Ignition system TCI (digital)
Advancer type Digital
Ignition timing (B.T.D.C.) 10.0°/1550 r/min

Engine control unit

Model/manufacture 37P0/YAMAHA

Ignition coil

Minimum ignition spark gap 6.0 mm (0.24 in)
Primary coil resistance 2.16–2.64 Ω at 20 °C (68 °F)
Secondary coil resistance 8.64–12.96 k Ω at 20 °C (68 °F)

Spark plug cap

Material Resin
Resistance 10.0 k Ω

AC magneto

Standard output 14.0 V, 260 W 5000 r/min
Stator coil resistance 0.32–0.48 Ω at 20 °C (68 °F)

Rectifier/regulator

Regulator type Semi conductor-short circuit
Regulated voltage (DC) 14.1–14.9 V
Rectifier capacity 25.0 A
Rectifier capacity (DC) 18.0 A
Withstand voltage 200.0 V

Battery

Model GTX9-BS
Voltage, capacity 12 V, 8.0 Ah
Manufacturer GS

Headlight

Bulb type Halogen bulb

Bulb voltage, wattage \times quantity

Low beam headlight 12 V, 55.0 W \times 1
High beam headlight 12 V, 55.0 W \times 1
Auxiliary light 12 V, 5.0 W \times 2
Tail/brake light 12 V, 5.0 W/21.0 W \times 2
Front turn signal light 12 V, 10.0 W \times 2
Rear turn signal light 12 V, 10.0 W \times 2
License plate light 12 V, 5.0 W \times 1
Meter lighting 12 V, 2.0 W \times 3

ELECTRICAL SPECIFICATIONS (YP250R)

Indicator lights

Turn signal indicator light	12 V, 1.4 W × 2
High beam indicator light	12 V, 1.4 W × 1
Engine trouble warning light	12 V, 1.4 W × 1
Immobilizer system indicator light	LED

Electric starting system

System type	Constant mesh
-------------	---------------

Starter motor

Power output	0.65 kW
Armature coil resistance	0.0100–0.0140 Ω
Brush overall length	9.0 mm (0.35 in)
Limit	3.00 mm (0.12 in)
Brush spring force	7.75 N (790 gf, 27.90 oz)
Commutator diameter	24.0 mm (0.94 in)
Limit	22.4 mm (0.88 in)
Mica undercut (depth)	1.00 mm (0.04 in)

Starter relay

Amperage	180.0 A
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Horn

Horn type	Plane
Quantity	1 pc
Maximum amperage	3.0 A
Coil resistance	1.4 Ω at 20 °C (68 °F)
Performance	105–118 dB/2m

Turn signal relay

Relay type	Full transistor
Built-in, self-canceling device	No
Turn signal flashing frequency	75–95 cycles/min
Wattage	21 W × 2.0 + 3.4 W

Fuel sender unit

Sender unit resistance (full)	20.0 Ω
Sender unit resistance (empty)	140.0 Ω

Starting circuit cut-off relay

Diode	Yes
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Fuses

Main fuse	30.0 A
Headlight fuse	15.0 A
Signaling system fuse	10.0 A
Ignition fuse	10.0 A
Radiator fan fuse	7.5 A
Turn signal/hazard fuse	10.0 A
ECU fuse	5.0 A
Backup fuse	5.0 A
Spare fuse	30.0 A

ELECTRICAL SPECIFICATIONS (YP250R)

Spare fuse	15.0 A
Spare fuse	10.0 A
Spare fuse	5.0 A
Spare fuse	7.5 A

TIGHTENING TORQUES (YP250R)

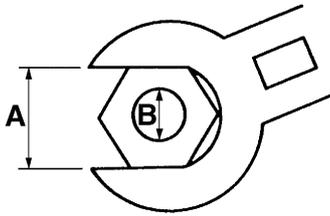
EAS20320

TIGHTENING TORQUES (YP250R)

EAS20330

GENERAL TIGHTENING TORQUE SPECIFICATIONS

This chart specifies tightening torques for standard fasteners with a standard ISO thread pitch. Tightening torque specifications for special components or assemblies are provided for each chapter of this manual. To avoid warpage, tighten multi-fastener assemblies in a crisscross pattern and progressive stages until the specified tightening torque is reached. Unless otherwise specified, tightening torque specifications require clean, dry threads. Components should be at room temperature.



- A. Distance between flats
- B. Outside thread diameter

A (nut)	B (bolt)	General tightening torques		
		Nm	m·kgf	ft·lbf
10 mm	6 mm	6	0.6	4.3
12 mm	8 mm	15	1.5	11
14 mm	10 mm	30	3.0	22
17 mm	12 mm	55	5.5	40
19 mm	14 mm	85	8.5	61
22 mm	16 mm	130	13.0	94

TIGHTENING TORQUES (YP250R)

EAS20340

ENGINE TIGHTENING TORQUES

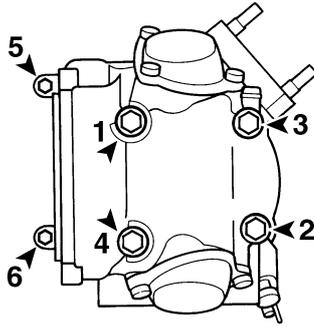
Item	Thread size	Q'ty	Tightening torque	Remarks
Exhaust pipe nut	M8	2	20 Nm (2.0 m·kgf, 14 ft·lbf)	
Muffler bolt	M10	3	53 Nm (5.3 m·kgf, 38 ft·lbf)	
Muffler joint bolt	M8	1	14 Nm (1.4 m·kgf, 10 ft·lbf)	
O ₂ sensor	M18	1	45 Nm (4.5 m·kgf, 32 ft·lbf)	
Oil check bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Tappet cover bolt	M6	5	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Cylinder head nut	M8	4	22 Nm (2.2 m·kgf, 16 ft·lbf)	
Cylinder head bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Cylinder head stud bolt	M8	4	13 Nm (1.3 m·kgf, 9.4 ft·lbf)	
Exhaust pipe stud bolt	M8	2	13 Nm (1.3 m·kgf, 9.4 ft·lbf)	
Timing chain tensioner bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Timing chain tensioner cap bolt	M8	1	8 Nm (0.8 m·kgf, 5.8 ft·lbf)	
Spark plug	M12	1	18 Nm (1.8 m·kgf, 13 ft·lbf)	
Coolant temperature sensor	M12	1	18 Nm (1.8 m·kgf, 13 ft·lbf)	
Camshaft sprocket cover bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Camshaft sprocket bolt	M10	1	60 Nm (6.0 m·kgf, 43 ft·lbf)	
Camshaft retainer bolt	M6	2	8 Nm (0.8 m·kgf, 5.8 ft·lbf)	
Valve clearance adjusting screw locknut	M6	2	14 Nm (1.4 m·kgf, 10 ft·lbf)	
V-belt case cover bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
V-belt case cover screw	M6	3	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
V-belt case bolt	M6	11	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Primary sheave nut	M14	1	80 Nm (8.0 m·kgf, 58 ft·lbf)	
Secondary sheave nut	M14	1	60 Nm (6.0 m·kgf, 43 ft·lbf)	
Secondary sheave bracket bolt	M8	4	22 Nm (2.2 m·kgf, 16 ft·lbf)	
Primary sheave cap bolt	M4	4	3 Nm (0.3 m·kgf, 2.2 ft·lbf)	
Clutch carrier nut	M36	1	90 Nm (9.0 m·kgf, 65 ft·lbf)	
Timing mark accessing plug	M16	1	8 Nm (0.8 m·kgf, 5.8 ft·lbf)	
Generator cover bolt	M6	10	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Stator coil bolt	M6	3	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Crankshaft position sensor bolt	M5	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Generator rotor nut	M16	1	80 Nm (8.0 m·kgf, 58 ft·lbf)	
Starter clutch bolt	M8	3	30 Nm (3.0 m·kgf, 22 ft·lbf)	
Starter motor bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Starter motor bush holder set nut	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Starter motor front cover bolt	M5	2	5 Nm (0.5 m·kgf, 3.6 ft·lbf)	
Oil baffle plate bolt	M6	2	12 Nm (1.2 m·kgf, 8.7 ft·lbf)	

TIGHTENING TORQUES (YP250R)

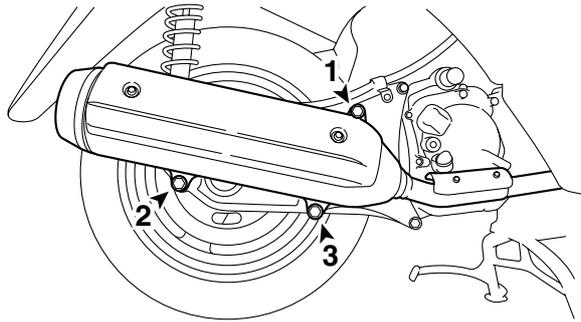
Item	Thread size	Q'ty	Tightening torque	Remarks
Oil pump assembly bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Transmission case cover bolt	M8	6	16 Nm (1.6 m·kgf, 11 ft·lbf)	
Oil strainer cover	M35	1	32 Nm (3.2 m·kgf, 23 ft·lbf)	
Engine oil drain bolt	M12	1	20 Nm (2.0 m·kgf, 14 ft·lbf)	
Final transmission oil drain bolt	M8	1	22 Nm (2.2 m·kgf, 16 ft·lbf)	
Crankcase bolt	M6	9	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Timing chain guide bolt (intake side)	M6	1	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Air bleed bolt (thermostat cover)	M4	1	3 Nm (0.3 m·kgf, 2.2 ft·lbf)	
Thermostat cover bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Water pump housing bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Water pump housing cover bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Coolant drain bolt (water pump)	M6	1	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Water pump outlet pipe bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Fuel injector assembly bolt	M6	1	12 Nm (1.2 m·kgf, 8.7 ft·lbf)	
Fuel injector assembly holder bolt	M6	1	12 Nm (1.2 m·kgf, 8.7 ft·lbf)	
Intake air pressure sensor bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Intake air pressure sensor bracket bolt	M6	1	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Intake manifold bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Throttle body clamp screw	M4	1	3 Nm (0.3 m·kgf, 2.2 ft·lbf)	
Throttle cable bracket bolt	M5	2	5 Nm (0.5 m·kgf, 3.6 ft·lbf)	
Air filter case mounting bolt	M6	2	9 Nm (0.9 m·kgf, 6.5 ft·lbf)	

TIGHTENING TORQUES (YP250R)

Cylinder head tightening sequence:



Muffler tightening sequence:



TIGHTENING TORQUES (YP250R)

EAS20350

CHASSIS TIGHTENING TORQUES

Item	Thread size	Q'ty	Tightening torque	Remarks
Engine bracket nut	M12	2	59 Nm (5.9 m·kgf, 43 ft·lbf)	
Engine bracket rod nut	M10	2	64 Nm (6.4 m·kgf, 46 ft·lbf)	
Engine mounting nut	M10	1	43 Nm (4.3 m·kgf, 31 ft·lbf)	
Radiator bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Filler neck bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Coolant reservoir bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Radiator bracket nut	M6	4	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Fuel tank bolt	M6	3	14 Nm (1.4 m·kgf, 10 ft·lbf)	
Fuel tank bracket bolt	M6	4	13 Nm (1.3 m·kgf, 9.4 ft·lbf)	
Seat nut	M6	4	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Seat hinge and storage box nut	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Seat hinge spring guide bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Storage box bolt	M6	2	11 Nm (1.1 m·kgf, 8.0 ft·lbf)	
Grab bar bolt	M8	4	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Center panel bolt	M6	6	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Rear panel bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Mudguard bolt	M6	3	11 Nm (1.1 m·kgf, 8.0 ft·lbf)	
Rear fender bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Front cowling assembly bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Battery box bolt	M6	1	11 Nm (1.1 m·kgf, 8.0 ft·lbf)	
Battery holder bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Battery bracket bolt	M8	4	30 Nm (3.0 m·kgf, 22 ft·lbf)	
Windshield bracket bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Windshield bracket bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Bottom cover bolt	M6	2	11 Nm (1.1 m·kgf, 8.0 ft·lbf)	
Storage compartment bolt	M6	1	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Footrest board bolt	M6	6	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Sidestand nut	M10	1	56 Nm (5.6 m·kgf, 40 ft·lbf)	
Sidestand switch nut	M5	2	8 Nm (0.8 m·kgf, 5.8 ft·lbf)	
Front fender bolt	M6	4	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Front wheel axle	M14	1	70 Nm (7.0 m·kgf, 50 ft·lbf)	
Front wheel axle pinch bolt	M8	1	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Front brake disc bolt	M6	5	12 Nm (1.2 m·kgf, 8.7 ft·lbf)	
Rear wheel axle nut	M14	1	135 Nm (13.5 m·kgf, 98 ft·lbf)	
Rear brake disc bolt	M8	4	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Front brake caliper bolt	M8	2	40 Nm (4.0 m·kgf, 29 ft·lbf)	
Front brake hose union bolt	M10	2	23 Nm (2.3 m·kgf, 17 ft·lbf)	

TIGHTENING TORQUES (YP250R)

Item	Thread size	Q'ty	Tightening torque	Remarks
Front brake hose holder bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Front brake caliper bleed screw	M7	1	6 Nm (0.6 m·kgf, 4.3 ft·lbf)	
Front brake pad pin cap	M8	1	3 Nm (0.3 m·kgf, 2.2 ft·lbf)	
Front brake pad pin	M8	1	18 Nm (1.8 m·kgf, 13 ft·lbf)	
Front brake caliper retaining pin	M8	1	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Front brake caliper retaining pin	M8	1	13 Nm (1.3 m·kgf, 9.4 ft·lbf)	
Rear brake caliper bolt	M10	3	40 Nm (4.0 m·kgf, 29 ft·lbf)	
Rear brake hose union bolt	M10	2	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Rear brake hose holder bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Rear brake caliper bleed screw	M7	1	6 Nm (0.6 m·kgf, 4.3 ft·lbf)	
Rear brake caliper retaining bolt	M10	2	27 Nm (2.7 m·kgf, 19 ft·lbf)	
Upper handlebar holder bolt	M8	4	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Front and rear brake master cylinder holder bolt	M6	4	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Front and rear brake lever nut	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
Grip end	M16	2	26 Nm (2.6 m·kgf, 19 ft·lbf)	
Steering stem nut	M20	1	120 Nm (12 m·kgf, 85 ft·lbf)	
Upper ring nut	M25	1	75 Nm (7.5 m·kgf, 54 ft·lbf)	See TIP.
Lower ring nut (initial tightening torque)	M25	1	38 Nm (3.8 m·kgf, 27 ft·lbf)	See TIP.
Lower ring nut (final tightening torque)	M25	1	22 Nm (2.2 m·kgf, 16 ft·lbf)	See TIP.
Speed sensor lead holder bracket bolt	M6	1	9 Nm (0.9 m·kgf, 6.5 ft·lbf)	
Lower bracket pinch bolt	M8	4	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Cap bolt	M29	2	45 Nm (4.5 m·kgf, 32 ft·lbf)	
Damper rod bolt	M10	2	30 Nm (3.0 m·kgf, 22 ft·lbf)	
Swingarm bolt	M10	2	59 Nm (5.9 m·kgf, 43 ft·lbf)	See TIP. 
Rear shock absorber assembly nut (upper side)	M10	2	32 Nm (3.2 m·kgf, 23 ft·lbf)	
Rear shock absorber assembly bolt (lower side)	M8	2	18 Nm (1.8 m·kgf, 13 ft·lbf)	
Ignition coil bolt	M6	2	10 Nm (1.0 m·kgf, 7.2 ft·lbf)	
ECU (engine control unit) bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Rectifier/regulator bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Battery terminal bolt	M6	2	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	
Horn bolt	M6	1	7 Nm (0.7 m·kgf, 5.1 ft·lbf)	

TIGHTENING TORQUES (YP250R)

TIP

Lower ring nut

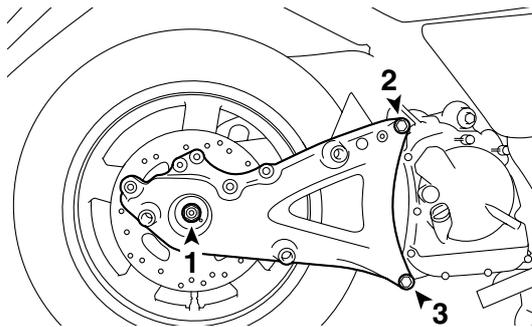
1. Tighten the lower ring nut 38 Nm (3.8 m·kgf, 27 ft·lbf) with a torque wrench and the steering nut wrench, and then loosen the nut 1/4 turn.
 2. Tighten the lower ring nut 22 Nm (2.2 m·kgf, 16 ft·lbf) with a torque wrench and the steering nut wrench.
 3. Install the rubber washer and the center ring nut.
 4. Finger tighten the center ring nut, align the slots of both ring nuts, and then install the lock washer.
 5. Hold the lower and center ring nuts, and then tighten the upper ring nut 75 Nm (7.5 m·kgf, 54 ft·lbf) with a torque wrench and the steering nut wrench.
-

TIP

Swingarm mounting bolt

1. Temporarily install the rear wheel axle nut "1".
 2. Temporarily install the swingarm mounting bolt (upper side) "2", then the swingarm mounting bolt (lower side) "3".
 3. Tighten the rear wheel axle nut to 135 Nm (13.5 m·kgf, 98 ft·lbf).
 4. Tighten the swingarm mounting bolt (upper side), then the swingarm mounting bolt (lower side) to 59 Nm (5.9 m·kgf, 43 ft·lbf).
-

Swingarm tightening sequence:



LUBRICATION POINTS AND LUBRICANT TYPES (YP250R)

EAS20360

LUBRICATION POINTS AND LUBRICANT TYPES (YP250R)

EAS20370

ENGINE

Lubrication point	Lubricant
Oil seal lips	
O-rings	
Bearings	
Cylinder head nut mounting surface	
Crankshaft pin	
Connecting rod big end thrust surface	
Rotary filter inner surface	
Oil pump drive gear inner surface	
Camshaft sprocket inner surface	
Piston pin and connecting rod small end	
Piston, piston rings, and cylinder inner surface	
Camshaft lobes	
Valve stems (intake and exhaust)	
Valve stem ends (intake and exhaust)	
Rocker arm shafts	
Rocker arm inner surface	
Impeller shaft gear	
Oil pump shaft	
Oil pump rotors (inner and outer)	
Oil pump gasket	
Engine mounting collars	
Starter clutch idle gear thrust surface	
Starter clutch idle gear shaft	
Starter clutch gear thrust surface	
Starter clutch gear inner surface	
Main axle thrust surfaces	
Main axle serration	
Drive axle serration	
Oil seal (secondary sliding sheave)	BEL-RAY assembly lube®
O-ring and collar (clutch housing)	BEL-RAY assembly lube®
Crankcase mating surfaces	Yamaha bond No.1215

LUBRICATION POINTS AND LUBRICANT TYPES (YP250R)

Lubrication point	Lubricant
Crankshaft position sensor/stator assembly lead grommet	Yamaha bond No. 1215

LUBRICATION POINTS AND LUBRICANT TYPES (YP250R)

EAS20380

CHASSIS

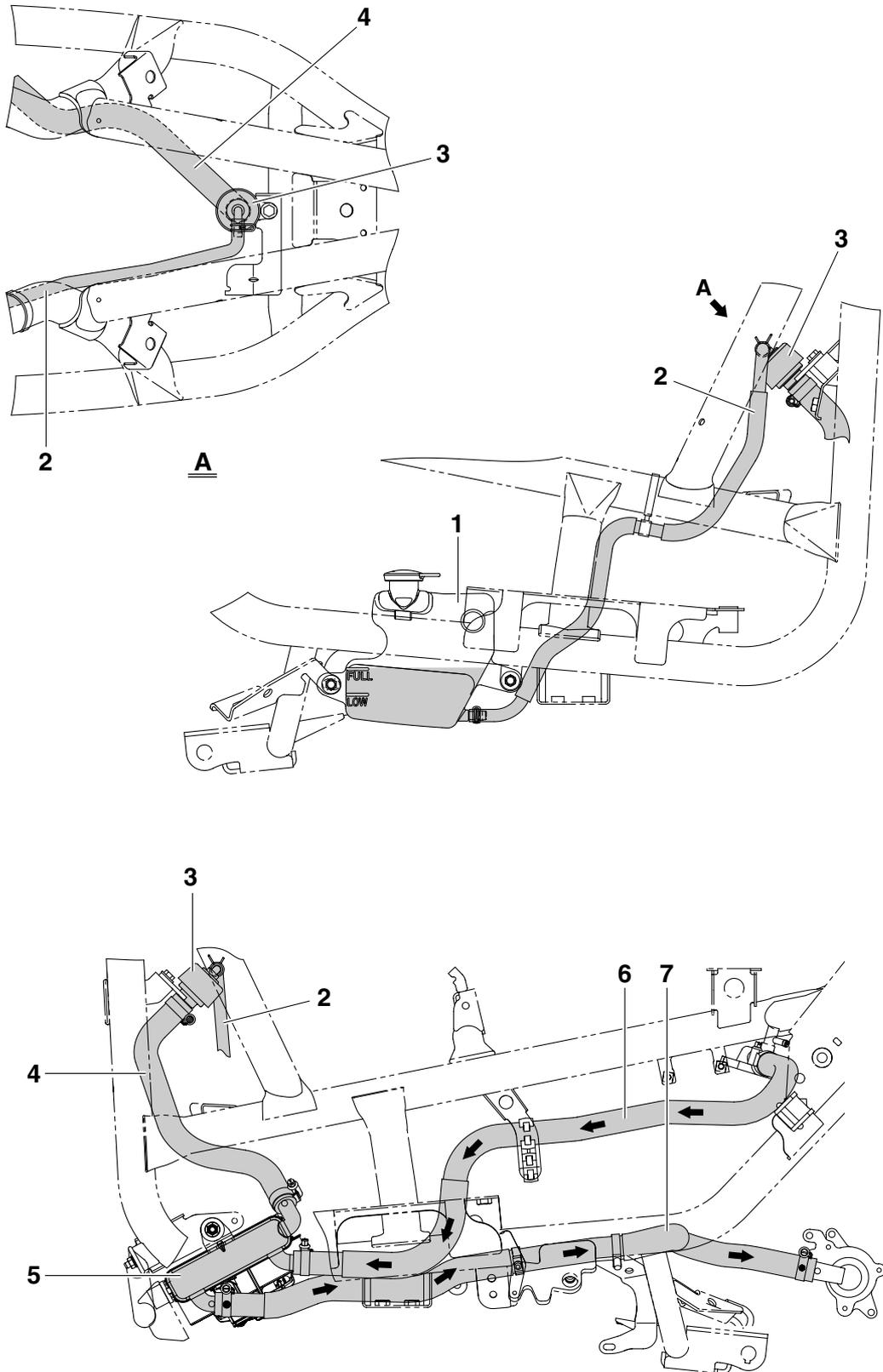
Lubrication point	Lubricant
Drive axle	
Swingarm oil seal lips	
Steering bearings (upper and lower)	
Seat hinge pin	
Front wheel oil seal lip and front wheel axle	
Speed sensor oil seal lip	
Brake lever pivoting point and metal-to-metal moving parts	
Rear brake caliper retaining bolt	
Throttle cable end	
Throttle grip inner surface and throttle cables	
Handlebar grip inner surface	Rubber adhesive
Sidestand pivoting point and metal-to-metal moving parts	
Sidestand spring hook metal-to-metal moving parts	
Centerstand shaft pivoting point and metal-to-metal moving parts	
Centerstand spring hook metal-to-metal moving parts	
Passenger footrest pivoting point	

LUBRICATION POINTS AND LUBRICANT TYPES (YP250R)

COOLING SYSTEM DIAGRAMS (YP250R)

EAS20420

COOLING SYSTEM DIAGRAMS (YP250R)



COOLING SYSTEM DIAGRAMS (YP250R)

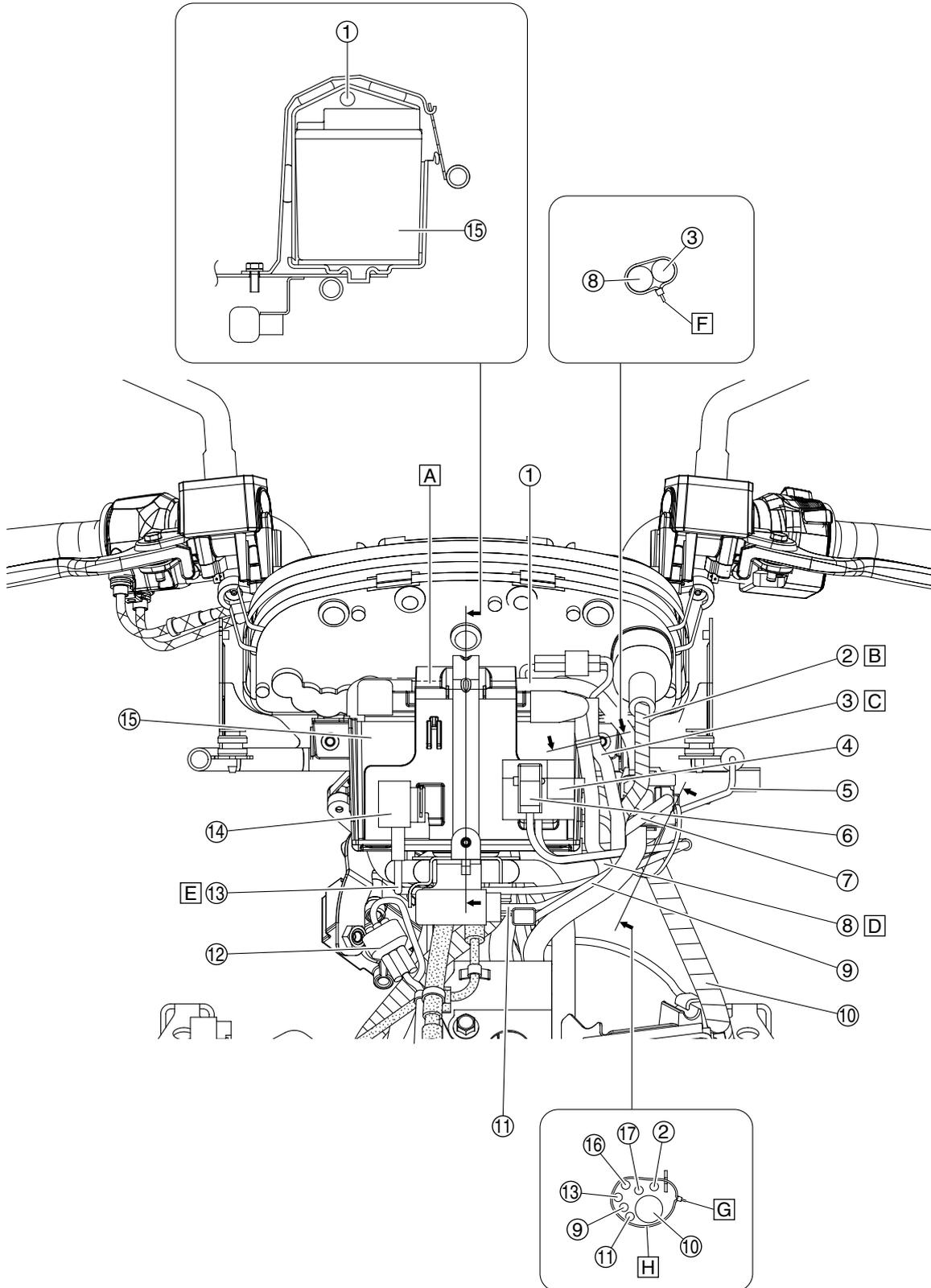
1. Coolant reservoir
2. Coolant reservoir hose
3. Radiator cap
4. Radiator filler hose
5. Radiator
6. Radiator inlet hose
7. Radiator outlet hose

CABLE ROUTING (YP250R)

EAS20430

CABLE ROUTING (YP250R)

Battery (front view)

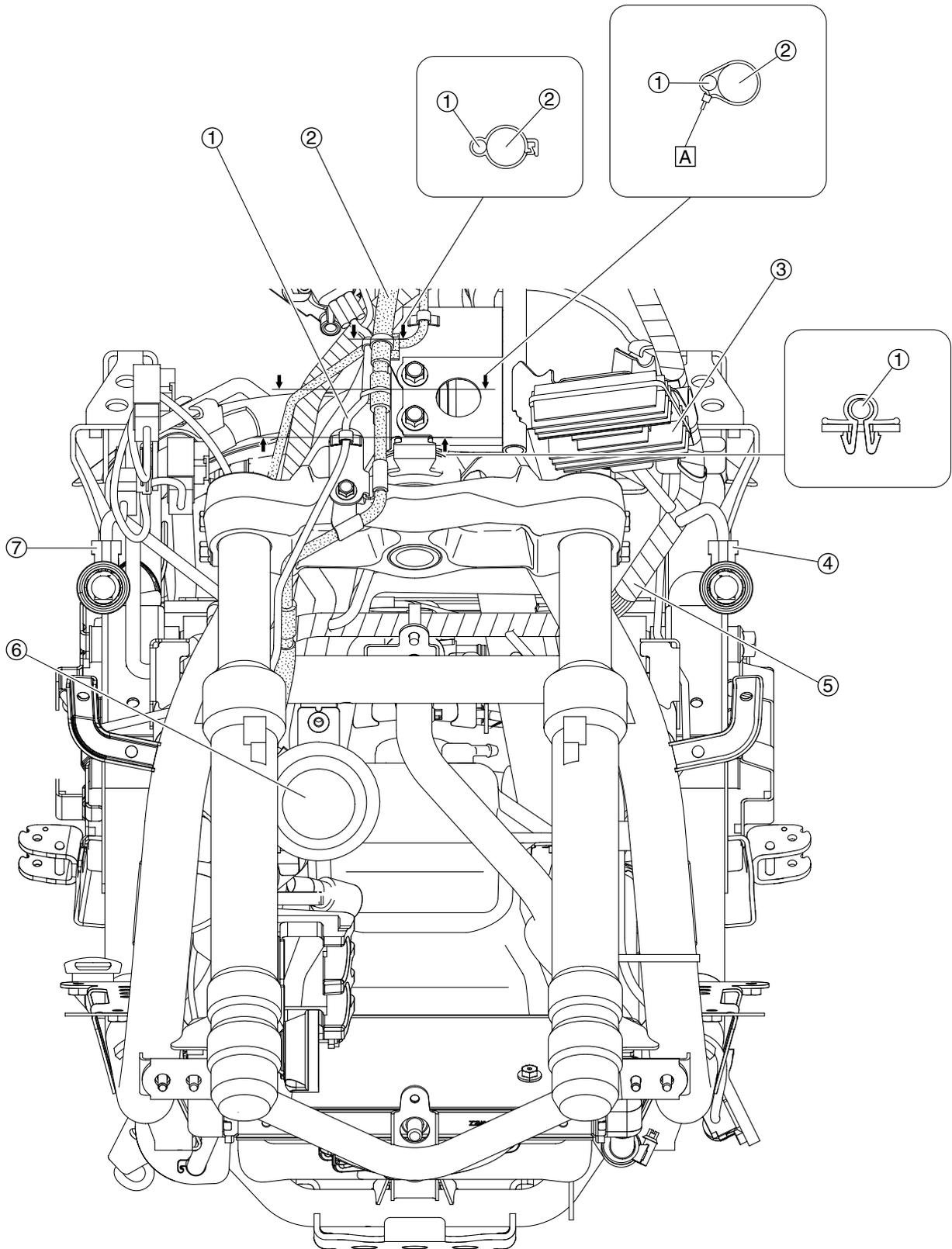


CABLE ROUTING (YP250R)

1. Positive battery lead
 2. Meter assembly lead
 3. Self-diagnosis signal lead
 4. Fuse box 1
 5. Air temperature sensor lead
 6. Fuse box 2
 7. Starter relay lead
 8. Negative battery lead
 9. Headlight lead
 10. Wire harness
 11. Lean angle sensor lead
 12. Speed sensor coupler
 13. Turn signal/hazard relay lead
 14. Turn signal/hazard relay
 15. Battery
 16. Fuse box 2 lead
 17. Fuse box 1 lead
- A. Route the positive battery lead under the battery cover.
 - B. Route the meter assembly lead to the front of the starter relay.
 - C. Route the self-diagnosis signal lead along the negative battery lead.
 - D. Route the negative battery lead to the rear of the turn signal/hazard relay lead, lean angle sensor lead, and headlight lead.
 - E. Route the turn signal/hazard relay lead to the rear of the lean angle sensor.
 - F. Point the end of the plastic locking tie forward, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).
 - G. Point the end of the plastic locking tie upward, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).
 - H. Fasten the wire harness and the other leads with a plastic locking tie, making sure to align the tie with the white tape on the harness.

CABLE ROUTING (YP250R)

Front fork (front view)

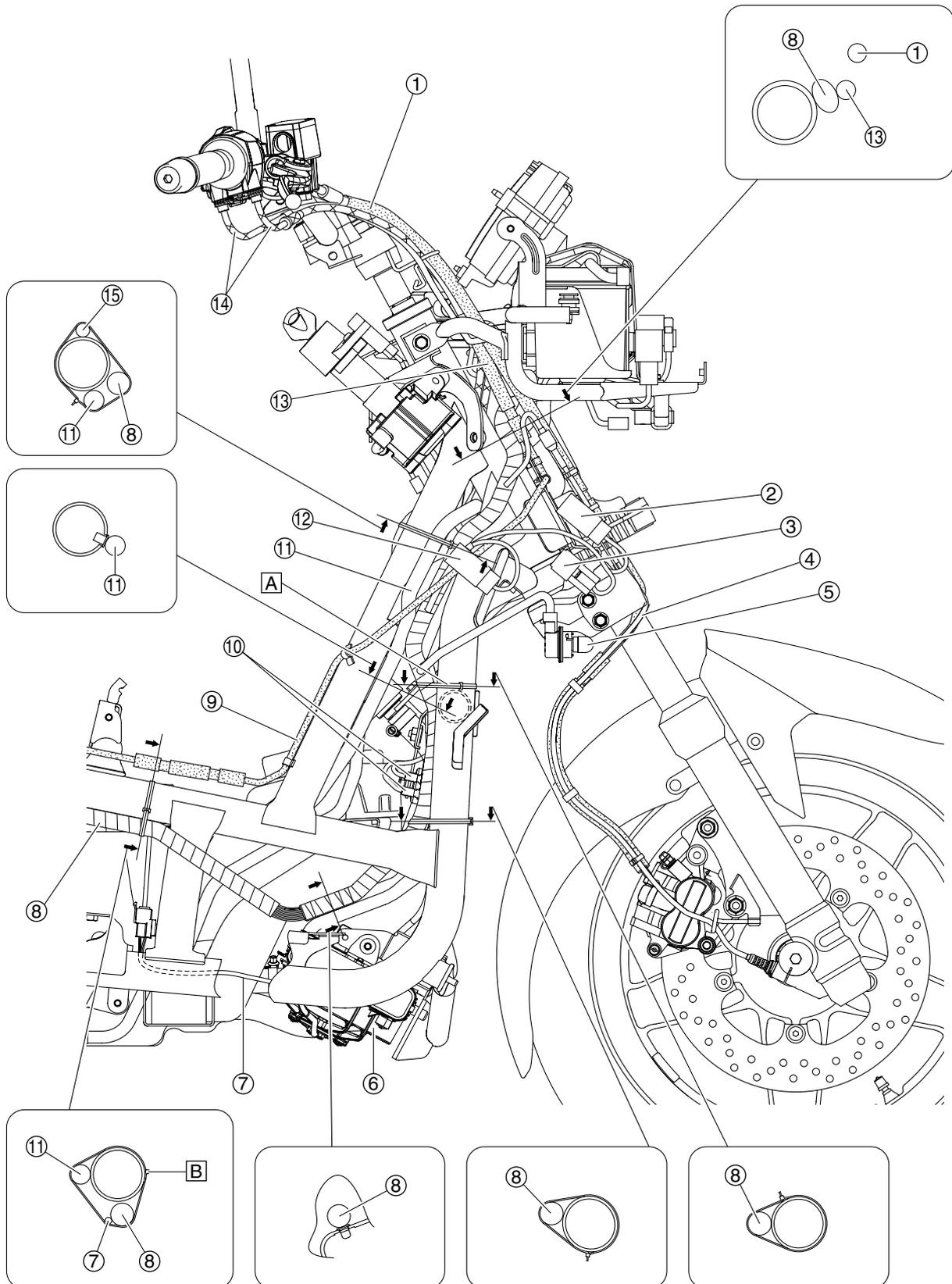


CABLE ROUTING (YP250R)

1. Speed sensor lead
2. Front brake hose
3. Rectifier/regulator
4. Left front turn signal light coupler
5. Wire harness
6. Horn
7. Right front turn signal light coupler
- A. Point the end of the plastic locking tie forward, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).

CABLE ROUTING (YP250R)

Front brake hose (right side view)

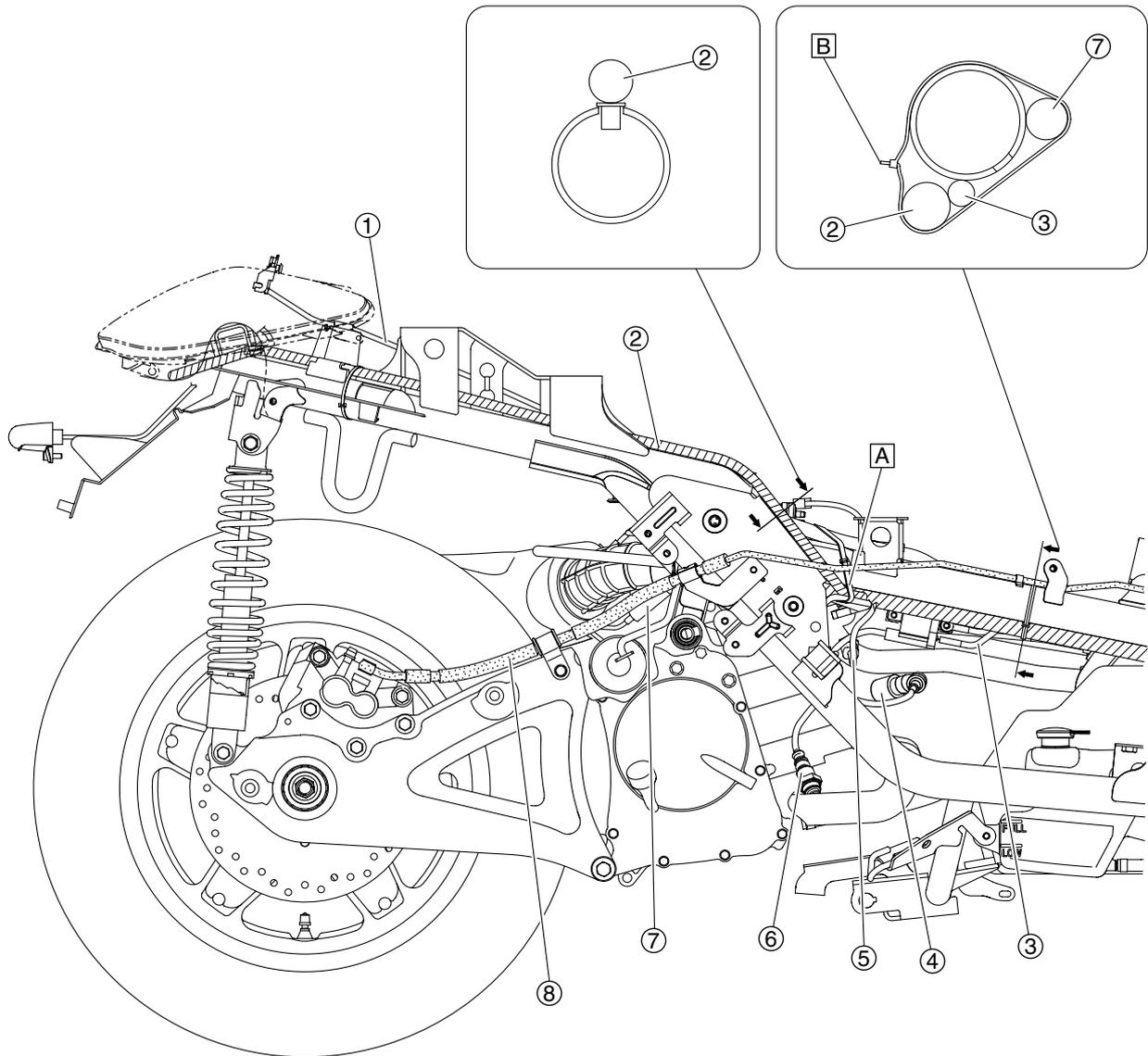


CABLE ROUTING (YP250R)

1. Front brake hose
 2. Radiator fan motor relay
 3. Starting circuit cut-off relay
 4. Speed sensor lead
 5. Right front turn signal light
 6. Radiator fan motor
 7. Radiator fan motor lead
 8. Wire harness
 9. Rear brake pipe
 10. Horn leads
 11. Starter motor lead
 12. Headlight relay
 13. Rear brake hose
 14. Throttle cables
 15. Main switch/immobilizer unit lead
- A. Position the plastic locking tie above the frame cross member.
 - B. Point the end of the plastic locking tie to the right, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).

CABLE ROUTING (YP250R)

Engine (right side view)



CABLE ROUTING (YP250R)

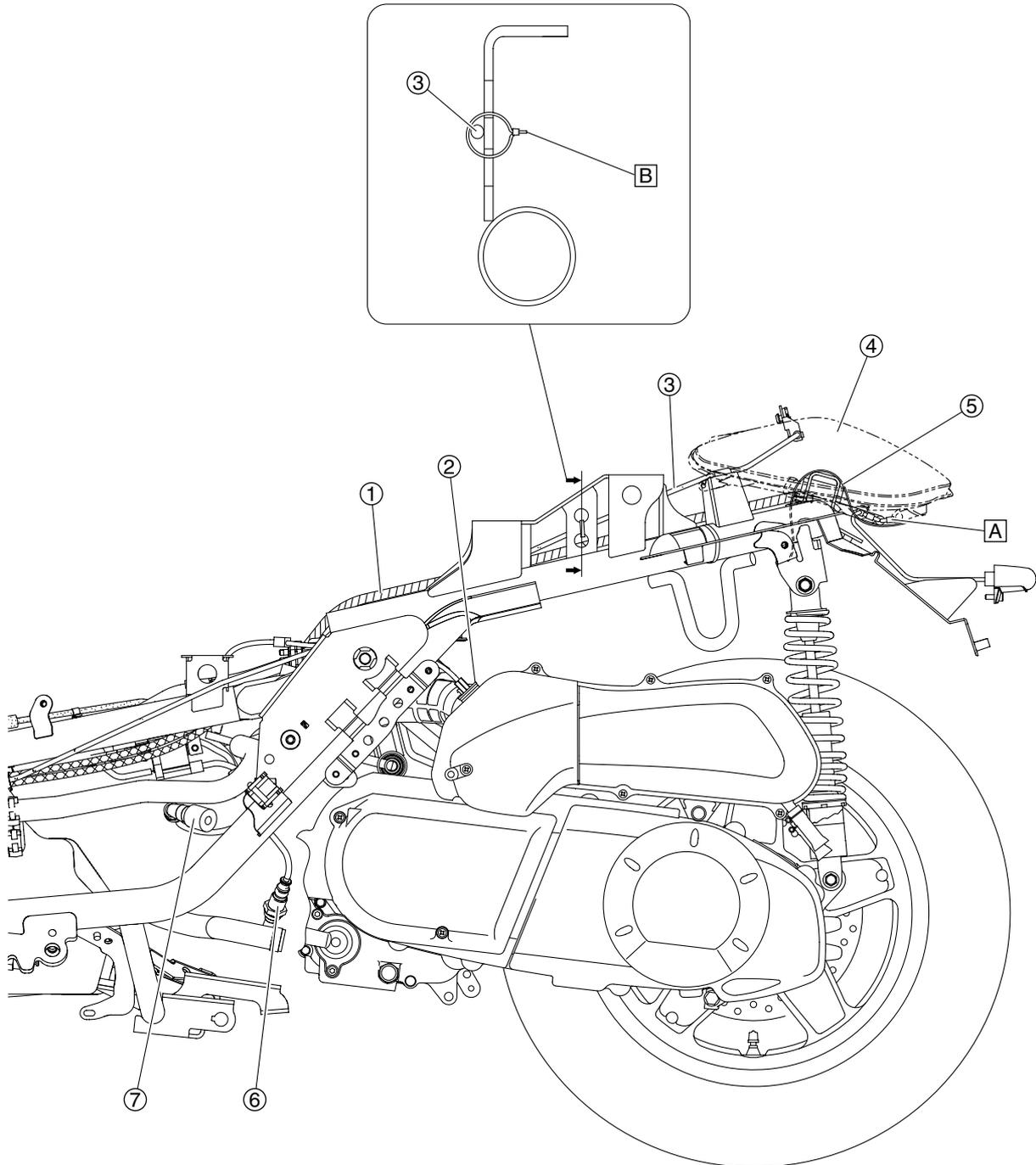
1. Seat lock cable
2. Wire harness
3. Ignition coil lead
4. Spark plug cap
5. Coolant temperature sensor lead
6. O₂ sensor
7. Starter motor lead
8. Rear brake hose
- A. Fasten the wire harness, starter motor lead, crankshaft position sensor/stator assembly lead, and O₂ sensor lead with a plastic locking tie.
- B. Point the end of the plastic locking tie to the right, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).

CABLE ROUTING (YP250R)

1. Meter assembly
 2. ECU (engine control unit)
 3. Seat lock cable
 4. Immobilizer unit coupler
 5. Throttle cables
 6. Wire harness
 7. Sidestand switch lead
 8. Rear brake hose
 9. Front brake hose
 10. Left front turn signal light lead
 11. Rectifier/regulator
 12. Starter motor lead
 13. Headlight coupler
 14. Air temperature sensor lead
 15. Immobilizer unit lead
 16. Main switch lead
 17. Connector cover
- A. Route the sidestand switch lead to the outside of the rear brake pipe.
 - B. Route the sidestand switch lead to the inside of the frame.
 - C. Route the sidestand switch lead to the outside of the frame.
 - D. Position the connector cover as shown in the illustration.
 - E. Forward
 - F. Fasten the wire harness at the white tape with the holder.
 - G. Point the end of the plastic locking tie to the right, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).
 - H. Point the end of the plastic locking tie forward.
 - I. Point the end of the plastic locking tie to the left, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).
 - J. Install the air temperature sensor so that there is some slack in the air temperature sensor lead.

CABLE ROUTING (YP250R)

Engine (left side view)

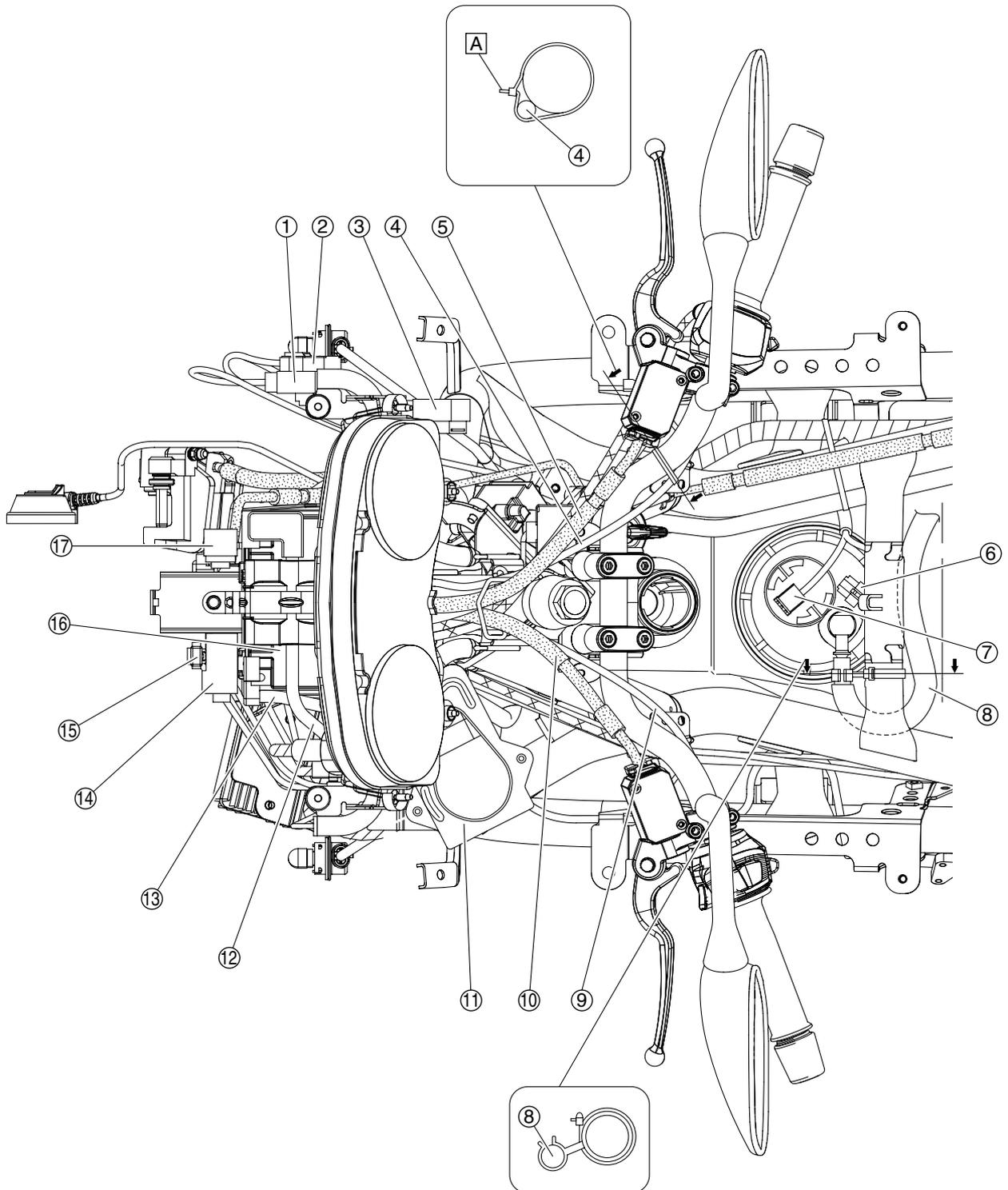


CABLE ROUTING (YP250R)

1. Wire harness
2. Intake air temperature sensor
3. Seat lock cable
4. Left tail/brake light assembly
5. Safety protector
6. O₂ sensor
7. Spark plug cap
- A. Route the left tail/brake light assembly lead and right tail/brake light assembly lead over the safety protector.
- B. Point the end of the plastic locking tie to the left, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).

CABLE ROUTING (YP250R)

Handlebar (top view)

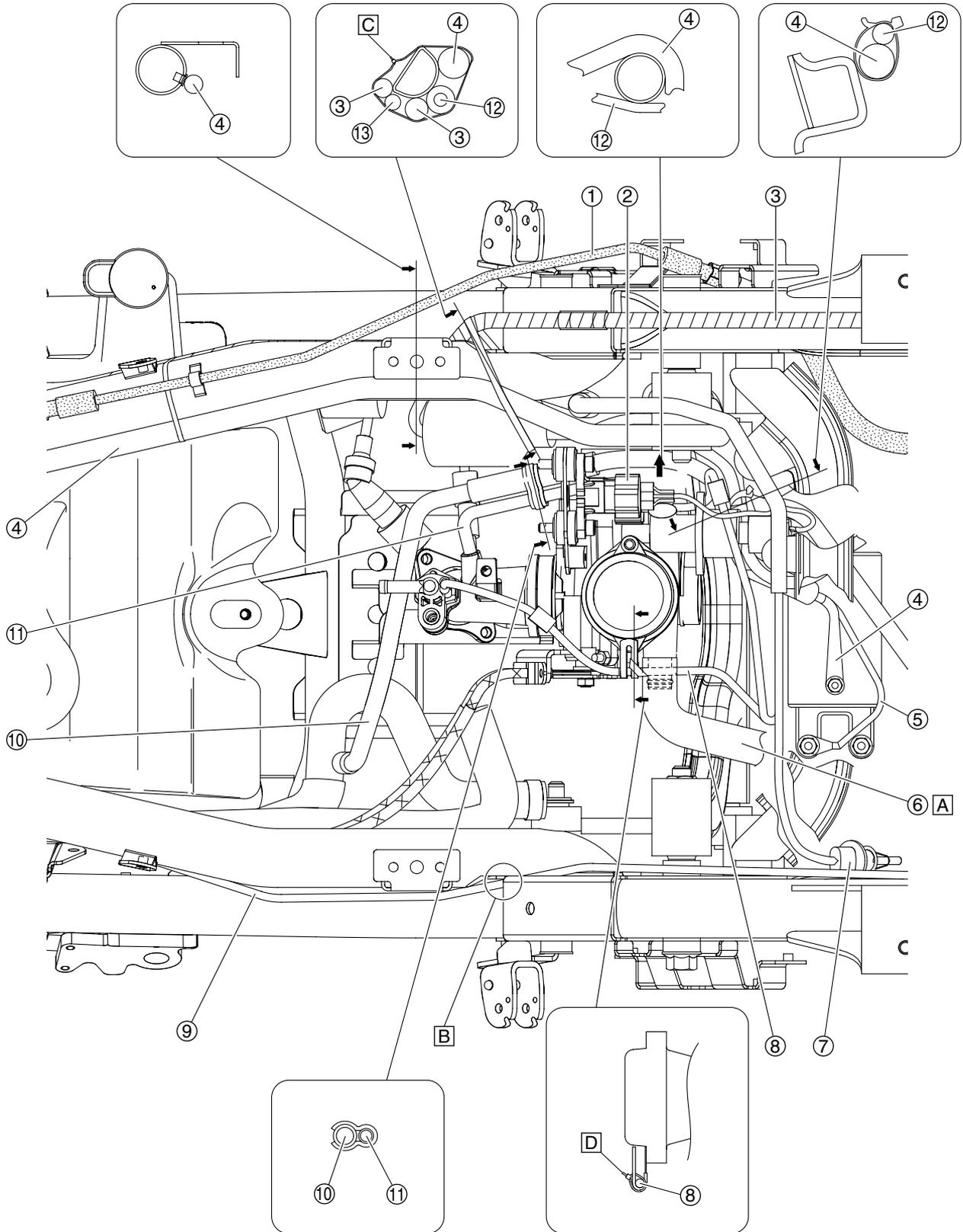


CABLE ROUTING (YP250R)

1. Radiator fan motor relay
 2. Starting circuit cut-off relay
 3. Headlight relay
 4. Right handlebar switch lead
 5. Front brake hose
 6. Fuel pump coupler
 7. Fuel sender coupler
 8. Fuel hose
 9. Left handlebar switch lead
 10. Rear brake hose
 11. ECU (engine control unit)
 12. Positive battery lead
 13. Negative battery lead
 14. Fuse box 1
 15. Fuse box 2
 16. Battery
 17. Turn signal/hazard relay
- A. Point the end of the plastic locking tie to the left, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).

CABLE ROUTING (YP250R)

Throttle body (top view)

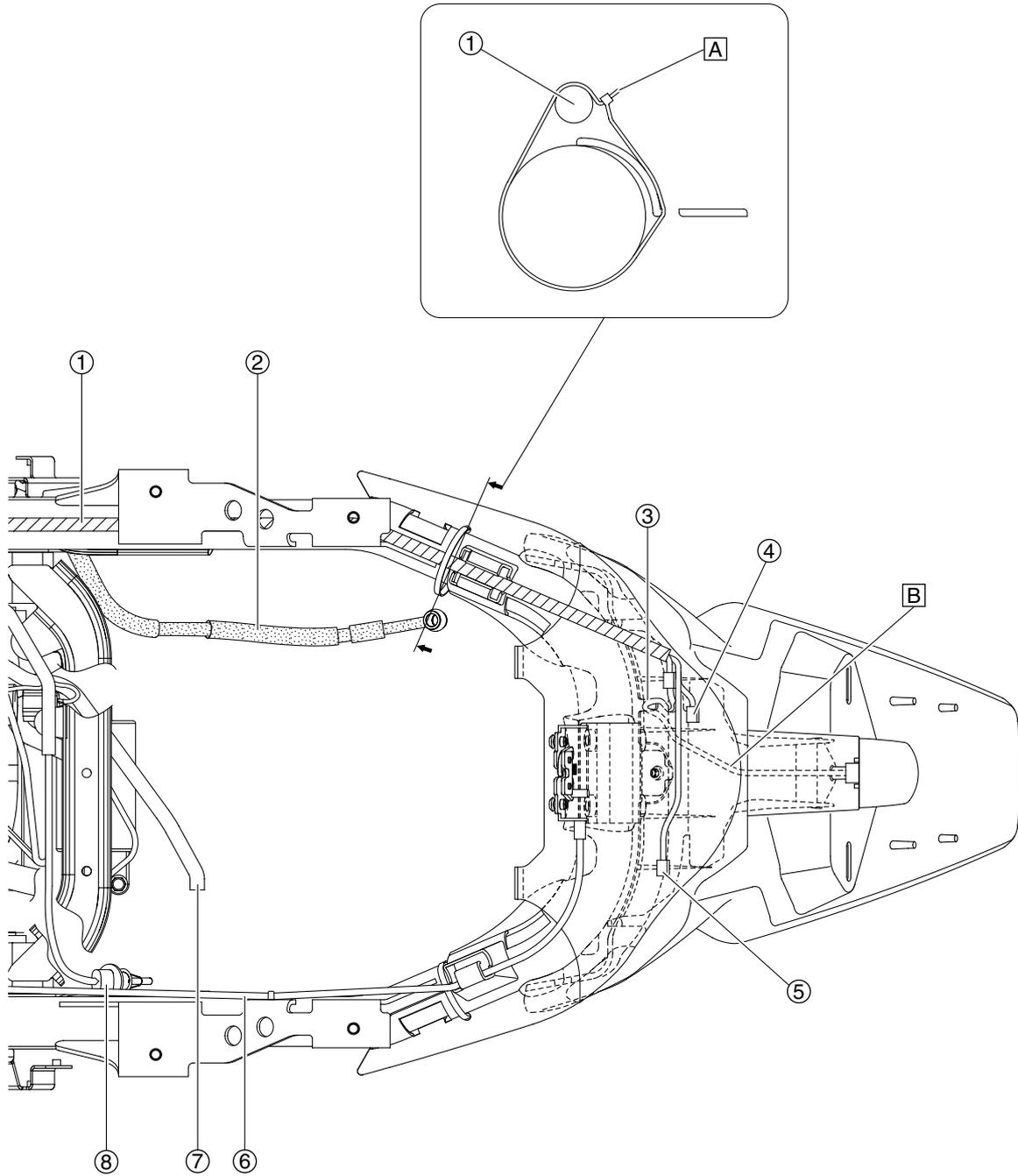


CABLE ROUTING (YP250R)

1. Rear brake pipe
 2. Intake air pressure sensor coupler
 3. Wire harness
 4. Starter motor lead
 5. Ground lead
 6. Breather hose (air filter case to throttle body)
 7. Intake air temperature sensor coupler
 8. Fuel injector lead
 9. Seat lock cable
 10. Cylinder head breather hose
 11. Intake air pressure sensor hose
 12. Crankshaft position sensor/stator assembly lead
 13. O₂ sensor lead
- A. Connect the breather hose (air filter case to throttle body) to the air filter case, making sure to turn the white paint marks on the hose upward.
 - B. Route the seat lock cable to the inside of the frame.
 - C. Point the end of the plastic locking tie to the right, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).
 - D. Fasten the fuel injector lead at the white tape with a plastic locking tie. Point the end of the plastic locking tie upward, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).

CABLE ROUTING (YP250R)

Tail/brake light (top view)



CABLE ROUTING (YP250R)

1. Wire harness
2. Rear brake hose
3. License plate light lead
4. Right tail/brake light assembly coupler
5. Left tail/brake light assembly coupler
6. Seat lock cable
7. Cylinder head breather hose
8. Intake air temperature sensor coupler
- A. Point the end of the plastic locking tie to the right, and then cut off the excess end of the tie to 0–5 mm (0–0.20 in).
- B. Route the license plate light lead between the water guard and the license plate light bracket.

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PERIODIC MAINTENANCE

EAS20450

PERIODIC MAINTENANCE

EAS20460

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.

EAS37P1069

PERIODIC MAINTENANCE CHART FOR THE EMISSION CONTROL SYSTEM (YP125R)

TIP

- The annual checks must be performed every year, except if a kilometer-based maintenance, or for the UK, a mileage-based maintenance, is performed instead.
- From 30000 km (17500 mi), repeat the maintenance intervals starting from 6000 km (3500 mi).
- 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					ANNUAL CHECK
			1000 km (600 mi)	6000 km (3500 mi)	12000 km (7000 mi)	18000 km (10500 mi)	24000 km (14000 mi)	
1	* Fuel line	• Check fuel hoses for cracks or damage.		√	√	√	√	√
2	Spark plug	• Check condition. • Clean and regap.		√		√		
		• Replace.			√		√	
3	* Valves	• Check valve clearance. • Adjust.		√	√	√	√	
4	* Fuel injection	• Check engine idle speed.	√	√	√	√	√	√
5	* Muffler and exhaust pipe	• Check the screw clamp(s) for looseness.	√	√	√	√	√	

EAS37P1086

GENERAL MAINTENANCE AND LUBRICATION CHART (YP125R)

TIP

- The annual checks must be performed every year, except if a kilometer-based maintenance, or for the UK, a mileage-based maintenance is performed instead.
- From 30000 km (17500 mi), repeat the maintenance intervals starting from 6000 km (3500 mi).
- 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					ANNUAL CHECK
			1000 km (600 mi)	6000 km (3500 mi)	12000 km (7000 mi)	18000 km (10500 mi)	24000 km (14000 mi)	
1	Air filter element	• Replace.			√		√	
2	V-belt case air filter element	• Clean.		√	√	√	√	
3	* Front brake	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	√
		• Replace brake pads.	Whenever worn to the limit					
4	* Rear brake	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	√
		• Replace brake pads.	Whenever worn to the limit					

PERIODIC MAINTENANCE

NO.	ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					ANNUAL CHECK
			1000 km (600 mi)	6000 km (3500 mi)	12000 km (7000 mi)	18000 km (10500 mi)	24000 km (14000 mi)	
5 *	Brake hoses	• Check for cracks or damage.		√	√	√	√	√
		• Replace.	Every 4 years					
6 *	Wheels	• Check runout and for damage.		√	√	√	√	
7 *	Tires	• Check tread depth and for damage. • Replace if necessary. • Check air pressure. • Correct if necessary.		√	√	√	√	√
8 *	Wheel bearings	• Check bearing for looseness or damage.		√	√	√	√	
9 *	Steering bearings	• Check bearing play and steering for roughness.	√	√	√	√	√	
		• Lubricate with lithium-soap-based grease.	Every 24000 km (14000 mi)					
10 *	Chassis fasteners	• Make sure that all nuts, bolts and screws are properly tightened.		√	√	√	√	√
11	Front brake lever pivot shaft	• Lubricate with silicone grease.		√	√	√	√	√
12	Rear brake lever pivot shaft	• Lubricate with silicone grease.		√	√	√	√	√
13	Sidestand, center-stand	• Check operation. • Lubricate.		√	√	√	√	√
14 *	Sidestand switch	• Check operation.	√	√	√	√	√	√
15 *	Front fork	• Check operation and for oil leakage.		√	√	√	√	
16 *	Shock absorber assemblies	• Check operation and shock absorbers for oil leakage.		√	√	√	√	
17	Engine oil	• Change.	√	When the oil change indicator flashes [5000 km (3000 mi) after the initial 1000 km (600 mi) and every 6000 km (3500 mi) thereafter]				
		• Check oil level and vehicle for oil leakage.	Every 3000 km (1800 mi)					√
18	Engine oil filter element	• Replace.	√		√		√	
19 *	Cooling system	• Check coolant level and vehicle for coolant leakage.		√	√	√	√	√
		• Change.	Every 3 years					
20	Final transmission oil	• Check vehicle for oil leakage.	√	√		√		
		• Change.	√		√		√	
21 *	V-belt	• Replace.	When the V-belt replacement indicator flashes [every 18000 km (10500 mi)]					
22 *	Front and rear brake switches	• Check operation.	√	√	√	√	√	√
23	Moving parts and cables	• Lubricate.		√	√	√	√	√
24 *	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.		√	√	√	√	√
25 *	Lights, signals and switches	• Check operation. • Adjust headlight beam.	√	√	√	√	√	√

PERIODIC MAINTENANCE

EAS37P1070

TIP

- Engine air filter and V-belt air filter
 - This model's engine air filter is equipped with a disposable oil-coated paper element, which must not be cleaned with compressed air to avoid damaging it.
 - The engine air filter element needs to be replaced and the V-belt air filter element needs to be serviced more frequently when riding in unusually wet or dusty areas.
- Hydraulic brake service
 - After disassembling the brake master cylinders and calipers, always change the fluid. Regularly check the brake fluid levels and fill the reservoirs as required.
 - 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.

EAU46910

PERIODIC MAINTENANCE CHART FOR THE EMISSION CONTROL SYSTEM (YP250R)

TIP

- **The annual checks must be performed every year, except if a kilometer-based maintenance, or for the UK, a milage-based maintenance, is performed instead.**
- From 50000 km (30000 mi), repeat the maintenance intervals starting from 10000 km (6000 mi).
- 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					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.		√	√	√	√	√
2	Spark plug	• Check condition. • Clean and regap.		√		√		
		• Replace.			√		√	
3	* Valves	• Check valve clearance. • Adjust.			√		√	
4	* Fuel injection	• Check engine idle speed.	√	√	√	√	√	√
5	* Muffler and exhaust pipe	• Check the screw clamp(s) for looseness.	√	√	√	√	√	

EAU1770C

GENERAL MAINTENANCE AND LUBRICATION CHART (YP250R)

TIP

- **The annual checks must be performed every year, except if a kilometer-based maintenance, or for the UK, a milage-based maintenance is performed instead.**
- From 50000 km (30000 mi), repeat the maintenance intervals starting from 10000 km (6000 mi).
- 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					ANNUAL CHECK
			1000 km (600 mi)	10000 km (6000 mi)	20000 km (12000 mi)	30000 km (18000 mi)	40000 km (24000 mi)	
1	Air filter element	• Replace.			√		√	
2	V-belt case air filter element	• Clean.		√	√	√	√	

PERIODIC MAINTENANCE

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)	
3 *	Front brake	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	√
		• Replace brake pads.		Whenever worn to the limit				
4 *	Rear brake	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	√
		• Replace brake pads.		Whenever worn to the limit				
5 *	Brake hoses	• Check for cracks or damage.		√	√	√	√	√
		• Replace.		Every 4 years				
6 *	Wheels	• Check runout and for damage.		√	√	√	√	
7 *	Tires	• Check tread depth and for damage. • Replace if necessary. • Check air pressure. • Correct if necessary.		√	√	√	√	√
8 *	Wheel bearings	• Check bearing for looseness or damage.		√	√	√	√	
9 *	Steering bearings	• Check bearing play and steering for roughness.	√	√	√	√	√	
		• Lubricate with lithium-soap-based grease.		Every 20000 km (12000 mi)				
10 *	Chassis fasteners	• Make sure that all nuts, bolts and screws are properly tightened.		√	√	√	√	√
11	Front brake lever pivot shaft	• Lubricate with silicone grease.		√	√	√	√	√
12	Rear brake lever pivot shaft	• Lubricate with silicone grease.		√	√	√	√	√
13	Sidestand, center-stand	• Check operation. • Lubricate.		√	√	√	√	√
14 *	Sidestand switch	• Check operation.	√	√	√	√	√	√
15 *	Front fork	• Check operation and for oil leakage.		√	√	√	√	
16 *	Shock absorber assemblies	• Check operation and shock absorbers for oil leakage.		√	√	√	√	
17	Engine oil	• Change.	√	When the oil change indicator flashes [At 4000 km (2500 mi) and every 3000 km (1800 mi) thereafter]				
		• Check oil level and vehicle for oil leakage.		Every 3000 km (1800 mi)				
18 *	Engine oil strainer	• Clean.	√					
19 *	Cooling system	• Check coolant level and vehicle for coolant leakage.		√	√	√	√	√
		• Change.		Every 3 years				
20	Final transmission oil	• Check vehicle for oil leakage.	√	√		√		
		• Change.	√		√		√	
21 *	V-belt	• Replace.	When V-belt replacement indicator flashes [Every 20000 km (12000 mi)]					
22 *	Front and rear brake switches	• Check operation.	√	√	√	√	√	√
23	Moving parts and cables	• Lubricate.		√	√	√	√	√
24 *	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.		√	√	√	√	√
25 *	Lights, signals and switches	• Check operation. • Adjust headlight beam.	√	√	√	√	√	√

PERIODIC MAINTENANCE

EAU38262

TIP

- Engine air filter and V-belt air filters
 - This model's engine air filter is equipped with a disposable oil-coated paper element, which must not be cleaned with compressed air to avoid damaging it.
 - The engine air filter element needs to be replaced and the V-belt air filter element needs to be serviced more frequently when riding in unusually wet or dusty areas.
 - Hydraulic brake service
 - After disassembling the brake master cylinders and calipers, always change the fluid. Regularly check the brake fluid levels and fill the reservoirs as required.
 - 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.
-

EAS37P1087

ENGINE (YP125R)

EAS37P1088

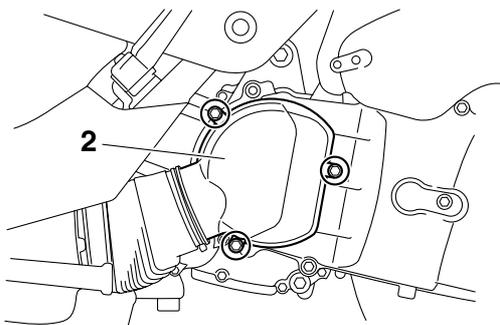
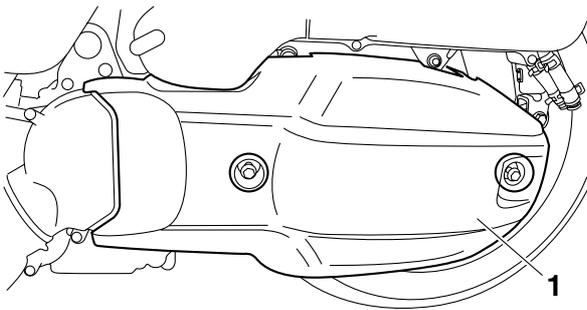
ADJUSTING THE VALVE CLEARANCE

The following procedure applies to all of the valves.

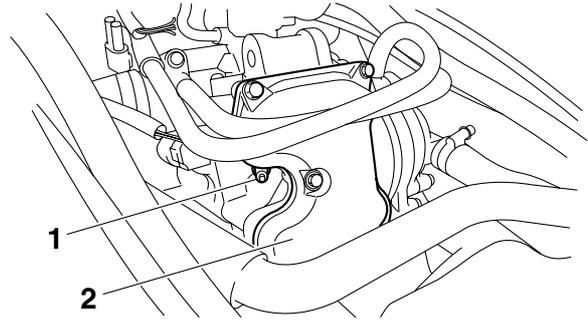
TIP

- Valve clearance adjustment should be made on a cold engine, at room temperature.
- When the valve clearance is to be measured or adjusted, the piston must be at top dead center (TDC) on the compression stroke.

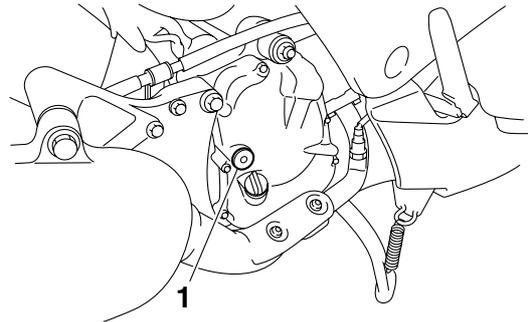
1. Remove:
 - Storage box
Refer to "GENERAL CHASSIS" on page 4-1.
2. Remove:
 - V-belt case cover "1"
 - V-belt case air duct "2"
 - V-belt case air filter element



3. Remove:
 - Spark plug cap
 - Spark plug "1"
 - Cylinder head cover "2"



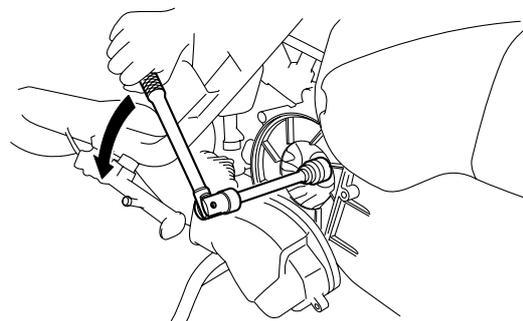
4. Remove:
 - Timing mark accessing plug "1"



5. Measure:
 - Valve clearance
Out of specification → Adjust.

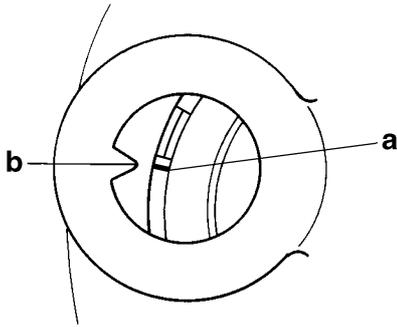
	Valve clearance (cold)
	Intake 0.10–0.14 mm (0.0039–0.0055 in)
	Exhaust 0.22–0.26 mm (0.0087–0.0102 in)

- a. Turn the primary sheave nut on the left side of the crankshaft counterclockwise to turn the crankshaft.

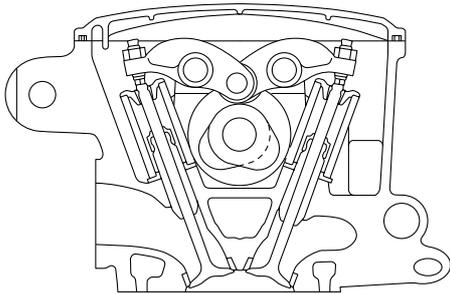


- b. Align the "1" mark "a" on the generator rotor with the stationary pointer "b" on the generator cover.

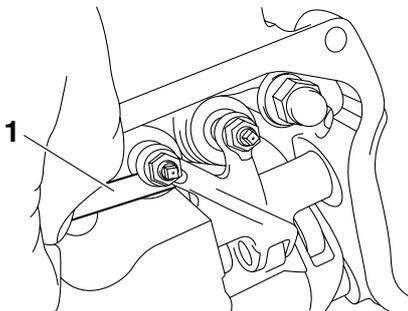
ENGINE (YP125R)



c. Check that the cam lobes are positioned as shown in the illustration.



d. Measure the valve clearance with a thickness gauge "1".
Out of specification → Adjust.

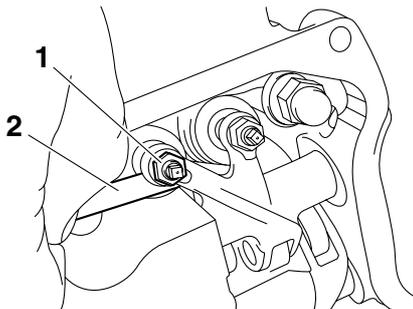


6. Adjust:

- Valve clearance

a. Loosen the locknut "1".

b. Insert a thickness gauge "2" between the end of the adjusting screw and the valve tip.



c. Turn the adjusting screw "3" in direction "a" or "b" with the tappet adjusting tool "4" until the specified valve clearance is obtained.

Direction "a"

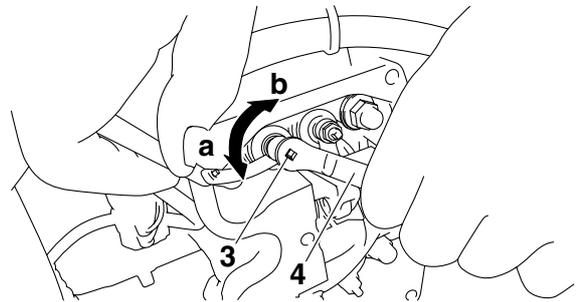
Valve clearance is increased.

Direction "b"

Valve clearance is decreased.



**Tappet adjusting tool
90890-01311
Six piece tappet set
YM-A5970**



d. Hold the adjusting screw to prevent it from moving and tighten the locknut to specification.



**Locknut (valve clearance adjusting screw)
7 Nm (0.7 m·kgf, 5.1 ft·lbf)**

e. Measure the valve clearance again.

f. If the valve clearance is still out of specification, repeat all of the valve clearance adjustment steps until the specified clearance is obtained.

7. Install:

- Timing mark accessing plug

(along with the O-ring **New**)

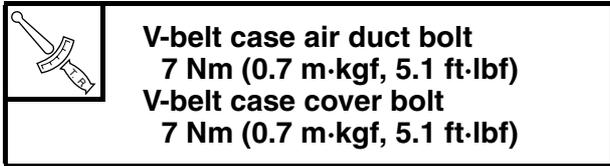
- Cylinder head cover gasket **New**
- Cylinder head cover
- Spark plug
- Spark plug cap



**Timing mark accessing plug
8 Nm (0.8 m·kgf, 5.8 ft·lbf)
Cylinder head cover bolt
10 Nm (1.0 m·kgf, 7.2 ft·lbf)
Spark plug
13 Nm (1.3 m·kgf, 9.4 ft·lbf)**

8. Install:

- V-belt case air filter element
- V-belt case air duct
- V-belt case cover



9. Install:

- Storage box
- Refer to “GENERAL CHASSIS” on page 4-1.

EAS37P1089

ADJUSTING THE EXHAUST GAS VOLUME

TIP

Be sure to set the CO density level to standard, and then adjust the exhaust gas volume.

1. Remove:

- Upper panel
- Refer to “GENERAL CHASSIS” on page 4-1.

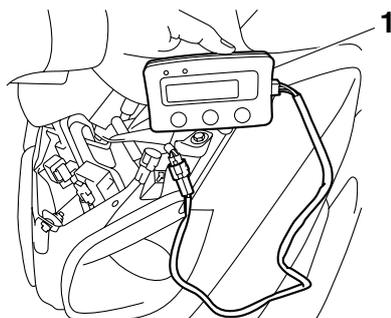
2. Set the main switch to “OFF”.

3. Disconnect:

- Self-diagnosis signal coupler

4. Connect:

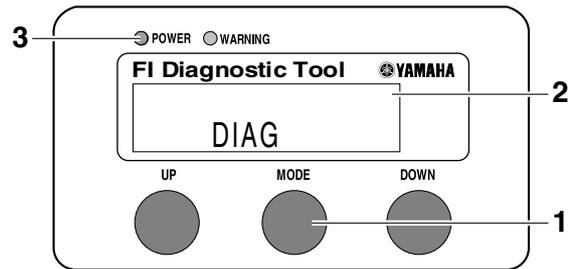
- FI diagnostic tool “1”



5. While pressing the “MODE” button “1”, set the main switch to “ON”.

TIP

- “DIAG” appears on the LCD “2” of the FI diagnostic tool.
- “POWER” LED (Green) “3” comes on.



6. Press the “UP” button to select the CO adjustment mode “CO” or the diagnostic mode “DIAG”.

7. After selecting “CO”, press the “MODE” button.

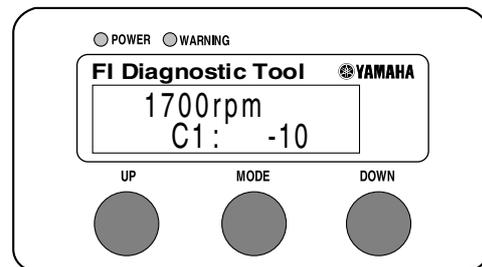
8. Check that “C1” appears on the LCD of the FI diagnostic tool, and then press the “MODE” button.

9. Start the engine.

ECA37P1042

NOTICE

Perform the adjustment after the battery has been sufficiently charged.



10. Change the CO adjustment volume by pressing the “UP” and “DOWN” buttons.

TIP

The CO adjustment volume and engine idling speed appears on the LCD of the FI diagnostic tool.

- To decrease the CO adjustment volume, press the “DOWN” button.
- To increase the CO adjustment volume, press the “UP” button.

11. Release the “DOWN” and “UP” buttons to execute the selection.

12. Set the main switch to “OFF” to cancel the mode.

13. Disconnect:

- FI diagnostic tool

14. Connect:

- Self-diagnosis signal coupler

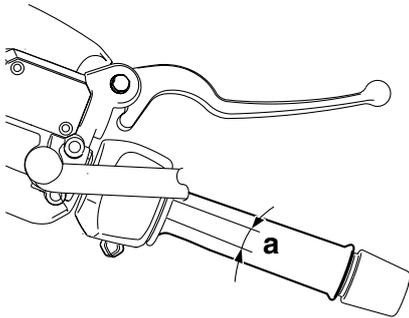
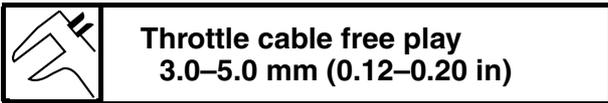
15. Install:

- Upper panel
Refer to "GENERAL CHASSIS" on page 4-1.

EAS37P1090

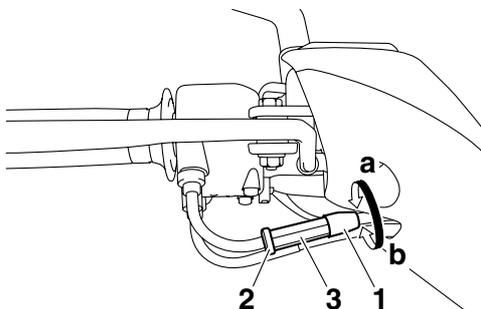
ADJUSTING THE THROTTLE CABLE FREE PLAY

1. Check:
 - Throttle cable free play "a"
Out of specification → Adjust.



2. Adjust:
 - Throttle cable free play

- a. Slide back the rubber cover "1".
- b. Loosen the locknut "2".
- c. Turn the adjusting nut "3" in direction "a" or "b" until the specified throttle cable free play is obtained.



- d. Tighten the locknut.
- e. Slide the rubber cover to its original position.

EWA12910

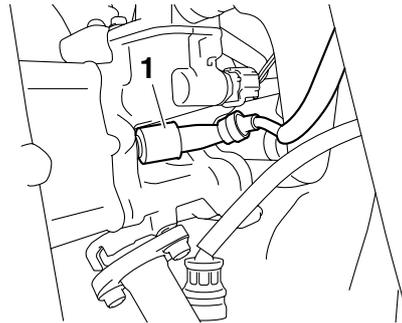


After adjusting the throttle cable free play, start the engine and turn the handlebar to the right and to the left to ensure that this does not cause the engine idling speed to change.

EAS37P1091

CHECKING THE SPARK PLUG

1. Disconnect:
 - Spark plug cap "1"



2. Remove:
 - Spark plug

ECA13330



Before removing the spark plug, blow away any dirt accumulated in the spark plug well with compressed air to prevent it from falling into the cylinder.

3. Check:
 - Spark plug type
Incorrect → Change.



Manufacturer/model
NGK/CPR9EA-9

4. Check:
 - Electrode "1"
Damage/wear → Replace the spark plug.
 - Insulator "2"
Abnormal color → Replace the spark plug.
Normal color is medium-to-light tan.
5. Clean:
 - Spark plug
(with a spark plug cleaner or wire brush)
6. Measure:
 - Spark plug gap "a"
(with a wire thickness gauge)
Out of specification → Regap.



Spark plug gap
0.8-0.9 mm (0.031-0.035 in)

EAS37P1093

MEASURING THE COMPRESSION PRESSURE

TIP

Insufficient compression pressure will result in a loss of performance.

1. Remove:
 - Storage box
Refer to "GENERAL CHASSIS" on page 4-1.
2. Measure:
 - Valve clearance
Out of specification → Adjust.
Refer to "ADJUSTING THE VALVE CLEARANCE" on page 3-6.
3. Start the engine, warm it up for several minutes, and then turn it off.
4. Disconnect:
 - Spark plug cap
5. Remove:
 - Spark plug

ECA37P1043

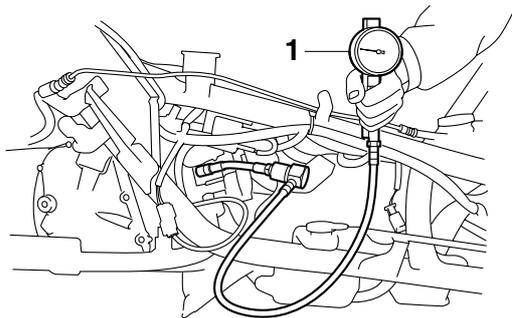
NOTICE

Before removing the spark plug, use compressed air to blow away any dirt accumulated in the spark plug well to prevent it from falling into the cylinder.

6. Install:
 - Compression gauge "1"



**Compression gauge
90890-03081
Engine compression tester
YU-33223**



7. Measure:
 - Compression pressure
Out of specification → Refer to steps (c) and (d).



Standard compression pressure (at sea level)

550 kPa/680 r/min (5.5 kgf/cm²/680 r/min, 78.2 psi/680 r/min)

Minimum–maximum

480–620 kPa (4.8–6.2 kgf/cm², 68.3–88.2 psi)

- a. Set the main switch to "ON".
- b. With the throttle wide open, crank the engine until the reading on the compression gauge stabilizes.

EWA37P1019

WARNING

To prevent sparking, ground the spark plug lead before cranking the engine.

- c. If the compression pressure is above the maximum specification, check the cylinder head, valve surfaces and piston crown for carbon deposits.
Carbon deposits → Eliminate.
- d. If the compression pressure is below the minimum specification, pour a teaspoonful of engine oil into the spark plug bore and measure again.
Refer to the following table.

Compression pressure (with oil applied into the cylinder)

Reading	Diagnosis
Higher than without oil	Piston ring(s) wear or damage → Repair.
Same as without oil	Piston, valves, cylinder head gasket or piston ring(s) possibly defective → Repair.

8. Install:
 - Spark plug



**Spark plug
13 Nm (1.3 m·kgf, 9.4 ft·lbf)**

9. Connect:
 - Spark plug cap
10. Install:
 - Storage box
Refer to "GENERAL CHASSIS" on page 4-1.

ENGINE (YP125R)

EAS37P1134

CHECKING THE ENGINE OIL LEVEL

1. Stand the vehicle on a level surface.

TIP

- Place the vehicle on the centerstand.
- Make sure the vehicle is upright.

2. Start the engine, warm it up for several minutes, and then turn it off.

3. Remove:

- Dipstick "1"

4. Check:

- Engine oil level

The engine oil level should be between the minimum level mark "a" and maximum level mark "b".

Below the minimum level mark → Add the recommended engine oil to the proper level.

TIP

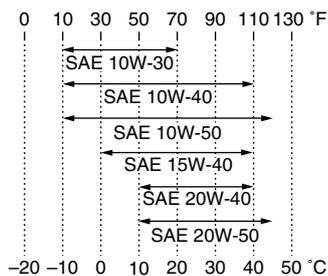
- Before checking the engine oil level, wait a few minutes until the oil has settled.
- Do not screw the dipstick in when inspecting the oil level.



Type

SAE 10W-30, SAE 10W-40, SAE 15W-40, SAE 20W-40 or SAE 20W-50

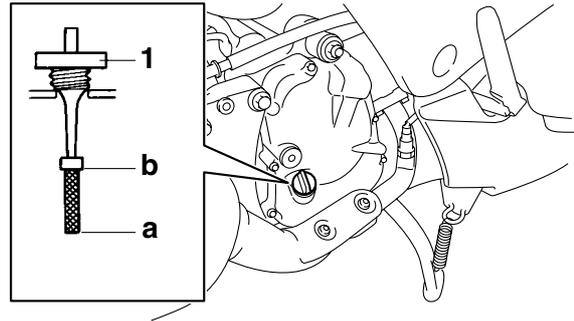
Recommended engine oil grade
API service SG type or higher,
JASO standard MA



ECA37P1044

NOTICE

Do not allow foreign materials to enter the crankcase.



5. Start the engine, warm it up for several minutes, and then turn it off.

6. Check the engine oil level again.

TIP

Before checking the engine oil level, wait a few minutes until the oil has settled.

7. Install:

- Dipstick

EAS37P1094

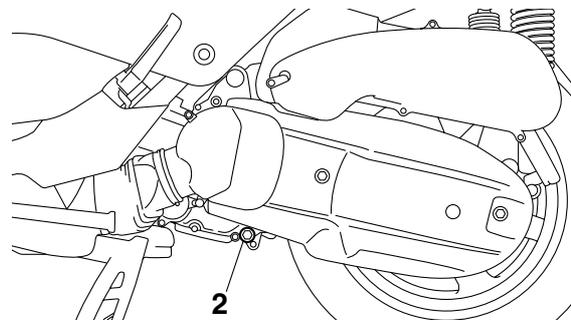
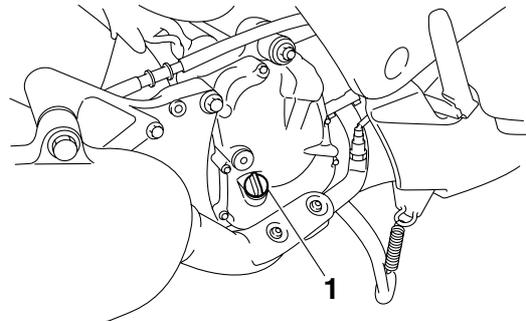
CHANGING THE ENGINE OIL

1. Start the engine, warm it up for several minutes, and then turn it off.

2. Place a container under the engine oil drain bolt.

3. Remove:

- Engine oil filler cap "1"
- Engine oil drain bolt "2" (along with the gasket)



4. Drain:

- Engine oil (completely from the crankcase)

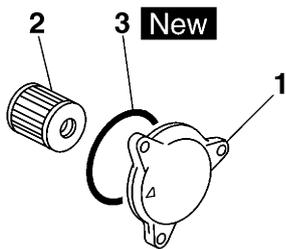
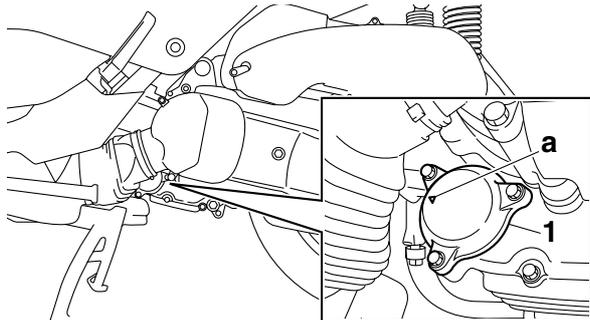
ENGINE (YP125R)

5. If the oil filter element is also to be replaced, perform the following procedure.

- a. Remove the oil filter element cover "1" and oil filter element "2".
- b. Install a new O-ring "3".

TIP

Be sure to face the "△" mark "a" on the oil filter element cover in the direction shown in the illustration.

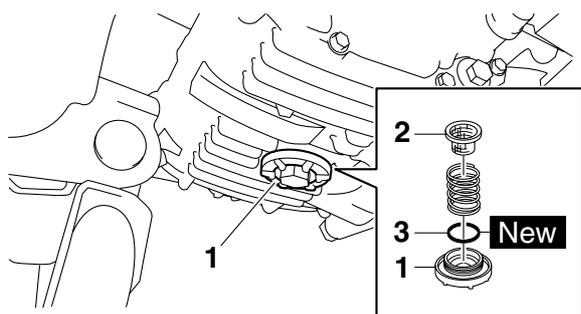


c. Install the new oil filter element and the oil filter element cover.

	Oil filter element cover bolt 10 Nm (1.0 m·kgf, 7.2 ft·lbf)
---	---

6. If the oil strainer is also to be cleaned, perform the following procedure.

- a. Remove the oil strainer cover "1" and oil strainer "2".
- b. Install a new O-ring "3".



c. Install the oil strainer cover.

	Oil strainer cover 32 Nm (3.2 m·kgf, 23 ft·lbf)
---	---

7. Install:

- Engine oil drain bolt
(along with the gasket **New**)

	Engine oil drain bolt 20 Nm (2.0 m·kgf, 14 ft·lbf)
---	--

8. Fill:

- Crankcase
(with the specified amount of the recommended engine oil)

	Engine oil quantity
	Total amount
	1.60 L (1.69 US qt, 1.41 Imp.qt)
	Without oil filter element replacement
	1.40 L (1.48 US qt, 1.23 Imp.qt)
	With oil filter element replacement
	1.50 L (1.59 US qt, 1.32 Imp.qt)

9. Install:

- Engine oil filler cap

10. Start the engine, warm it up for several minutes, and then turn it off.

11. Check:

- Engine
(for engine oil leaks)

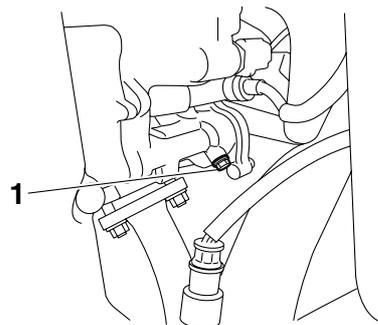
12. Check:

- Engine oil level
Refer to "CHECKING THE ENGINE OIL LEVEL" on page 3-12.

13. Check:

- Engine oil pressure

a. Slightly loosen the oil check bolt "1".



ENGINE (YP125R)

- b. Start the engine and keep it idling until engine oil starts to seep from the oil check bolt. If no engine oil comes out after one minute, turn the engine off so that it will not seize.
- c. Check the engine oil passages and the oil pump for damage or leakage. Refer to "OIL PUMP (YP125R)" on page 5-48.
- d. Start the engine after solving the problem(s) and check the engine oil pressure again.
- e. Tighten the oil check bolt to specification.

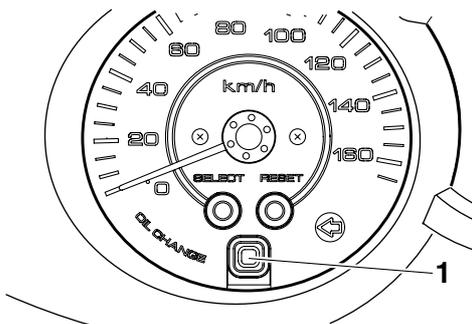
	Oil check bolt 7 Nm (0.7 m·kgf, 5.1 ft·lbf)
---	--



14. Reset:
- Oil change indicator



- a. Set the main switch to "ON".
- b. Push the "OIL CHANGE" button "1" for 15 to 20 seconds.



- c. Release the button and the oil change indicator will go off.

TIP _____

If the engine oil is changed before the oil change indicator comes on (i.e., before the periodic oil change interval has been reached), the oil change indicator must be reset as soon as possible so that it comes on for the next periodic oil change.



EAS37P1095

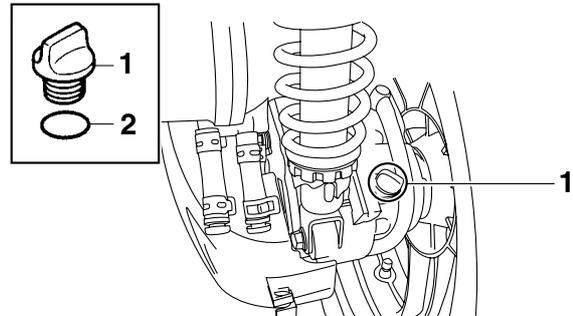
CHANGING THE FINAL TRANSMISSION OIL

1. Stand the vehicle on a level surface.

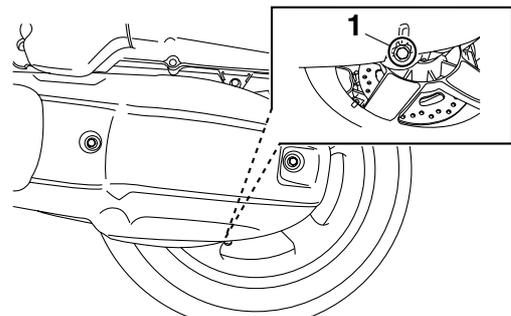
TIP _____

- Place the vehicle on the centerstand.
- Make sure that the vehicle is upright.

2. Start the engine, warm it up for several minutes, and then turn it off.
3. Place a container under the final transmission.
4. Remove:
 - Oil filler cap "1"
 - O-ring "2"



5. Remove:
 - Final transmission oil drain bolt "1"
 Completely drain the final transmission oil.



6. Install:
 - Final transmission oil drain bolt (along with the gasket **New**)

	Final transmission oil drain bolt 20 Nm (2.0 m·kgf, 14 ft·lbf)
---	---

7. Fill:
 - Final transmission oil (specified amount of the recommended final transmission oil)

	Final transmission oil Type SAE 10W-30 type SE motor oil Quantity 0.21 L (0.22 US qt, 0.18 Imp.qt) Quantity (disassembled) 0.23 L (0.24 US qt, 0.20 Imp.qt)
---	---

8. Install:
 - O-ring
 - Oil filler cap

- Start the engine, warm it up for several minutes, turn it off, and then check for oil leakage.

EAS37P1096

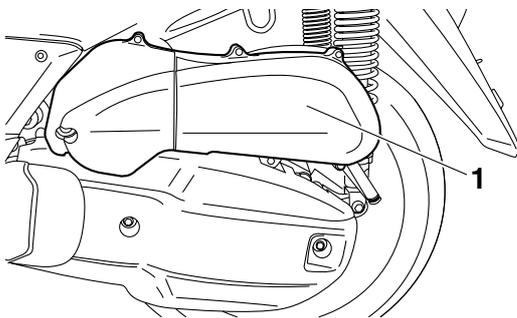
REPLACING THE AIR FILTER ELEMENT

TIP

Check hoses are located on the bottom of the air filter case. If dust or water or both collects in a hose, remove the clamp from the hose, and then remove the plug to drain the hose.

- Remove:

- Air filter case cover "1"
- Air filter element



- Check:

- Air filter element
Damage → Replace.

TIP

- Replace the air filter element every 12000 km of operation.
- The air filter needs more frequent service if you are riding in unusually wet or dusty areas.

- Install:

- Air filter element
- Air filter case cover

ECA37P1045

NOTICE

Never operate the engine without the air filter element installed. Unfiltered air will cause rapid wear of engine parts and may damage the engine. Operating the engine without the air filter element will also affect the throttle body tuning, leading to poor engine performance and possible overheating.

TIP

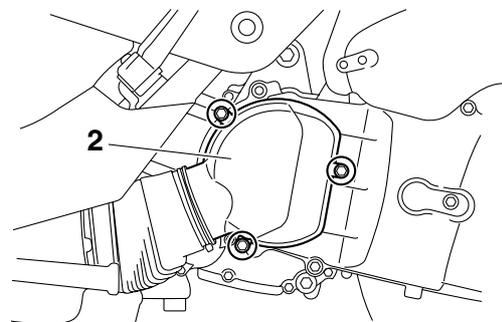
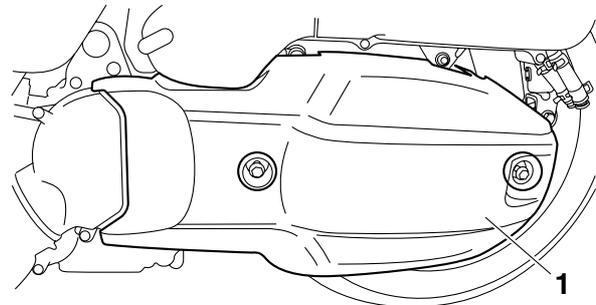
When installing the air filter element into the air filter case cover, make sure that the sealing surfaces are aligned to prevent any air leaks.

EAS37P1097

CLEANING THE V-BELT CASE AIR FILTER ELEMENT

- Remove:

- V-belt case cover "1"
- V-belt case air duct "2"
- V-belt case air filter element



- Clean:

- V-belt case air filter element
(with solvent)

EWA37P1020

WARNING

Never use low flash point solvents, such as gasoline, to clean the V-belt case air filter element. Such solvents may cause a fire or an explosion.

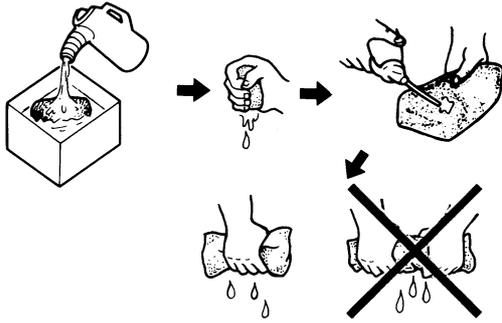
TIP

After cleaning, gently squeeze the V-belt case air filter element to remove the excess solvent.

ECA37P1046

NOTICE

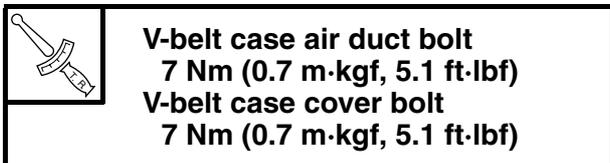
Do not twist the V-belt case air filter element when squeezing it.



3. Check:
 - V-belt case air filter element
Damage → Replace.
4. Apply the recommended oil to the entire surface of the V-belt case air filter element and squeeze out the excess oil. The V-belt case air filter element should be wet but not dripping.



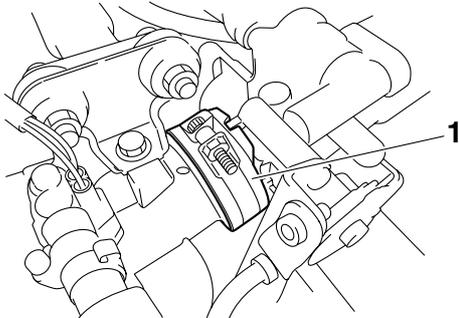
5. Install:
 - V-belt case air filter element
 - V-belt case air duct
 - V-belt case cover



EAS37P1098

CHECKING THE THROTTLE BODY JOINT

1. Remove:
 - Storage box
Refer to “GENERAL CHASSIS” on page 4-1.
2. Check:
 - Throttle body joint “1”
Cracks/damage → Replace.

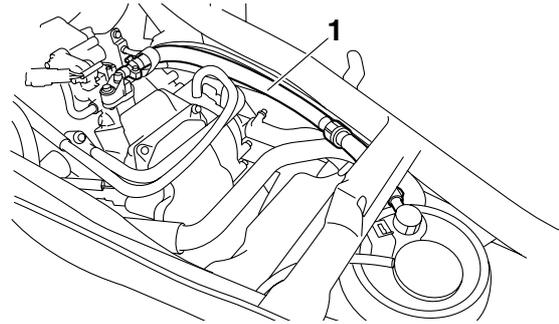


3. Install:
 - Storage box
Refer to “GENERAL CHASSIS” on page 4-1.

EAS37P1099

CHECKING THE FUEL HOSE

1. Remove:
 - Storage box
Refer to “GENERAL CHASSIS” on page 4-1.
2. Check:
 - Fuel hose “1”
Cracks/damage → Replace the fuel injector assembly.
Loose connection → Connect properly.



3. Install:
 - Storage box
Refer to “GENERAL CHASSIS” on page 4-1.

EAS37P1100

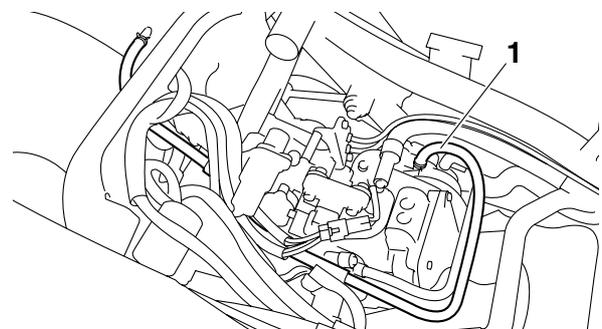
CHECKING THE BREATHER HOSES

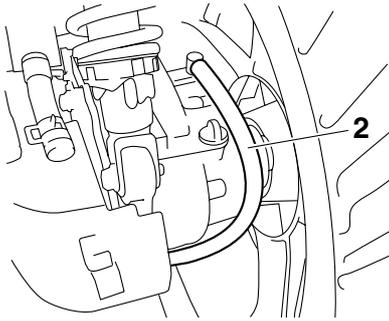
1. Remove:
 - Storage box
Refer to “GENERAL CHASSIS” on page 4-1.
2. Check:
 - Cylinder head breather hose “1”
 - Transmission case breather hose “2”
Cracks/damage → Replace.
Loose connection → Connect properly.

ECA37P1047

NOTICE

Make sure the cylinder head breather hose and transmission case breather hose are routed correctly.





3. Install:
- Storage box
Refer to "GENERAL CHASSIS" on page 4-1.

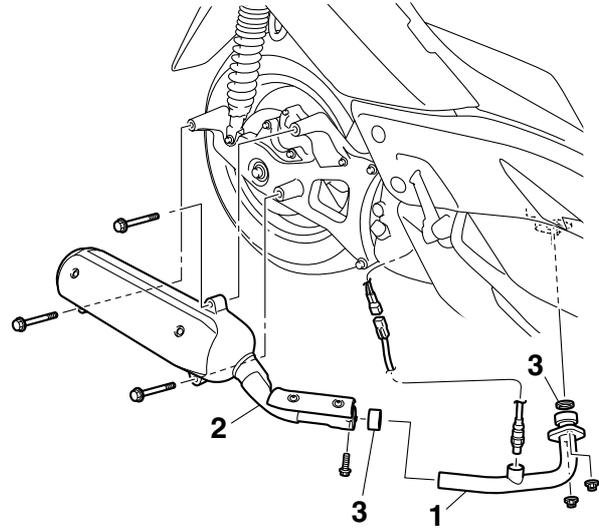
EAS37P1101

CHECKING THE EXHAUST SYSTEM

1. Check:
 - Exhaust pipe "1"
 - Muffler "2"
Cracks/damage → Replace.
 - Exhaust system connection
Exhaust gas leaks → Replace the gaskets "3".
2. Check:
 - Tightening torque



Exhaust pipe nut
20 Nm (2.0 m-kgf, 14 ft-lbf)
Muffler joint bolt
14 Nm (1.4 m-kgf, 10 ft-lbf)
Muffler mounting bolt
53 Nm (5.3 m-kgf, 38 ft-lbf)
O₂ sensor
45 Nm (4.5 m-kgf, 32 ft-lbf)



EAS37P1102

CHECKING THE COOLANT LEVEL

1. Stand the vehicle on a level surface.

TIP

- Place the vehicle on the centerstand.
- Make sure the vehicle is upright.

2. Check:

- Coolant level

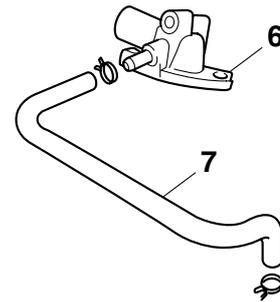
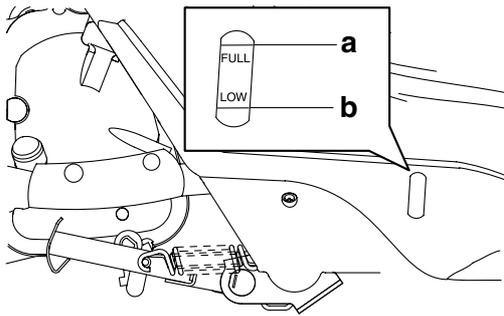
The coolant level should be between the maximum level mark "a" and minimum level mark "b".

Below the minimum level mark → Add the recommended coolant to the proper level.

ECA37P1048

NOTICE

- Adding water instead of coolant lowers the antifreeze content of the coolant. If water is used instead of coolant, check, and if necessary, correct the antifreeze concentration of the coolant.
- Use only distilled water. However, if distilled water is not available, soft water may be used.



3. Start the engine, warm it up for several minutes, and then turn it off.
4. Check:
 - Coolant level

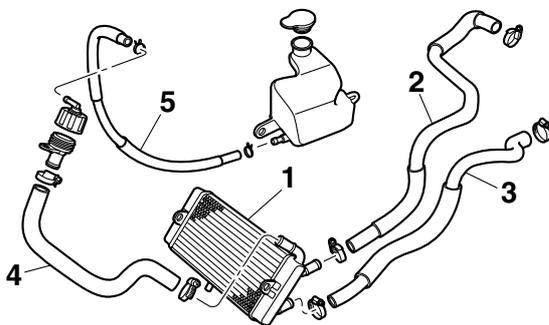
TIP

Before checking the coolant level, wait a few minutes until it settles.

EAS37P1103

CHECKING THE COOLING SYSTEM

1. Remove:
 - Storage box
 - Bottom cover
 - Footrest board
 Refer to "GENERAL CHASSIS" on page 4-1.
2. Check:
 - Radiator "1"
 - Radiator inlet hose "2"
 - Radiator outlet hose "3"
 - Radiator filler hose "4"
 - Coolant reservoir hose "5"
 - Thermostat cover "6"
 - Thermostat inlet hose "7"
 Cracks/damage → Replace.
 Refer to "RADIATOR (YP125R)" on page 6-1 and "THERMOSTAT (YP125R)" on page 6-3.

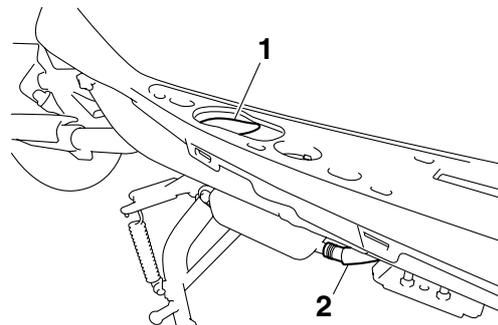


3. Install:
 - Footrest board
 - Bottom cover
 - Storage box
 Refer to "GENERAL CHASSIS" on page 4-1.

EAS37P1104

CHANGING THE COOLANT

1. Remove:
 - Bottom cover
 Refer to "GENERAL CHASSIS" on page 4-1.
2. Remove:
 - Coolant reservoir cap "1"
3. Disconnect:
 - Coolant reservoir hose "2"



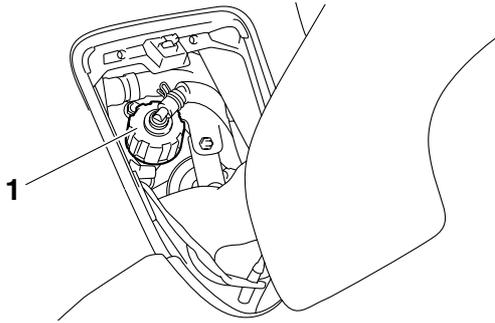
4. Drain:
 - Coolant (from the coolant reservoir)
5. Remove:
 - Radiator cap "1"

EWA37P1021

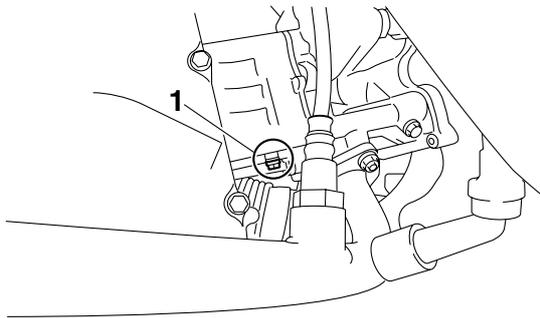
WARNING

A hot radiator is under pressure. Therefore, do not remove the radiator cap when the engine is hot. Scalding hot fluid and steam may be blown out, which could cause serious injury. When the engine has cooled, open the radiator cap as follows:

Place a thick rag or a towel over the radiator cap and slowly turn the radiator cap counter-clockwise to allow any residual pressure to escape. When the hissing sound has stopped, remove the cap.



6. Remove:
- Coolant drain bolt (from the cylinder) "1" (along with the copper washer)



7. Drain:
- Coolant (from the engine and radiator)
8. Install:
- Coolant drain bolt (to the cylinder) (along with the copper washer **New**)



Coolant drain bolt
7 Nm (0.7 m-kgf, 5.1 ft-lbf)

9. Connect:
- Coolant reservoir hose
10. Fill:
- Cooling system (with the specified amount of the recommended coolant)



Recommended antifreeze
High-quality ethylene glycol antifreeze containing corrosion inhibitors for aluminum engines

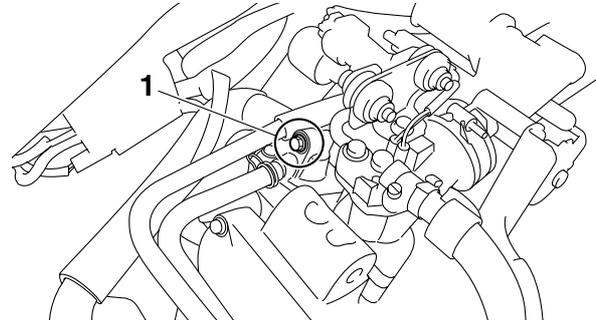
Mixing ratio
1:1 (antifreeze:water)

Radiator capacity (including all routes)
1.00 L (1.06 US qt, 0.88 Imp.qt)

Coolant reservoir capacity (up to the maximum level mark)
0.25 L (0.26 US qt, 0.22 Imp.qt)

TIP

The specified amount of coolant is a standard amount. Fill the cooling system with coolant until coolant comes out of the air bleed bolt hole "1".



Handling notes for coolant

Coolant is potentially harmful and should be handled with special care.

EWA13040

WARNING

- If coolant splashes in your eyes, thoroughly wash them with water and consult a doctor.
- If coolant splashes on your clothes, quickly wash it away with water and then with soap and water.
- If coolant is swallowed, induce vomiting and get immediate medical attention.

ECA37P1049

NOTICE

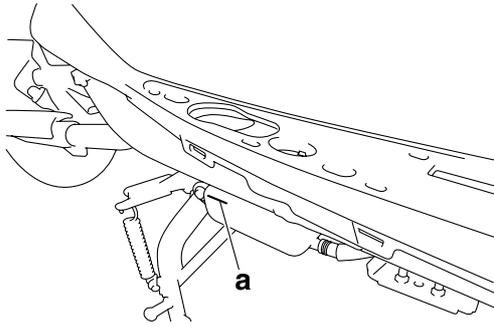
- Adding water instead of coolant lowers the antifreeze content of the coolant. If water is used instead of coolant, check, and if necessary, correct the antifreeze concentration of the coolant.
- Use only distilled water. However, if distilled water is not available, soft water may be used.
- If coolant comes into contact with painted surfaces, immediately wash them with water.
- Do not mix different types of antifreeze.

11. Install:

- Radiator cap

12. Fill:

- Coolant reservoir (with the recommended coolant to the maximum level mark "a")



13. Install:

- Coolant reservoir cap

14. Start the engine, warm it up for several minutes, and then turn it off.

15. Check:

- Coolant level

Refer to "CHECKING THE COOLANT LEVEL" on page 3-17.

TIP _____

Before checking the coolant level, wait a few minutes until the coolant has settled.

16. Install:

- Bottom cover

Refer to "GENERAL CHASSIS" on page 4-1.

EAS20470

ENGINE (YP250R)

EAS20520

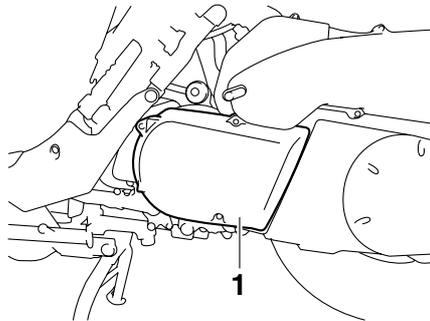
ADJUSTING THE VALVE CLEARANCE

The following procedure applies to all of the valves.

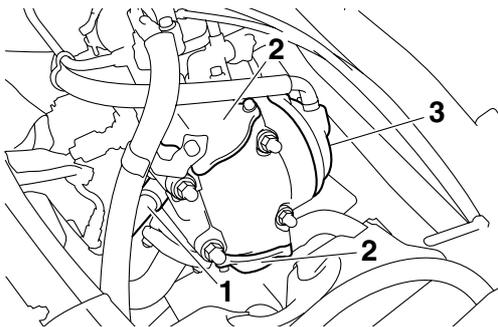
TIP

- Valve clearance adjustment should be made on a cold engine, at room temperature.
- When the valve clearance is to be measured or adjusted, the piston must be at top dead center (TDC) on the compression stroke.

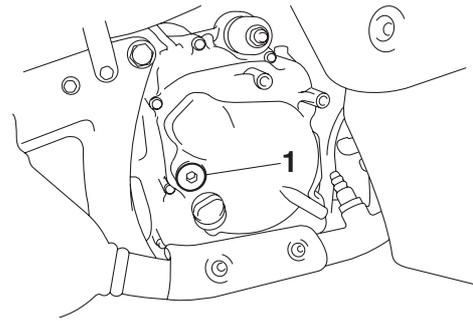
1. Remove:
 - Storage box
Refer to "GENERAL CHASSIS" on page 4-1.
2. Remove:
 - V-belt case air filter cover "1"



3. Remove:
 - Spark plug cap "1"
 - Spark plug
 - Tappet covers "2"
 - Camshaft sprocket cover "3"



4. Remove:
 - Timing mark accessing plug "1"



5. Measure:
 - Valve clearance
Out of specification → Adjust.



Valve clearance (cold)

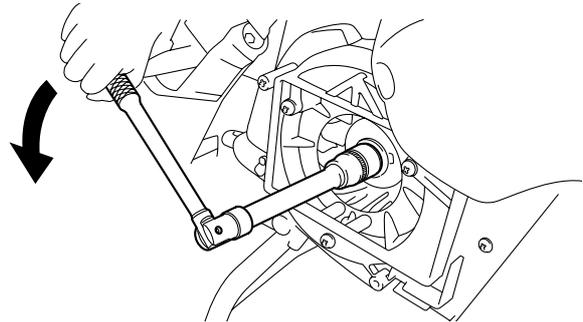
Intake

0.08–0.12 mm (0.0031–0.0047 in)

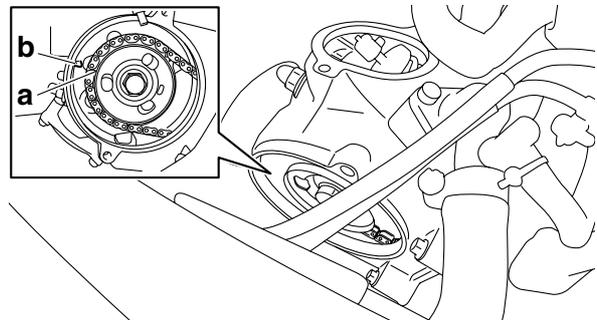
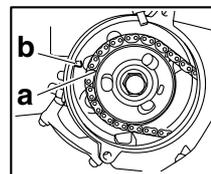
Exhaust

0.16–0.20 mm (0.0063–0.0079 in)

- a. Turn the primary sheave nut on the left side of the crankshaft counterclockwise to turn the crankshaft.



- b. When the piston is at TDC on the compression stroke, align the "I" mark "a" on the camshaft sprocket with the stationary pointer "b" on the cylinder head.



- c. Align the "I" mark "c" on the generator rotor with the stationary pointer "d" on the generator cover.

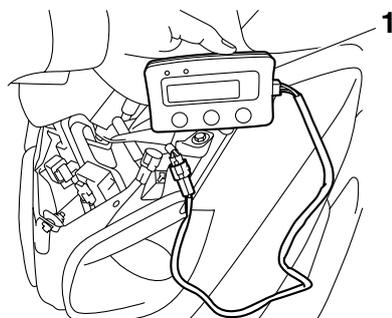
EAS20600

ADJUSTING THE EXHAUST GAS VOLUME

TIP

Be sure to set the CO density level to standard, and then adjust the exhaust gas volume.

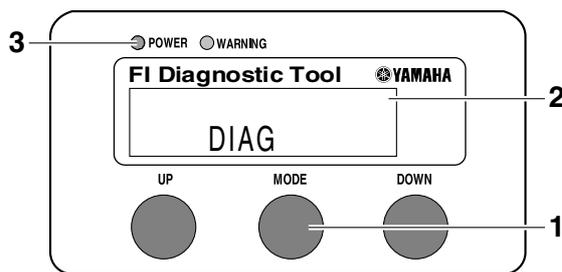
1. Remove:
 - Upper panel
Refer to “GENERAL CHASSIS” on page 4-1.
2. Set the main switch to “OFF”.
3. Disconnect:
 - Self-diagnosis signal coupler
4. Connect:
 - FI diagnostic tool “1”



5. While pressing the “MODE” button “1”, set the main switch to “ON”.

TIP

- “DIAG” appears on the LCD “2” of the FI diagnostic tool.
- “POWER” LED (Green) “3” comes on.

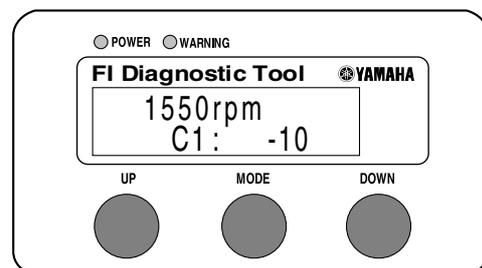


6. Press the “UP” button to select the CO adjustment mode “CO” or the diagnostic mode “DIAG”.
7. After selecting “CO”, press the “MODE” button.
8. Check that “C1” appears on the LCD of the FI diagnostic tool, and then press the “MODE” button.
9. Start the engine.

ECA37P1015

NOTICE

Perform the adjustment after the battery has been sufficiently charged.



10. Change the CO adjustment volume by pressing the “UP” and “DOWN” buttons.

TIP

The CO adjustment volume and engine idling speed appears on the LCD of the FI diagnostic tool.

- To decrease the CO adjustment volume, press the “DOWN” button.
- To increase the CO adjustment volume, press the “UP” button.

11. Release the “DOWN” and “UP” buttons to execute the selection.

12. Set the main switch to “OFF” to cancel the mode.

13. Disconnect:

- FI diagnostic tool

14. Connect:

- Self-diagnosis signal coupler

15. Install:

- Upper panel

Refer to “GENERAL CHASSIS” on page 4-1.

EAS20640

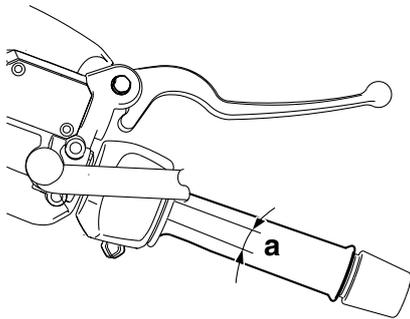
ADJUSTING THE THROTTLE CABLE FREE PLAY

1. Check:

- Throttle cable free play “a”
Out of specification → Adjust.



Throttle cable free play
3.0–5.0 mm (0.12–0.20 in)

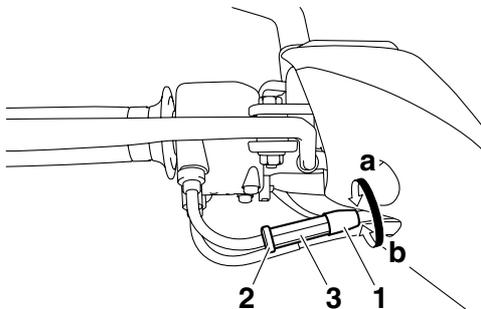


2. Adjust:

- Throttle cable free play

- Slide back the rubber cover "1".
- Loosen the locknut "2".
- Turn the adjusting nut "3" in direction "a" or "b" until the specified throttle cable free play is obtained.

Direction "a"
Throttle cable free play is increased.
Direction "b"
Throttle cable free play is decreased.



d. Tighten the locknut.

e. Slide the rubber cover to its original position.

EWA12910

WARNING

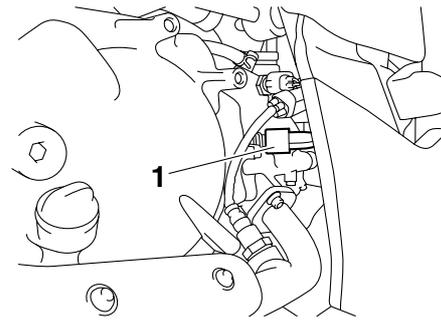
After adjusting the throttle cable free play, start the engine and turn the handlebar to the right and to the left to ensure that this does not cause the engine idling speed to change.

EAS20690

CHECKING THE SPARK PLUG

1. Disconnect:

- Spark plug cap "1"



2. Remove:

- Spark plug

ECA13330

NOTICE

Before removing the spark plug, blow away any dirt accumulated in the spark plug well with compressed air to prevent it from falling into the cylinder.

3. Check:

- Spark plug type
Incorrect → Change.



Manufacturer/model
NGK/DPR8EA-9

4. Check:

- Electrode "1"
Damage/wear → Replace the spark plug.
- Insulator "2"
Abnormal color → Replace the spark plug.
Normal color is medium-to-light tan.

5. Clean:

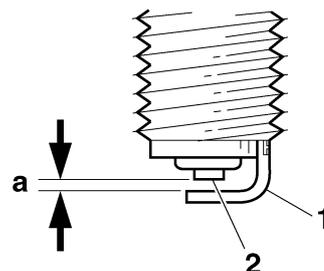
- Spark plug
(with a spark plug cleaner or wire brush)

6. Measure:

- Spark plug gap "a"
(with a wire thickness gauge)
Out of specification → Regap.



Spark plug gap
0.8–0.9 mm (0.031–0.035 in)



7. Install:

- Spark plug

3. Start the engine, warm it up for several minutes, and then turn it off.
4. Disconnect:
 - Spark plug cap
5. Remove:
 - Spark plug

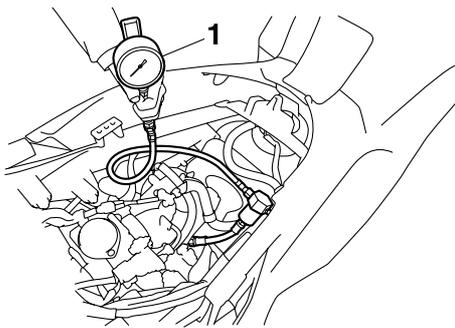
ECA37P1016

NOTICE

Before removing the spark plug, use compressed air to blow away any dirt accumulated in the spark plug well to prevent it from falling into the cylinder.

6. Install:
 - Compression gauge "1"

	<p>Compression gauge 90890-03081 Engine compression tester YU-33223</p>
---	--



7. Measure:
 - Compression pressure

Out of specification → Refer to steps (c) and (d).

	<p>Standard compression pressure (at sea level) 1400 kPa/500 r/min (14.0 kgf/cm²/500 r/min, 199.1 psi/500 r/min) Minimum–maximum 1120–1570 kPa (11.2–15.7 kgf/cm², 159.3–223.3 psi)</p>
---	--

- a. Set the main switch to "ON".
- b. With the throttle wide open, crank the engine until the reading on the compression gauge stabilizes.

EWA37P1002

WARNING

To prevent sparking, ground the spark plug lead before cranking the engine.

- c. If the compression pressure is above the maximum specification, check the cylinder head, valve surfaces and piston crown for carbon deposits.
Carbon deposits → Eliminate.
- d. If the compression pressure is below the minimum specification, pour a teaspoonful of engine oil into the spark plug bore and measure again.
Refer to the following table.

Compression pressure (with oil applied into the cylinder)	
Reading	Diagnosis
Higher than without oil	Piston ring(s) wear or damage → Repair.
Same as without oil	Piston, valves, cylinder head gasket or piston ring(s) possibly defective → Repair.



8. Install:
 - Spark plug

	<p>Spark plug 18 Nm (1.8 m·kgf, 13 ft·lbf)</p>
---	---

9. Connect:
 - Spark plug cap
10. Install:
 - Storage box

Refer to "GENERAL CHASSIS" on page 4-1.

EAS20740

CHECKING THE ENGINE OIL LEVEL

1. Stand the vehicle on a level surface.

TIP

- Place the vehicle on the centerstand.
 - Make sure the vehicle is upright.
2. Start the engine, warm it up for several minutes, and then turn it off.
 3. Remove:
 - Dipstick "1"
 4. Check:
 - Engine oil level

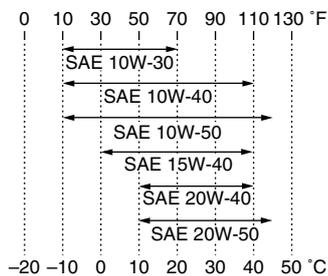
The engine oil level should be between the minimum level mark "a" and maximum level mark "b".
Below the minimum level mark → Add the recommended engine oil to the proper level.

TIP

- Before checking the engine oil level, wait a few minutes until the oil has settled.
- Do not screw the dipstick in when inspecting the oil level.



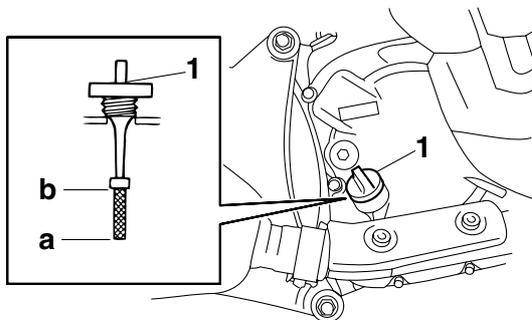
Type
SAE 10W-30, SAE 10W-40, SAE 15W-40, SAE 20W-40 or SAE 20W-50
Recommended engine oil grade
API service SF, SG type or higher, JASO standard MA



EWA37P1003

NOTICE

Do not allow foreign materials to enter the crankcase.



5. Start the engine, warm it up for several minutes, and then turn it off.
6. Check the engine oil level again.

TIP

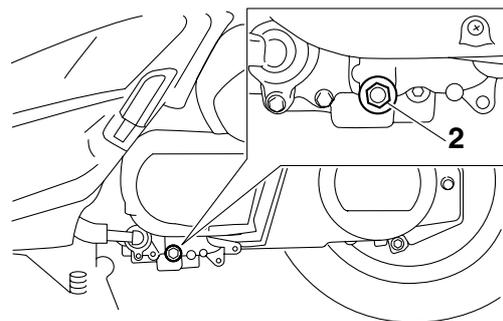
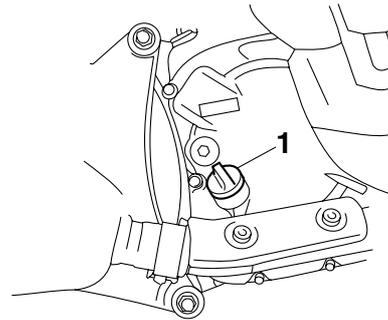
Before checking the engine oil level, wait a few minutes until the oil has settled.

7. Install:
 - Dipstick

EAS20780

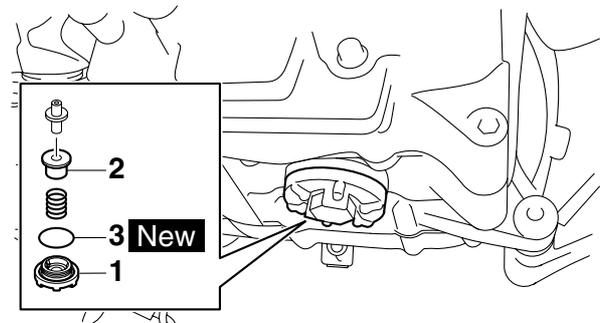
CHANGING THE ENGINE OIL

1. Start the engine, warm it up for several minutes, and then turn it off.
2. Place a container under the engine oil drain bolt.
3. Remove:
 - Engine oil filler cap "1"
 - Engine oil drain bolt "2" (along with the gasket)



4. Drain:
 - Engine oil (completely from the crankcase)
5. If the oil strainer is also to be cleaned, perform the following procedure.

- a. Remove the oil strainer cover "1" and oil strainer "2".
- b. Install a new O-ring "3".



- c. Install the oil strainer cover.



Oil strainer cover
32 Nm (3.2 m·kgf, 23 ft·lbf)



6. Install:
- Engine oil drain bolt
 (along with the gasket **New**)



Engine oil drain bolt
20 Nm (2.0 m·kgf, 14 ft·lbf)

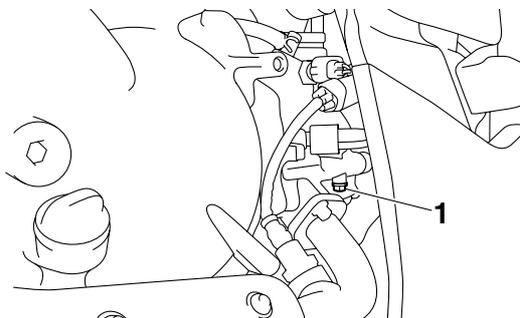
7. Fill:
- Crankcase
 (with the specified amount of the recommended engine oil)



Engine oil quantity
Total amount
1.50 L (1.59 US qt, 1.32 Imp.qt)
Periodic oil change
1.30 L (1.37 US qt, 1.14 Imp.qt)

8. Install:
- Engine oil filler cap
9. Start the engine, warm it up for several minutes, and then turn it off.
10. Check:
- Engine
 (for engine oil leaks)
11. Check:
- Engine oil level
 Refer to “CHECKING THE ENGINE OIL LEVEL” on page 3-26.
12. Check:
- Engine oil pressure

- a. Slightly loosen the oil check bolt “1”.



- b. Start the engine and keep it idling until engine oil starts to seep from the oil check bolt. If no engine oil comes out after one minute, turn the engine off so that it will not seize.

- c. Check the engine oil passages and the oil pump for damage or leakage. Refer to “OIL PUMP (YP250R)” on page 5-108.
- d. Start the engine after solving the problem(s) and check the engine oil pressure again.
- e. Tighten the oil check bolt to specification.



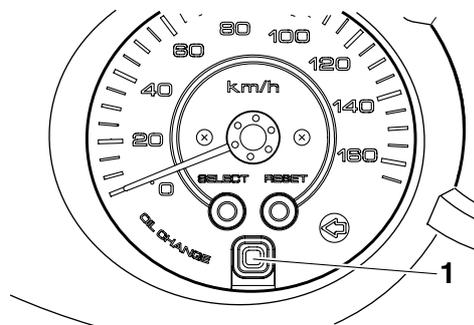
Oil check bolt
7 Nm (0.7 m·kgf, 5.1 ft·lbf)



13. Reset:
- Oil change indicator



- a. Set the main switch to “ON”.
- b. Push the “OIL CHANGE” button “1” for 15 to 20 seconds.



- c. Release the button and the oil change indicator will go off.

TIP

If the engine oil is changed before the oil change indicator comes on (i.e., before the periodic oil change interval has been reached), the oil change indicator must be reset as soon as possible so that it comes on for the next periodic oil change.



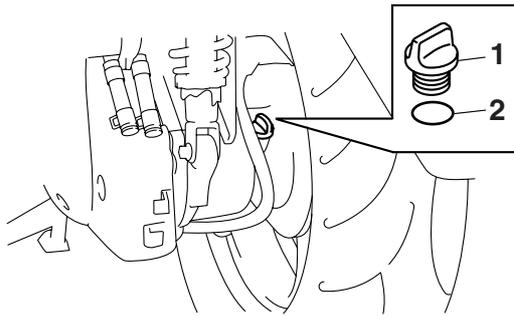
EAS20830

CHANGING THE FINAL TRANSMISSION OIL

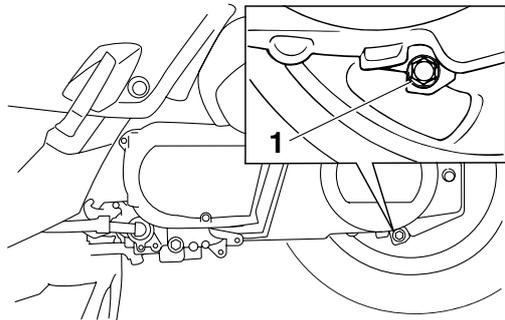
1. Stand the vehicle on a level surface.

TIP

- Place the vehicle on the centerstand.
 - Make sure that the vehicle is upright.
2. Start the engine, warm it up for several minutes, and then turn it off.
3. Place a container under the final transmission.
4. Remove:
- Oil filler cap “1”
 - O-ring “2”



5. Remove:
- Final transmission oil drain bolt “1”
Completely drain the final transmission oil.



6. Install:
- Final transmission oil drain bolt
(along with the gasket **New**)



Final transmission oil drain bolt
22 Nm (2.2 m·kgf, 16 ft·lbf)

7. Fill:
- Final transmission oil
(specified amount of the recommended final transmission oil)



Final transmission oil
Type
SAE 10W-30 type SE motor oil
Quantity
0.25 L (0.26 US qt, 0.22 Imp.qt)

8. Install:
- O-ring
 - Oil filler cap

9. Start the engine, warm it up for several minutes, turn it off, and then check for oil leakage.

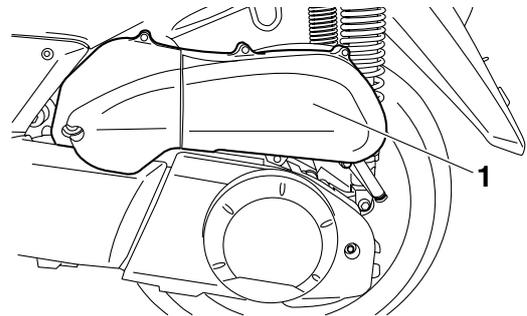
EAS20960

REPLACING THE AIR FILTER ELEMENT

TIP

Check hoses are located on the bottom of the air filter case. If dust or water or both collects in a hose, remove the clamp from the hose, and then remove the plug to drain the hose.

1. Remove:
- Air filter case cover “1”
 - Air filter element



2. Check:
- Air filter element
Damage → Replace.

TIP

- Replace the air filter element every 20000 km of operation.
- The air filter needs more frequent service if you are riding in unusually wet or dusty areas.

3. Install:
- Air filter element
 - Air filter case cover

ECA37P1017

NOTICE

Never operate the engine without the air filter element installed. Unfiltered air will cause rapid wear of engine parts and may damage the engine. Operating the engine without the air filter element will also affect the throttle body tuning, leading to poor engine performance and possible overheating.

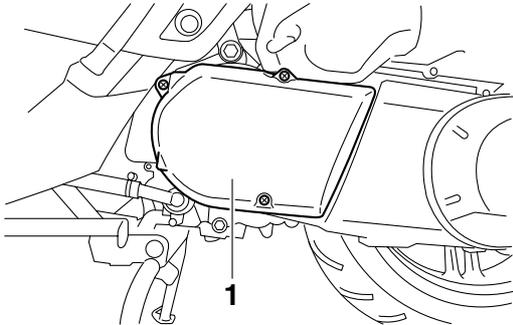
TIP

When installing the air filter element into the air filter case cover, make sure that the sealing surfaces are aligned to prevent any air leaks.

EAS20980

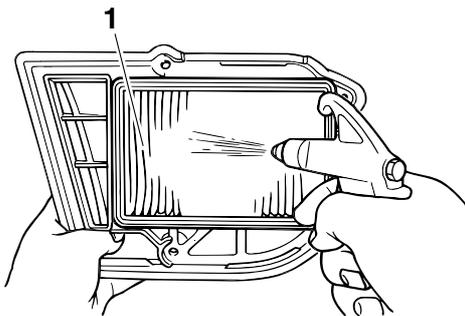
CLEANING THE V-BELT CASE AIR FILTER ELEMENT

- Remove:
 - V-belt case air filter cover "1"
 - V-belt case air filter element



- Clean:
 - V-belt case air filter element "1"

Blow compressed air onto the outer surface of the V-belt case air filter element.



- Check:
 - V-belt case air filter element

Damage → Replace.

ECA13440

NOTICE

Since the V-belt case air filter element is a dry type, do not let grease or water contact it.

- Install:
 - V-belt case air filter element
 - V-belt case air filter cover

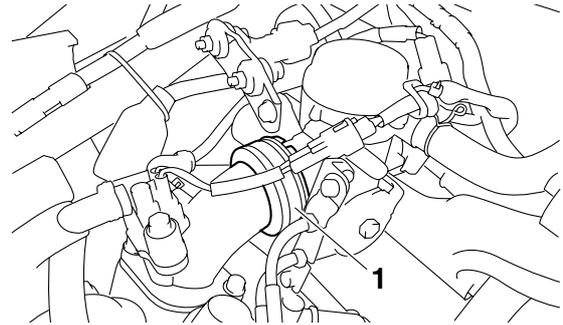
EAS21020

CHECKING THE THROTTLE BODY JOINT

- Remove:
 - Storage box

Refer to "GENERAL CHASSIS" on page 4-1.
- Check:
 - Throttle body joint "1"

Cracks/damage → Replace.



- Install:
 - Storage box

Refer to "GENERAL CHASSIS" on page 4-1.

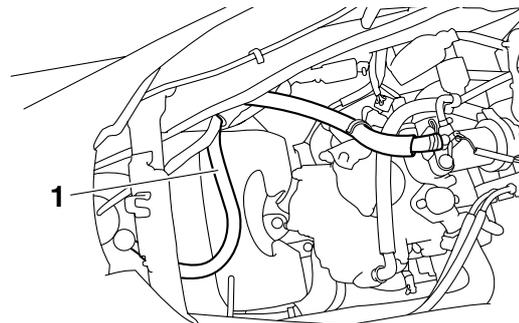
EAS21030

CHECKING THE FUEL HOSE

- Remove:
 - Storage box

Refer to "GENERAL CHASSIS" on page 4-1.
- Check:
 - Fuel hose "1"

Cracks/damage → Replace the fuel injector assembly.
Loose connection → Connect properly.



- Install:
 - Storage box

Refer to "GENERAL CHASSIS" on page 4-1.

EAS21070

CHECKING THE BREATHER HOSES

- Remove:
 - Storage box

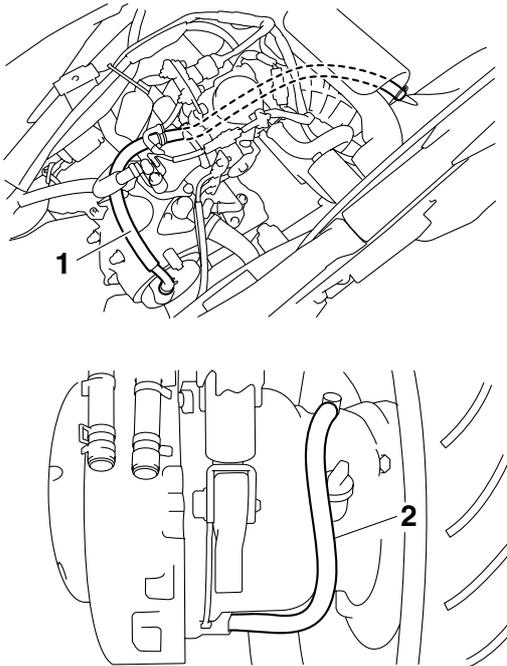
Refer to "GENERAL CHASSIS" on page 4-1.
- Check:
 - Cylinder head breather hose "1"
 - Transmission case breather hose "2"

Cracks/damage → Replace.
Loose connection → Connect properly.

ECA37P1018

NOTICE

Make sure the cylinder head breather hose and transmission case breather hose are routed correctly.



3. Install:

- Storage box
Refer to "GENERAL CHASSIS" on page 4-1.

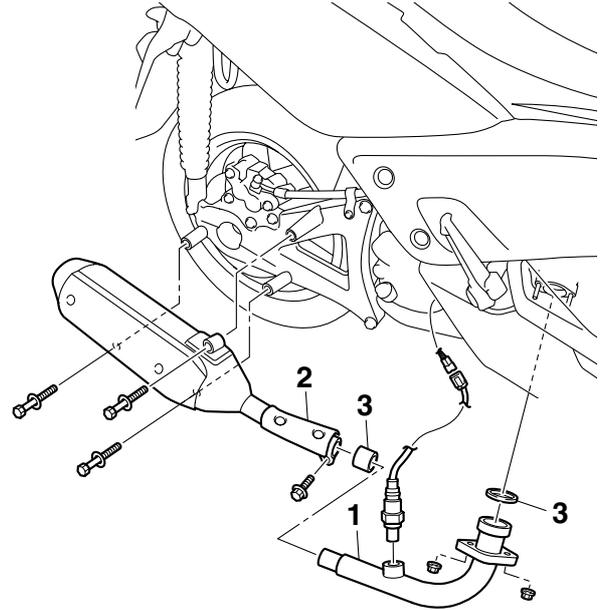
EAS21080

CHECKING THE EXHAUST SYSTEM

1. Check:
 - Exhaust pipe "1"
 - Muffler "2"
 - Cracks/damage → Replace.
 - Exhaust system connection
Exhaust gas leaks → Replace the gasket "3".
2. Check:
 - Tightening torque



Exhaust pipe nut	20 Nm (2.0 m·kgf, 14 ft·lbf)
Muffler joint bolt	14 Nm (1.4 m·kgf, 10 ft·lbf)
Muffler mounting bolt	65 Nm (6.5 m·kgf, 47 ft·lbf)
O ₂ sensor	45 Nm (4.5 m·kgf, 32 ft·lbf)



EAS21110

CHECKING THE COOLANT LEVEL

1. Stand the vehicle on a level surface.

TIP

- Place the vehicle on the centerstand.
- Make sure the vehicle is upright.

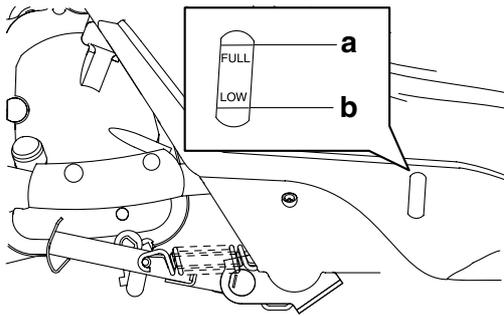
2. Check:

- Coolant level
The coolant level should be between the maximum level mark "a" and minimum level mark "b".
Below the minimum level mark → Add the recommended coolant to the proper level.

ECA37P1019

NOTICE

- Adding water instead of coolant lowers the antifreeze content of the coolant. If water is used instead of coolant, check, and if necessary, correct the antifreeze concentration of the coolant.
- Use only distilled water. However, if distilled water is not available, soft water may be used.



3. Start the engine, warm it up for several minutes, and then turn it off.
4. Check:
 - Coolant level

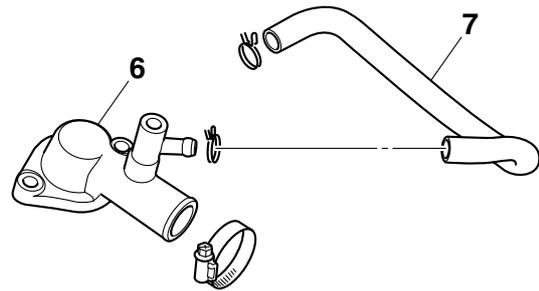
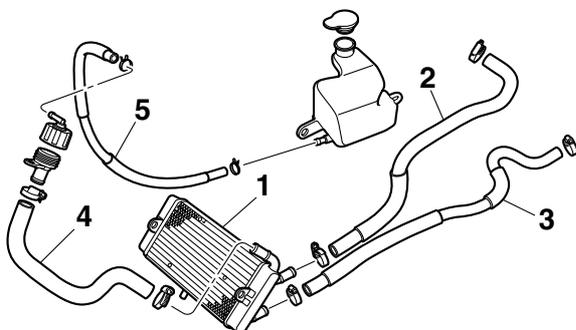
TIP _____

Before checking the coolant level, wait a few minutes until it settles.

EAS21120

CHECKING THE COOLING SYSTEM

1. Remove:
 - Storage box
 - Bottom cover
 - Footrest board
 Refer to "GENERAL CHASSIS" on page 4-1.
2. Check:
 - Radiator "1"
 - Radiator inlet hose "2"
 - Radiator outlet hose "3"
 - Radiator filler hose "4"
 - Coolant reservoir hose "5"
 - Thermostat cover "6"
 - Thermostat inlet hose "7"
 Cracks/damage → Replace.
 Refer to "RADIATOR (YP250R)" on page 6-8 and "THERMOSTAT (YP250R)" on page 6-10.

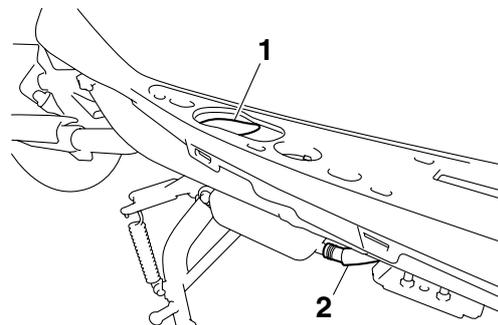


3. Install:
 - Footrest board
 - Bottom cover
 - Storage box
 Refer to "GENERAL CHASSIS" on page 4-1.

EAS21130

CHANGING THE COOLANT

1. Remove:
 - Bottom cover
 Refer to "GENERAL CHASSIS" on page 4-1.
2. Remove:
 - Coolant reservoir cap "1"
3. Disconnect:
 - Coolant reservoir hose "2"



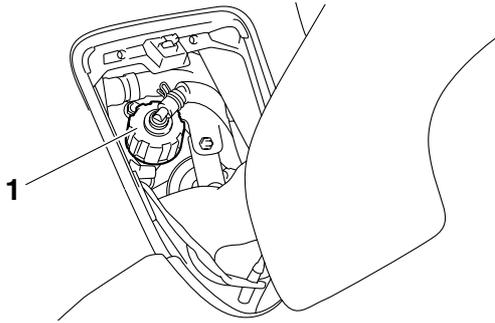
4. Drain:
 - Coolant
(from the coolant reservoir)
5. Remove:
 - Radiator cap "1"

EWA37P1004

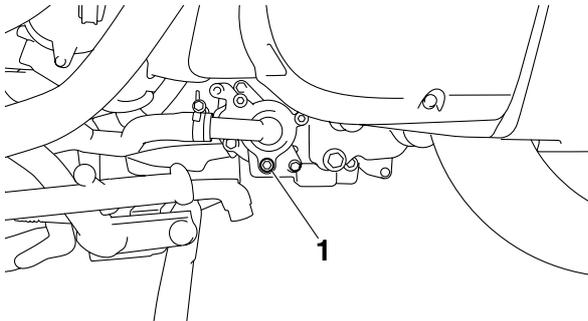
⚠ WARNING

A hot radiator is under pressure. Therefore, do not remove the radiator cap when the engine is hot. Scalding hot fluid and steam may be blown out, which could cause serious injury. When the engine has cooled, open the radiator cap as follows:

Place a thick rag or a towel over the radiator cap and slowly turn the radiator cap counter-clockwise to allow any residual pressure to escape. When the hissing sound has stopped, remove the cap.



6. Remove:
- Coolant drain bolt (water pump) “1” (along with the copper washer)



7. Drain:
- Coolant (from the engine and radiator)
8. Install:
- Coolant drain bolt (water pump) (along with the copper washer **New**)



Coolant drain bolt (water pump)
10 Nm (1.0 m·kgf, 7.2 ft·lbf)

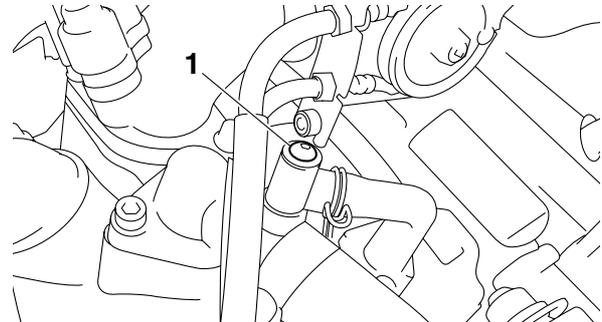
9. Connect:
- Coolant reservoir hose
10. Fill:
- Cooling system (with the specified amount of the recommended coolant)



Recommended antifreeze
High-quality ethylene glycol antifreeze containing corrosion inhibitors for aluminum engines
Mixing ratio
1:1 (antifreeze:water)
Radiator capacity (including all routes)
1.00 L (1.06 US qt, 0.88 Imp.qt)
Coolant reservoir capacity (up to the maximum level mark)
0.25 L (0.26 US qt, 0.22 Imp.qt)

TIP

The specified amount of coolant is a standard amount. Fill the cooling system with coolant until coolant comes out of the air bleed bolt hole “1”.



Handling notes for coolant

Coolant is potentially harmful and should be handled with special care.

EWA13040

WARNING

- If coolant splashes in your eyes, thoroughly wash them with water and consult a doctor.
- If coolant splashes on your clothes, quickly wash it away with water and then with soap and water.
- If coolant is swallowed, induce vomiting and get immediate medical attention.

ECA37P1020

NOTICE

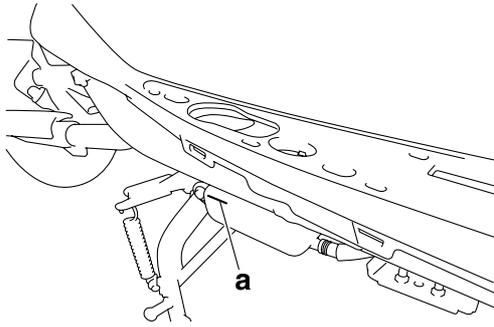
- Adding water instead of coolant lowers the antifreeze content of the coolant. If water is used instead of coolant, check, and if necessary, correct the antifreeze concentration of the coolant.
- Use only distilled water. However, if distilled water is not available, soft water may be used.
- If coolant comes into contact with painted surfaces, immediately wash them with water.
- Do not mix different types of antifreeze.

11. Install:

- Radiator cap

12. Fill:

- Coolant reservoir (with the recommended coolant to the maximum level mark “a”)



13. Install:

- Coolant reservoir cap

14. Start the engine, warm it up for several minutes, and then turn it off.

15. Check:

- Coolant level

Refer to "CHECKING THE COOLANT LEVEL" on page 3-31.

TIP _____

Before checking the coolant level, wait a few minutes until the coolant has settled.

16. Install:

- Bottom cover

Refer to "GENERAL CHASSIS" on page 4-1.

EAS21140

CHASSIS

EAS21240

CHECKING THE BRAKE FLUID LEVEL

1. Stand the vehicle on a level surface.

TIP

- Place the vehicle on the centerstand.
- Make sure the vehicle is upright.

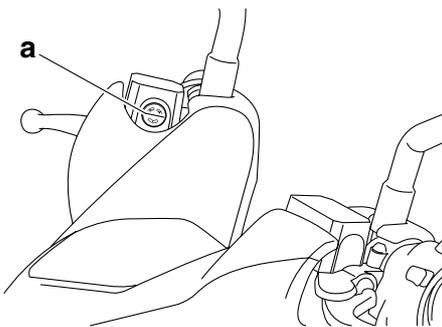
2. Check:

- Brake fluid level
Below the minimum level mark "a" → Add the recommended brake fluid to the proper level.

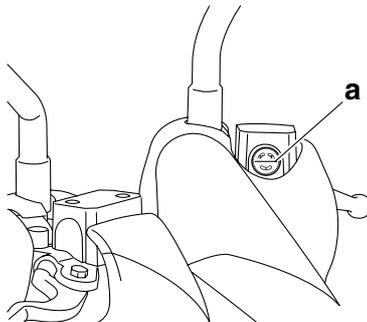


Front brake
Recommended fluid
DOT 4
Rear brake
Recommended fluid
DOT 4

A



B



- A. Front brake
B. Rear brake

EWA13540

WARNING

- Use only the designated brake fluid. Other brake fluids may cause the rubber seals to deteriorate, causing leakage and poor brake performance.
- Refill with the same type of brake fluid that is already in the system. Mixing brake fluids may result in a harmful chemical reaction, leading to poor brake performance.

- When refilling, be careful that water does not enter the brake master cylinder reservoir. Water will significantly lower the boiling point of the brake fluid and could cause vapor lock.

ECA13540

NOTICE

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

TIP

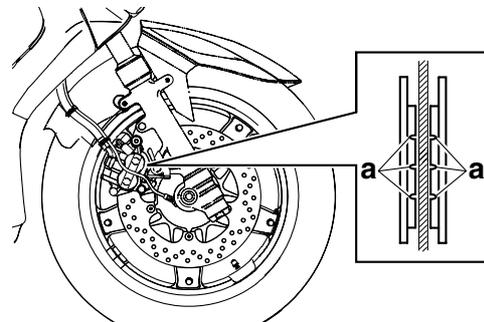
In order to ensure a correct reading of the brake fluid level, make sure the top of the brake fluid reservoir is horizontal.

EAS21250

CHECKING THE FRONT BRAKE PADS

The following procedure applies to all of the brake pads.

1. Operate the brake.
2. Check:
 - Front brake pad
Wear indicator grooves "a" have almost disappeared → Replace the brake pads as a set.
Refer to "FRONT BRAKE" on page 4-17.



EAS37P1130

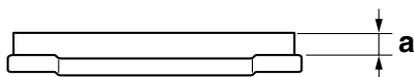
CHECKING THE REAR BRAKE PADS (YP125R)

The following procedure applies to all of the brake pads.

1. Operate the brake.
2. Check:
 - Rear brake pad
Wear limit "a" reached → Replace the brake pads as a set.
Refer to "REAR BRAKE" on page 4-29.



Limit
0.8 mm (0.03 in)

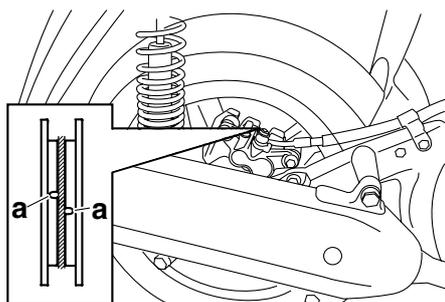


EAS21260

CHECKING THE REAR BRAKE PADS (YP250R)

The following procedure applies to all of the brake pads.

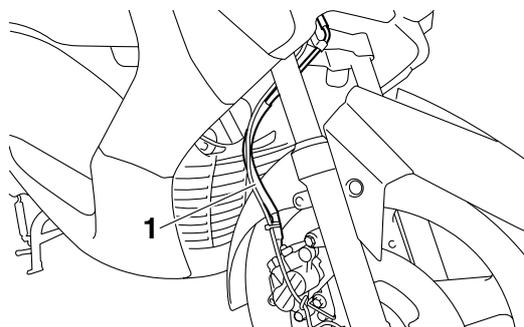
1. Operate the brake.
2. Check:
 - Rear brake pad
Wear indicator groove "a" has almost disappeared → Replace the brake pads as a set. Refer to "REAR BRAKE" on page 4-29.



EAS21270

CHECKING THE FRONT BRAKE HOSE

1. Check:
 - Brake hose "1"
Cracks/damage/wear → Replace.

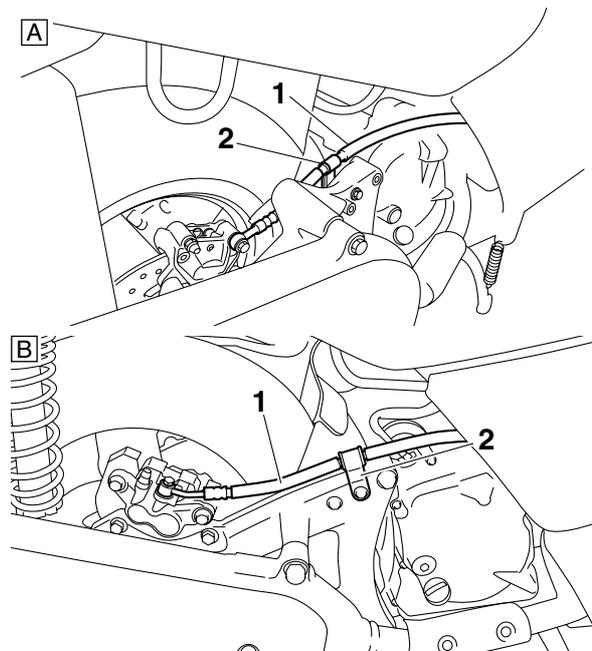


2. Hold the vehicle upright and apply the front brake several times.
3. Check:
 - Brake hose
Brake fluid leakage → Replace the damaged hose. Refer to "FRONT BRAKE" on page 4-17.

EAS21290

CHECKING THE REAR BRAKE HOSE

1. Check:
 - Brake hose "1"
Cracks/damage/wear → Replace.
2. Check:
 - Brake hose holder "2"
Loose connection → Connect.



- A. YP125R
B. YP250R

3. Hold the vehicle upright and apply the rear brake several times.
4. Check:
 - Brake hose
Brake fluid leakage → Replace the damaged hose. Refer to "REAR BRAKE" on page 4-29.

EAS21350

BLEEDING THE HYDRAULIC BRAKE SYSTEM

EWA37P1005



Bleed the hydraulic brake system whenever:

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

TIP

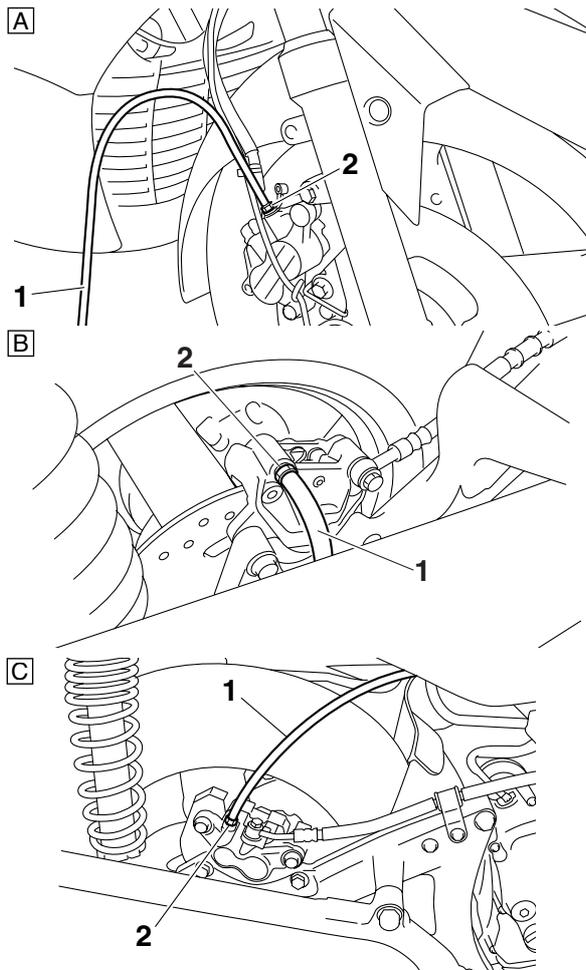
- Be careful not to spill any brake fluid or allow the brake master cylinder reservoir to overflow.

- When bleeding the hydraulic brake system, make sure there is always enough brake fluid before applying the brake. Ignoring this precaution could allow air to enter the hydraulic brake system, considerably lengthening the bleeding procedure.
- If bleeding is difficult, it may be necessary to let the brake fluid settle for a few hours. Repeat the bleeding procedure when the tiny bubbles in the hose have disappeared.

1. Bleed:

- Hydraulic brake system

- Fill the brake master cylinder reservoir to the proper level with the recommended brake fluid.
- Install the brake master cylinder reservoir diaphragm.
- Connect a clear plastic hose "1" tightly to the bleed screw "2".



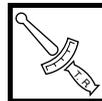
- A. Front brake caliper
 B. Rear brake caliper (YP125R)
 C. Rear brake caliper (YP250R)

- Place the other end of the hose into a container.
- Slowly apply the brake several times.
- Fully pull the brake lever and hold it in position.
- Loosen the bleed screw.

TIP

Loosening the bleed screw will release the pressure and cause the brake lever to contact the throttle grip or handlebar grip.

- Tighten the bleed screw, and then release the brake lever.
- Repeat steps (e) to (h) until all of the air bubbles have disappeared from the brake fluid in the plastic hose.
- Tighten the bleed screw to specification.



Front brake caliper bleed screw
 6 Nm (0.6 m·kgf, 4.3 ft·lbf)
Rear brake caliper bleed screw (YP125R)
 14 Nm (1.4 m·kgf, 10 ft·lbf)
Rear brake caliper bleed screw (YP250R)
 6 Nm (0.6 m·kgf, 4.3 ft·lbf)

- Fill the brake master cylinder reservoir to the proper level with the recommended brake fluid.
 Refer to "CHECKING THE BRAKE FLUID LEVEL" on page 3-35.

EWA13110

⚠ WARNING

After bleeding the hydraulic brake system, check the brake operation.

EAS21510

CHECKING AND ADJUSTING THE STEERING HEAD

- Stand the vehicle on a level surface.

EWA13120

⚠ WARNING

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

TIP

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

- Check:

- Steering head
 Grasp the bottom of the front fork legs and gently rock the front fork.

5. Install:
- Lower handlebar holder
- Refer to "STEERING HEAD" on page 4-57.

EAS21630

CHECKING THE FRONT FORK

1. Stand the vehicle on a level surface.

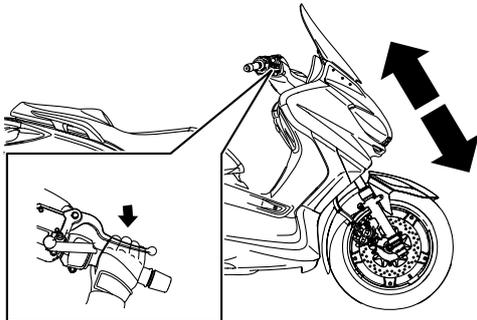
EWA13120



WARNING

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

2. Check:
- Inner tubes
Damage/scratches → Replace.
 - Front fork leg
Oil leaks between inner tube and outer tube → Replace the oil seal.
3. Hold the vehicle upright and apply the front brake.
4. Check:
- Front fork operation
Push down hard on the handlebar several times and check if the front fork rebounds smoothly.
Rough movement → Repair.
Refer to "FRONT FORK" on page 4-50.



EAS21630

ADJUSTING THE REAR SHOCK ABSORBER ASSEMBLIES

The following procedure applies to both of the rear shock absorber assemblies.

EWA37P1006



WARNING

- **Securely support the vehicle so that there is no danger of it falling over.**
- **Always adjust both rear shock absorber assemblies evenly. Uneven adjustment can result in poor handling and loss of stability.**

Spring preload

ECA13590

NOTICE

Never go beyond the maximum or minimum adjustment positions.

1. Adjust:
- Spring preload

- a. Turn the adjusting ring "1" in direction "a" or "b".

Align the desired position on the adjusting ring with the stopper "2".

Direction "a"

Spring preload is increased (suspension is harder).

Direction "b"

Spring preload is decreased (suspension is softer).



Spring preload adjusting positions

Minimum

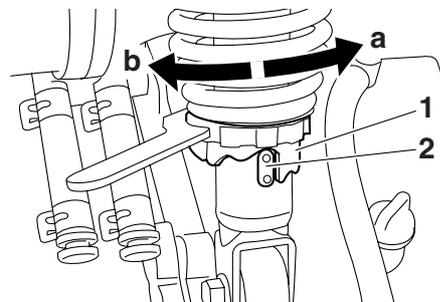
1

Standard

2

Maximum

4

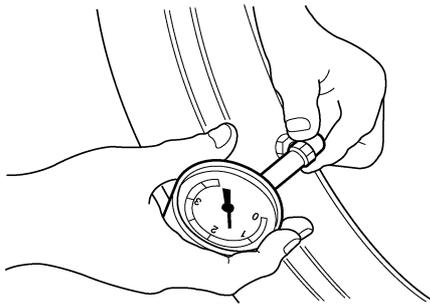


EAS21650

CHECKING THE TIRES

The following procedure applies to both of the tires.

1. Check:
- Tire pressure
Out of specification → Regulate.



EWA13180

WARNING

- The tire pressure should only be checked and regulated when the tire temperature equals the ambient air temperature.
- The tire pressure and the suspension must be adjusted according to the total weight (including cargo, rider, passenger and accessories) and the anticipated riding speed.
- Operation of an overloaded vehicle could cause tire damage, an accident or an injury. **NEVER OVERLOAD THE VEHICLE.**



Tire air pressure (measured on cold tires)

Loading condition

0–90 kg (0–198 lb)

Front

190 kPa (1.90 kgf/cm², 28 psi)

Rear

220 kPa (2.20 kgf/cm², 32 psi)

Loading condition

90 kg–maximum load

Front

210 kPa (2.10 kgf/cm², 30 psi)

Rear

250 kPa (2.50 kgf/cm², 36 psi)

Maximum load

186 kg (410 lb)

* Total weight of rider, passenger, cargo and accessories

EWA13190

WARNING

It is dangerous to ride with a worn-out tire. When the tire tread reaches the wear limit, replace the tire immediately.

2. Check:

- Tire surfaces
Damage/wear → Replace the tire.

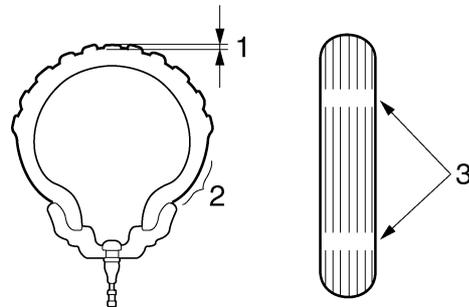


Wear limit (front)

1.6 mm (0.06 in)

Wear limit (rear)

1.6 mm (0.06 in)



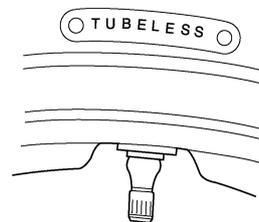
1. Tire tread depth
2. Side wall
3. Wear indicator

EWA14080

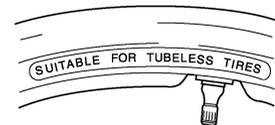
WARNING

- Do not use a tubeless tire on a wheel designed only for tube tires to avoid tire failure and personal injury from sudden deflation.
- When using a tube tire, be sure to install the correct tube.
- Always replace a new tube tire and a new tube as a set.
- To avoid pinching the tube, make sure the wheel rim band and tube are centered in the wheel groove.
- Patching a punctured tube is not recommended. If it is absolutely necessary to do so, use great care and replace the tube as soon as possible with a good quality replacement.

A



B



- A. Tire
- B. Wheel

Tube wheel	Tube tire only
Tubeless wheel	Tube or tubeless tire

EWA37P1007

WARNING

After extensive tests, the tires listed below have been approved by Yamaha Motor España, S.A. for this model. The front and rear tires should always be by the same manufacturer and of the same design. No guarantee concerning handling characteristics can be given if a tire combination other than one approved by Yamaha is used on this vehicle.



**Front tire
Size**

120/70-15 M/C 56P (PIRELLI)
120/70-15 M/C 56S (MICHELIN)

Manufacturer/model
MICHELIN/GOLD STANDARD
PIRELLI/GTS23



**Rear tire
Size**

140/70-14 M/C 68P (PIRELLI)
140/70-14 M/C 68S (MICHELIN)

Manufacturer/model
MICHELIN/GOLD STANDARD
PIRELLI/GTS24

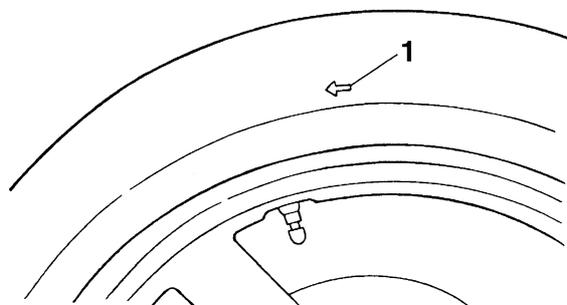
EWA13210

WARNING

New tires have a relatively low grip on the road surface until they have been slightly worn. Therefore, approximately 100 km should be traveled at normal speed before any high-speed riding is done.

TIP

For tires with a direction of rotation mark "1": Install the tire with the mark pointing in the direction of wheel rotation.



EAS21670

CHECKING THE WHEELS

The following procedure applies to both of the wheels.

1. Check:

- Wheel
Damage/out-of-round → Replace.

EWA13260

WARNING

Never attempt to make any repairs to the wheel.

TIP

After a tire or wheel has been changed or replaced, always balance the wheel.

EAS21690

CHECKING AND LUBRICATING THE CABLES

The following procedure applies to all of the inner and outer cables.

EWA37P1008

WARNING

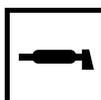
A damaged outer cable may cause the cable to corrode and interfere with its movement. Replace damaged outer cable and inner cables as soon as possible.

1. Check:

- Outer cable
Damage → Replace.

2. Check:

- Cable operation
Rough movement → Lubricate.



Recommended lubricant
Engine oil or a suitable cable lubricant

TIP

Hold the cable end upright and pour a few drops of lubricant into the cable sheath or use a suitable lubricating device.

EAS21700

LUBRICATING THE LEVERS

Lubricate the pivoting points and metal-to-metal moving parts of the levers.

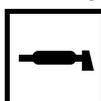


Recommended lubricant
Silicone grease

EAS21720

LUBRICATING THE SIDESTAND

Lubricate the pivoting point and metal-to-metal moving parts of the sidestand.



Recommended lubricant
Lithium-soap-based grease

EAS21730

LUBRICATING THE CENTERSTAND

Lubricate the pivoting point and metal-to-metal moving parts of the centerstand.

	<p>Recommended lubricant Lithium-soap-based grease</p>
---	--

EAS21750

ELECTRICAL SYSTEM

EAS21760

CHECKING AND CHARGING THE BATTERY

Refer to "ELECTRICAL COMPONENTS" on page 8-71.

EAS21770

CHECKING THE FUSES

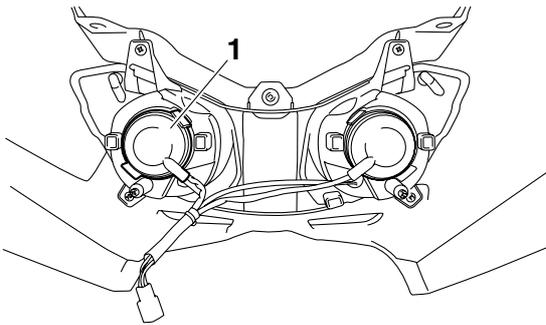
Refer to "ELECTRICAL COMPONENTS" on page 8-71.

EAS21780

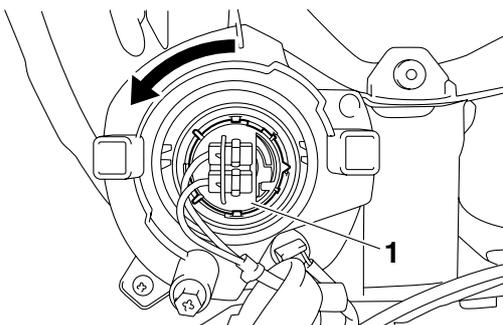
REPLACING A HEADLIGHT BULB

To replace a high beam headlight bulb

1. Remove:
 - Front cowling assembly
Refer to "GENERAL CHASSIS" on page 4-1.
2. Remove:
 - Headlight bulb cover "1"



3. Remove:
 - Headlight bulb holder "1"
(with the headlight bulb)



4. Remove:
 - Headlight bulb

EWA13320

WARNING

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

5. Install:

- Headlight bulb **New**
Secure the new headlight bulb with the headlight bulb holder.

ECA13690

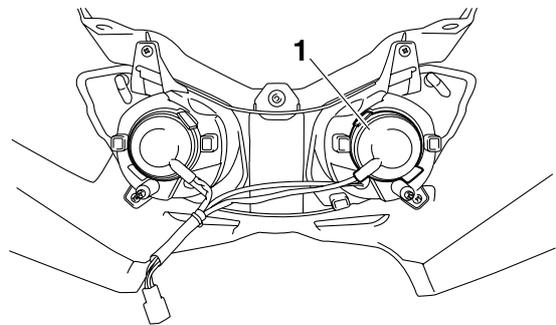
NOTICE

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.

6. Install:
 - Headlight bulb holder
(with the headlight bulb)
7. Install:
 - Headlight bulb cover
8. Install:
 - Front cowling assembly
Refer to "GENERAL CHASSIS" on page 4-1.

To replace a low beam headlight bulb

1. Remove:
 - Front cowling assembly
Refer to "GENERAL CHASSIS" on page 4-1.
2. Remove:
 - Headlight bulb cover "1"

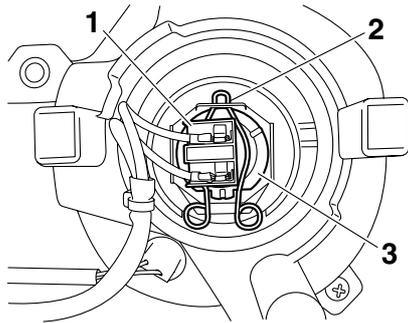


3. Disconnect:
 - Headlight coupler "1"
4. Detach:
 - Headlight bulb holder "2"
5. Remove:
 - Headlight bulb "3"

EWA13320

WARNING

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



6. Install:

- Headlight bulb **New**

ECA13690

NOTICE

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.

7. Attach:

- Headlight bulb holder

8. Connect:

- Headlight coupler

9. Install:

- Headlight bulb cover

10. Install:

- Front cowling assembly
Refer to "GENERAL CHASSIS" on page 4-1.

EAS21800

ADJUSTING THE HEADLIGHT BEAM

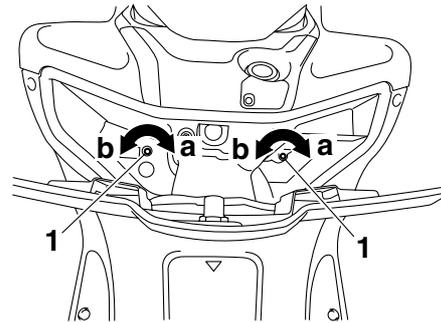
1. Adjust:

- Headlight beam (vertically)



- Remove the adjusting screw accessing cap.
- Turn the adjusting screw "1" in direction "a" or "b".

Direction "a"
Headlight beam is raised.
Direction "b"
Headlight beam is lowered.



c. Install the adjusting screw accessing cap.



CHASSIS

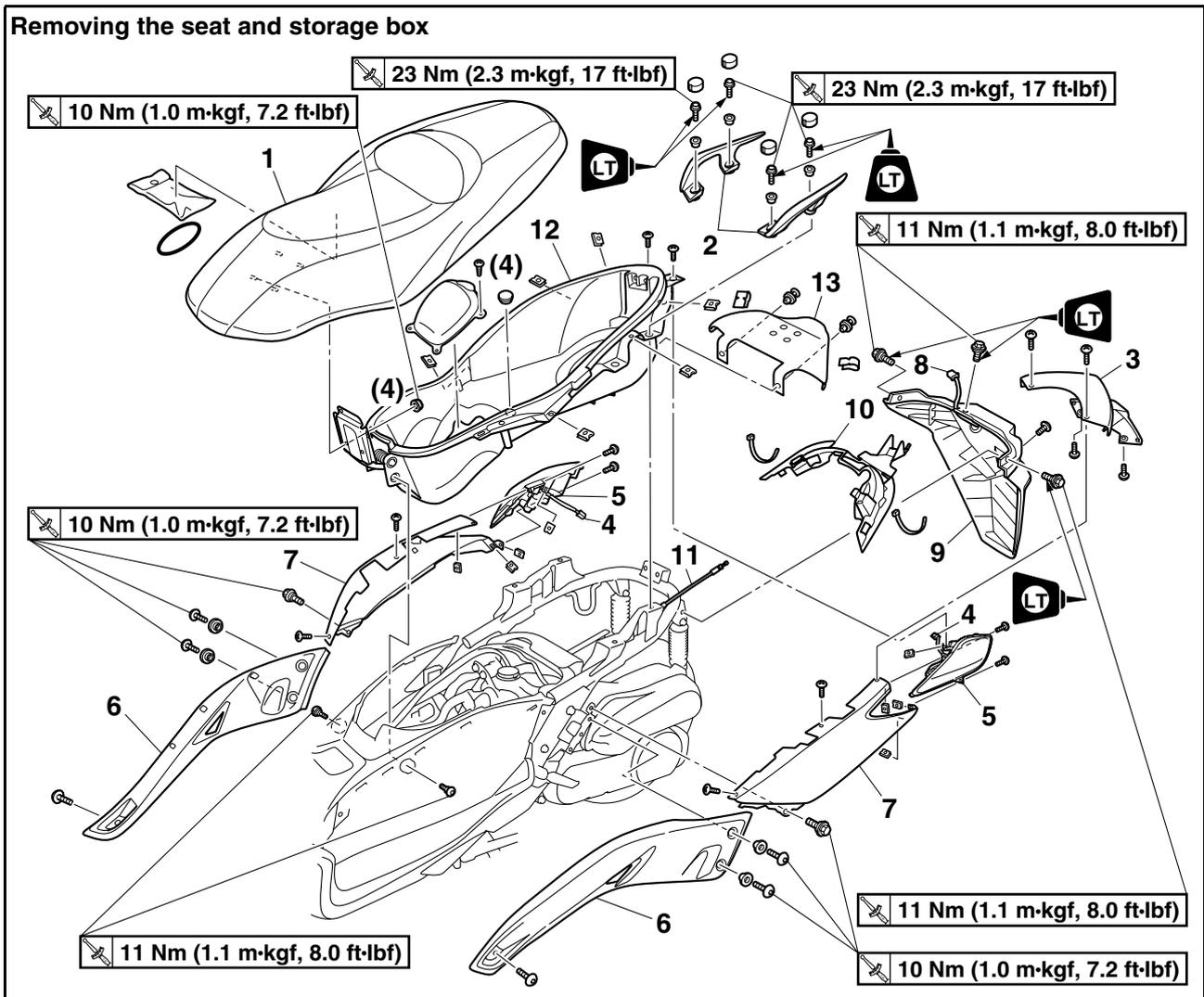
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EAS21830

GENERAL CHASSIS

Removing the seat and storage box



Order	Job/Parts to remove	Q'ty	Remarks
1	Seat	1	
2	Grab bar	2	
3	Rear cover	1	
4	Tail/brake light assembly coupler	2	Disconnect.
5	Tail/brake light assembly	2	
6	Center panel	2	
7	Rear panel	2	
8	License plate light coupler	1	Disconnect.
9	Mudguard	1	
10	Water guard	1	
11	Seat lock cable	1	Disconnect.
12	Storage box	1	
13	Safety protector	1	
			For installation, reverse the removal procedure.

EAS37P1079

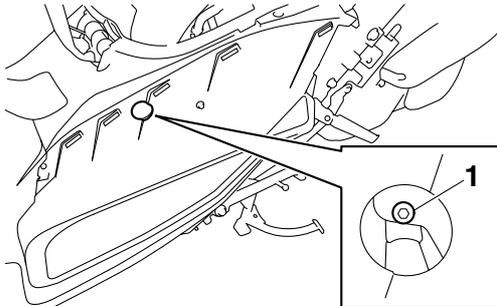
REMOVING THE STORAGE BOX

1. Remove:

- Storage box bolts "1"

TIP

Be sure not to let the storage box bolts fall inside the vehicle when removing them.

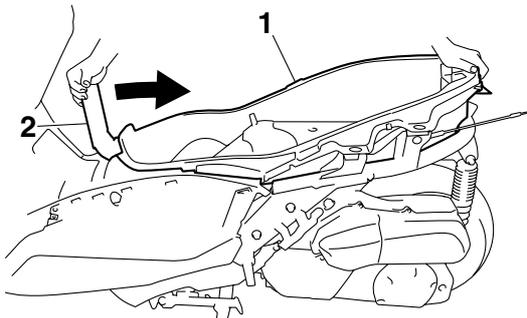
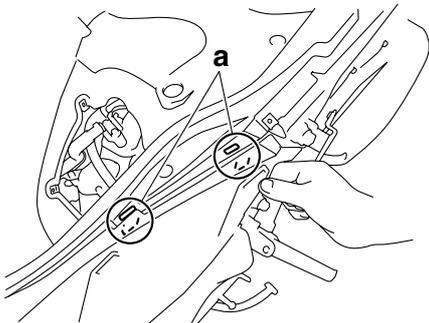


2. Remove:

- Storage box "1"

TIP

- Unhook the tabs "a" from the storage box.
- Remove the storage box by moving the seat hinge "2" in the direction of the arrow shown.



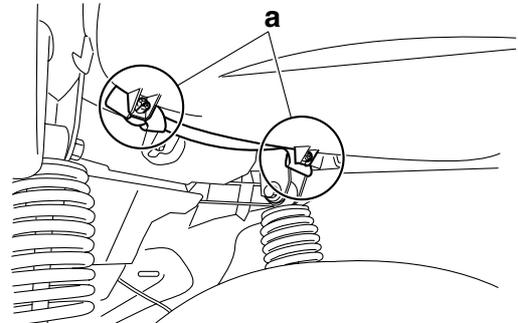
EAS37P1138

INSTALLING THE SEAT

1. Install:

- Safety protector

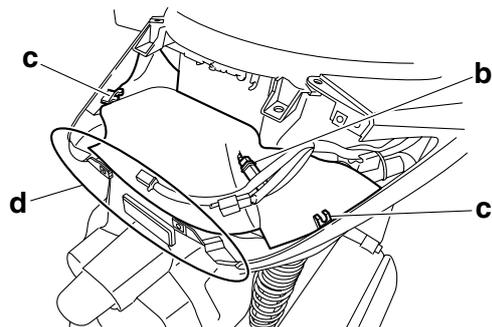
a. Fold the tabs on the safety protector so that the holes in each tab are aligned, and then fasten the tabs to the storage box with the quick fastener screws at the locations "a" shown in the illustration.



- b. Install the storage box, seat lock cable, water guard, and mudguard to the vehicle.
- c. Pass the license plate light coupler (license plate light side) through the hole in the safety protector at the location "b" shown in the illustration, and then connect the coupler.
- d. Install the rear panels to the vehicle.
- e. Align the holes in the safety protector with the projections on the water guard at the locations "c" shown in the illustration, and then fasten the safety protector with the clips at the locations where the holes are aligned with the projections.

TIP

Make sure that the edge of the safety protector is positioned to the inside of the rear panels at the location "d" shown in the illustration.



2. Install:

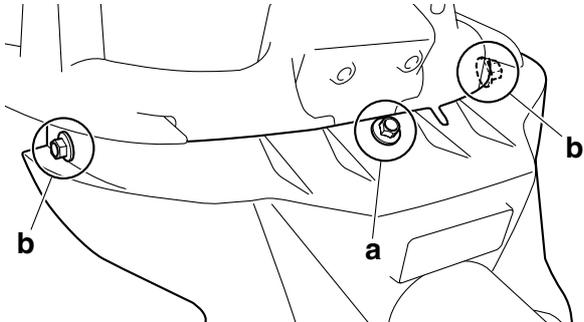
- Mudguard



Mudguard bolt
11 Nm (1.1 m·kgf, 8.0 ft·lbf)
LOCTITE®

TIP

When tightening the mudguard bolts, tighten the center bolt "a" first, and then tighten the side bolts "b".

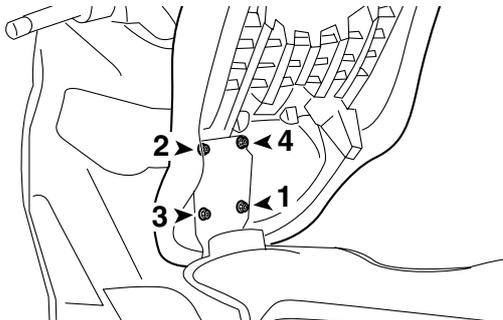


3. Install:
- Seat

	<p>Seat nut 10 Nm (1.0 m·kgf, 7.2 ft·lbf)</p>
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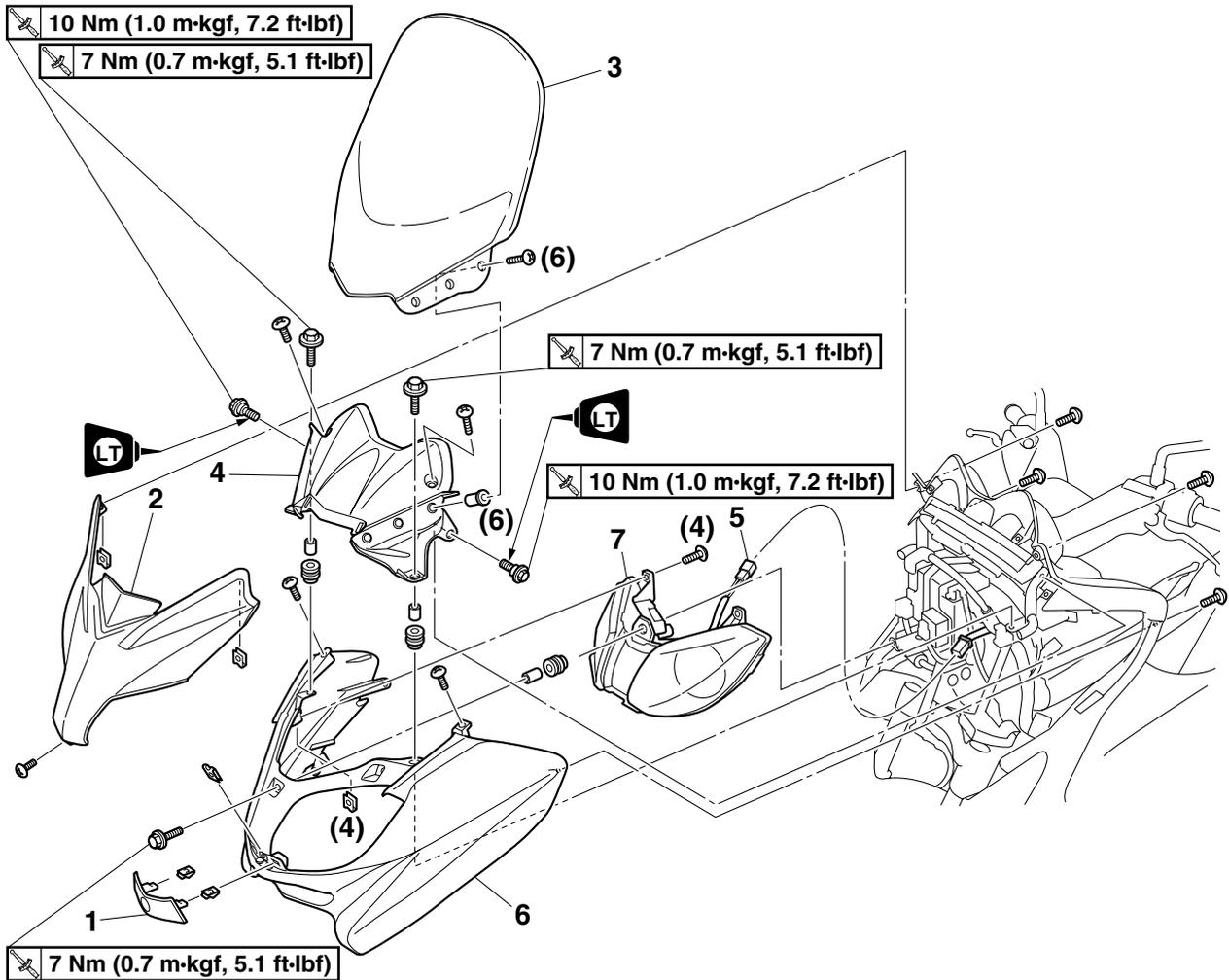
TIP

Tighten the seat nuts in the proper tightening sequence as shown.



GENERAL CHASSIS

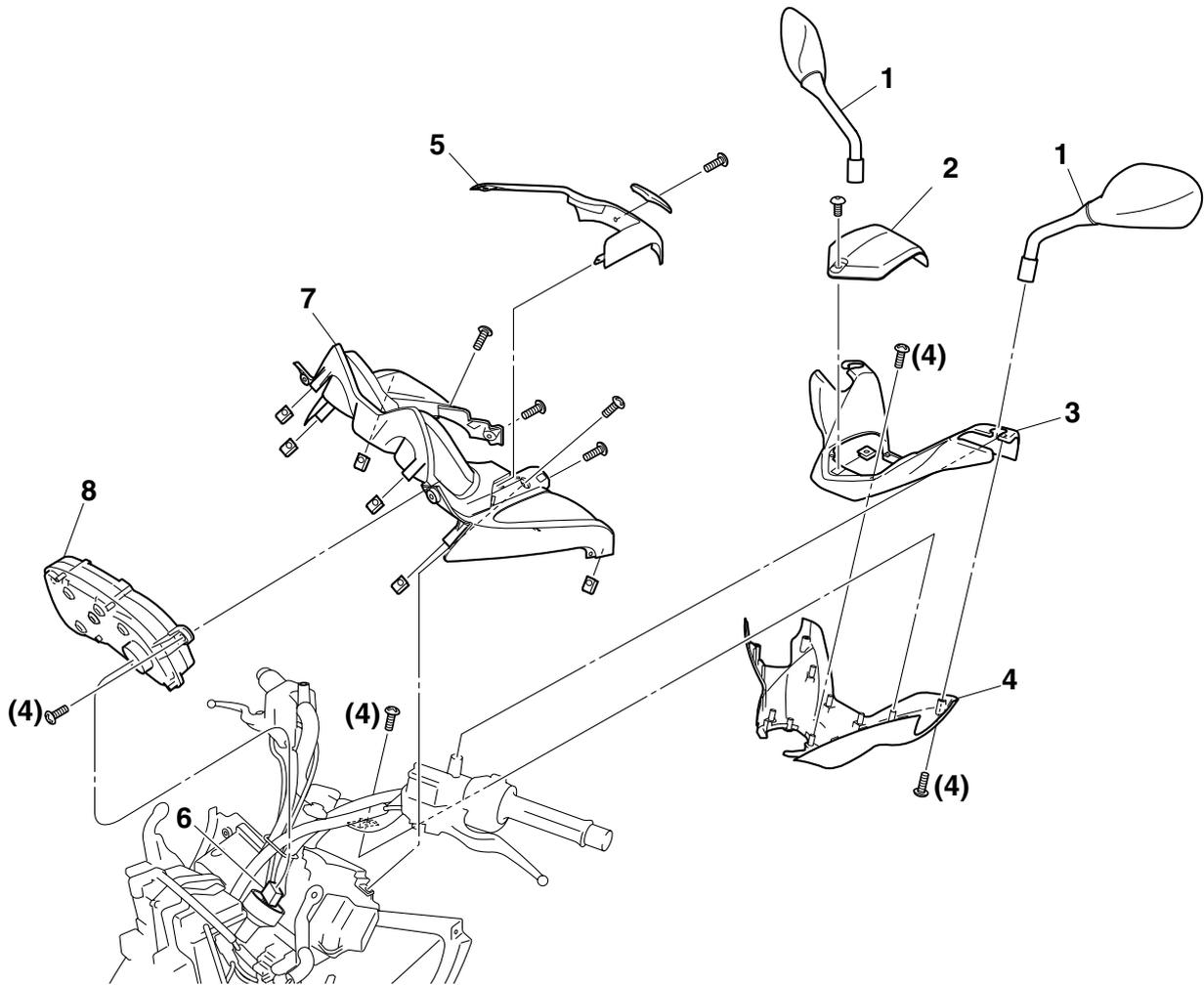
Removing the headlight assembly



Order	Job/Parts to remove	Q'ty	Remarks
1	Logo plate	1	
2	Upper panel	1	
3	Windshield	1	
4	Windshield bracket	1	
5	Headlight assembly coupler	1	Disconnect.
6	Front cowling assembly	1	
7	Headlight assembly	1	
			For installation, reverse the removal procedure.

GENERAL CHASSIS

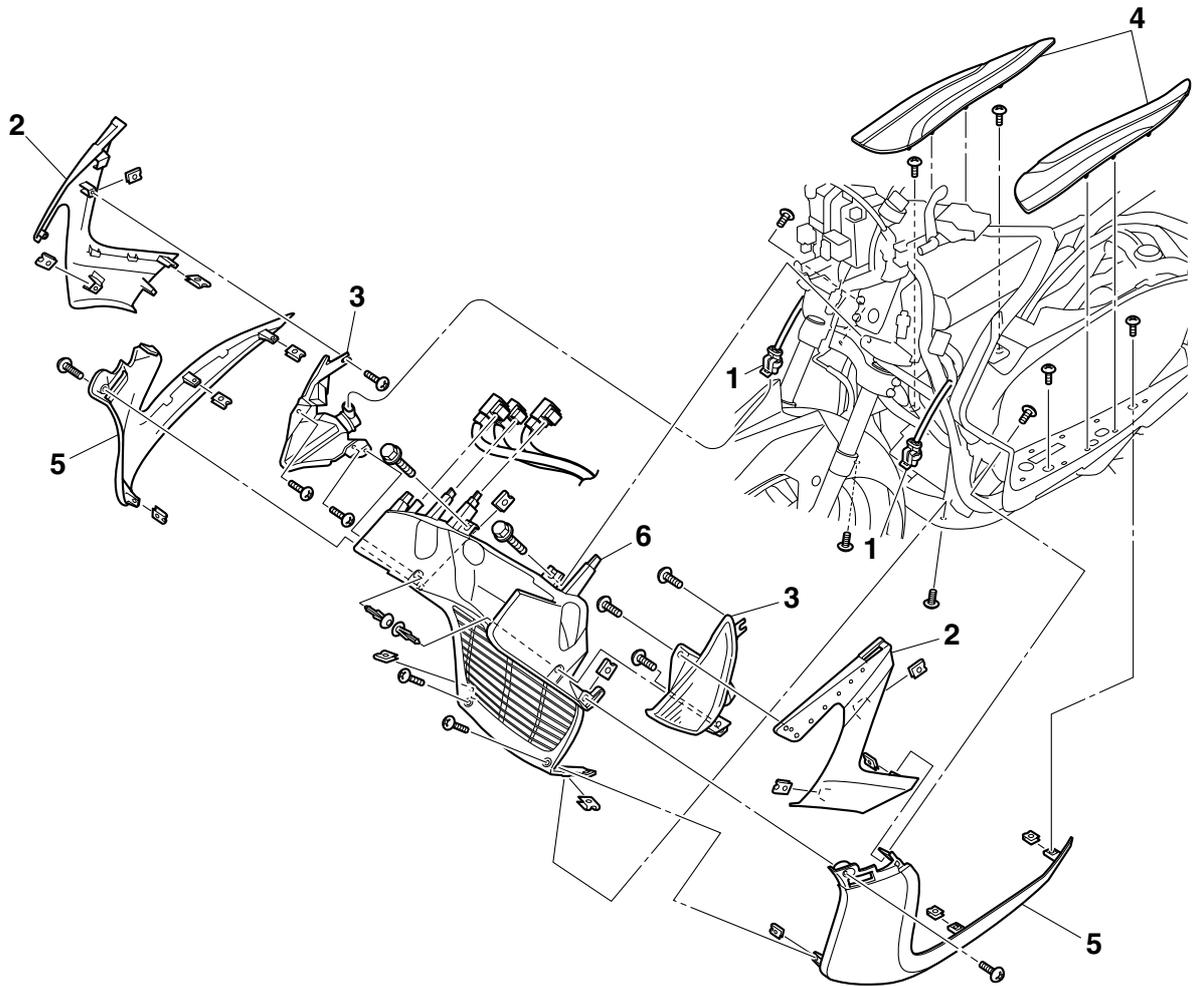
Removing the meter assembly



Order	Job/Parts to remove	Q'ty	Remarks
	Windshield		Refer to "Removing the headlight assembly".
1	Rearview mirror	2	
2	Center handlebar cover	1	
3	Upper handlebar cover	1	
4	Lower handlebar cover	1	
5	Storage compartment molding	1	
6	Meter assembly coupler	1	Disconnect.
7	Meter assembly cover	1	
8	Meter assembly	1	
			For installation, reverse the removal procedure.

GENERAL CHASSIS

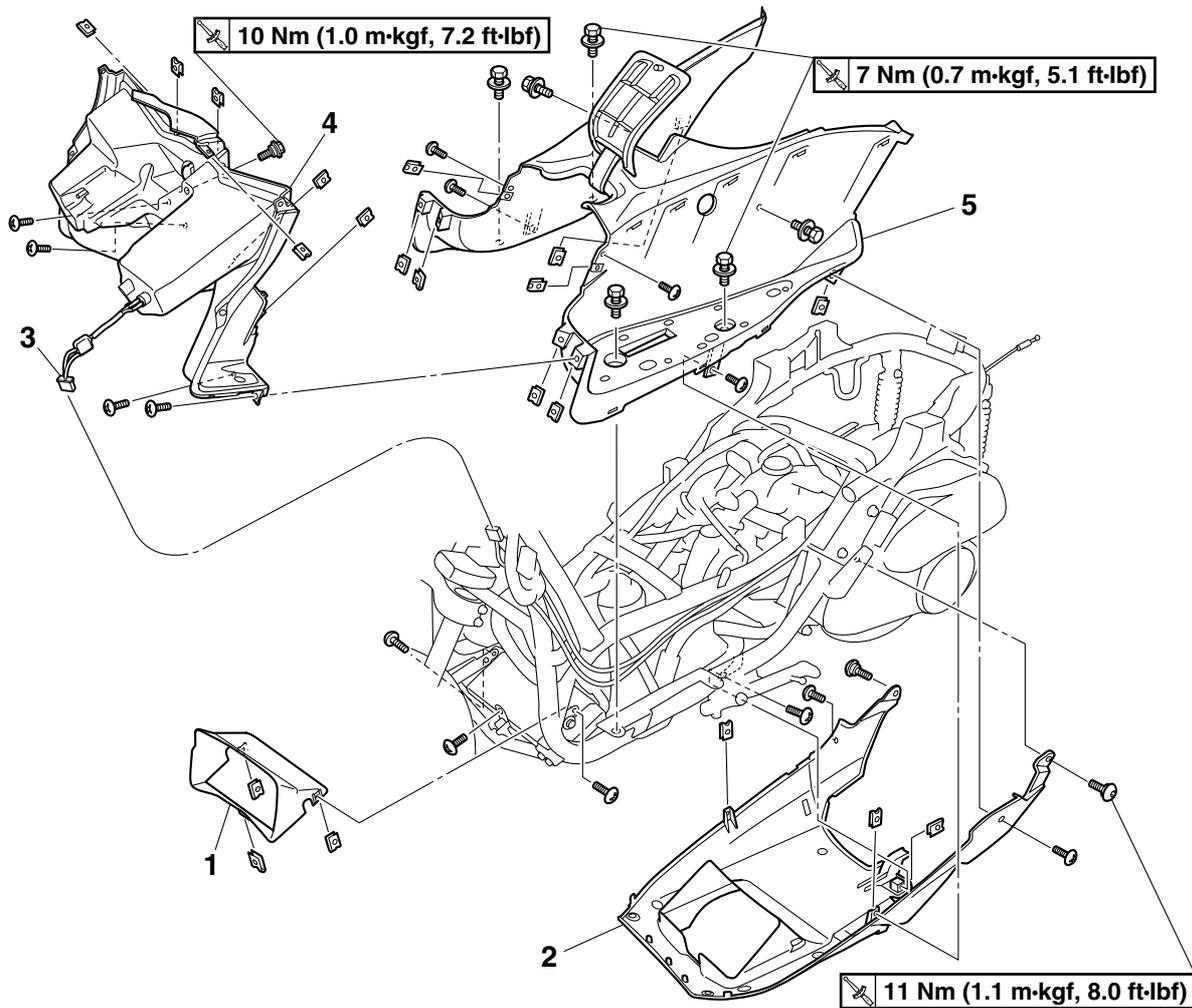
Removing the radiator cover



Order	Job/Parts to remove	Q'ty	Remarks
	Storage box		Refer to "Removing the seat and storage box".
	Front cowling assembly		Refer to "Removing the headlight assembly".
1	Front turn signal light coupler	2	Disconnect.
2	Front upper panel	2	
3	Front turn signal light	2	
4	Footrest board mat	2	
5	Front lower panel	2	
6	Radiator cover	1	
			For installation, reverse the removal procedure.

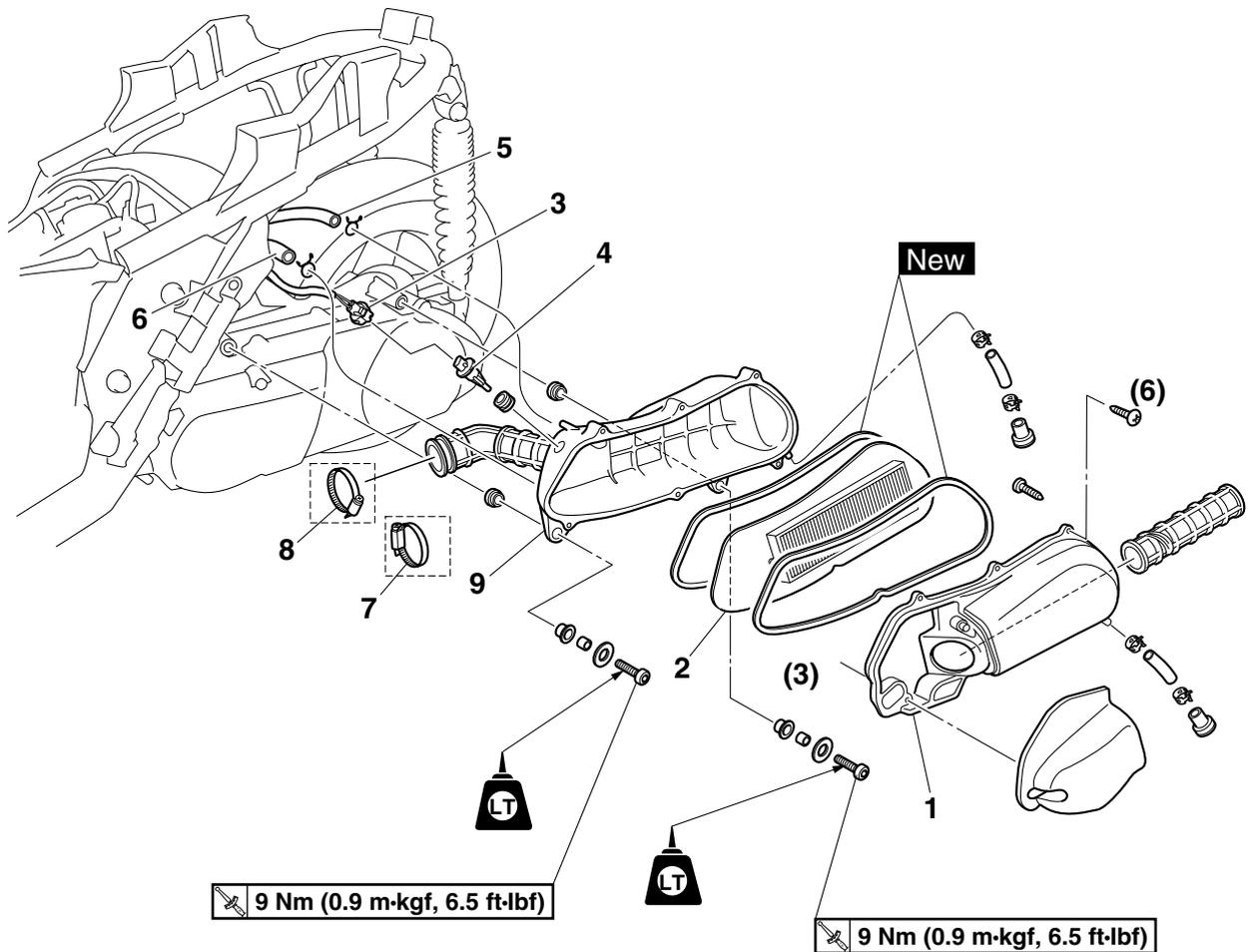
GENERAL CHASSIS

Removing the storage compartment



Order	Job/Parts to remove	Q'ty	Remarks
	Radiator cover		Refer to "Removing the radiator cover".
1	Radiator air duct	1	
2	Bottom cover	1	
3	Auxiliary DC jack coupler (OPTION)	1	Disconnect.
4	Storage compartment	1	
5	Footrest board	1	
			For installation, reverse the removal procedure.

Removing the air filter case assembly



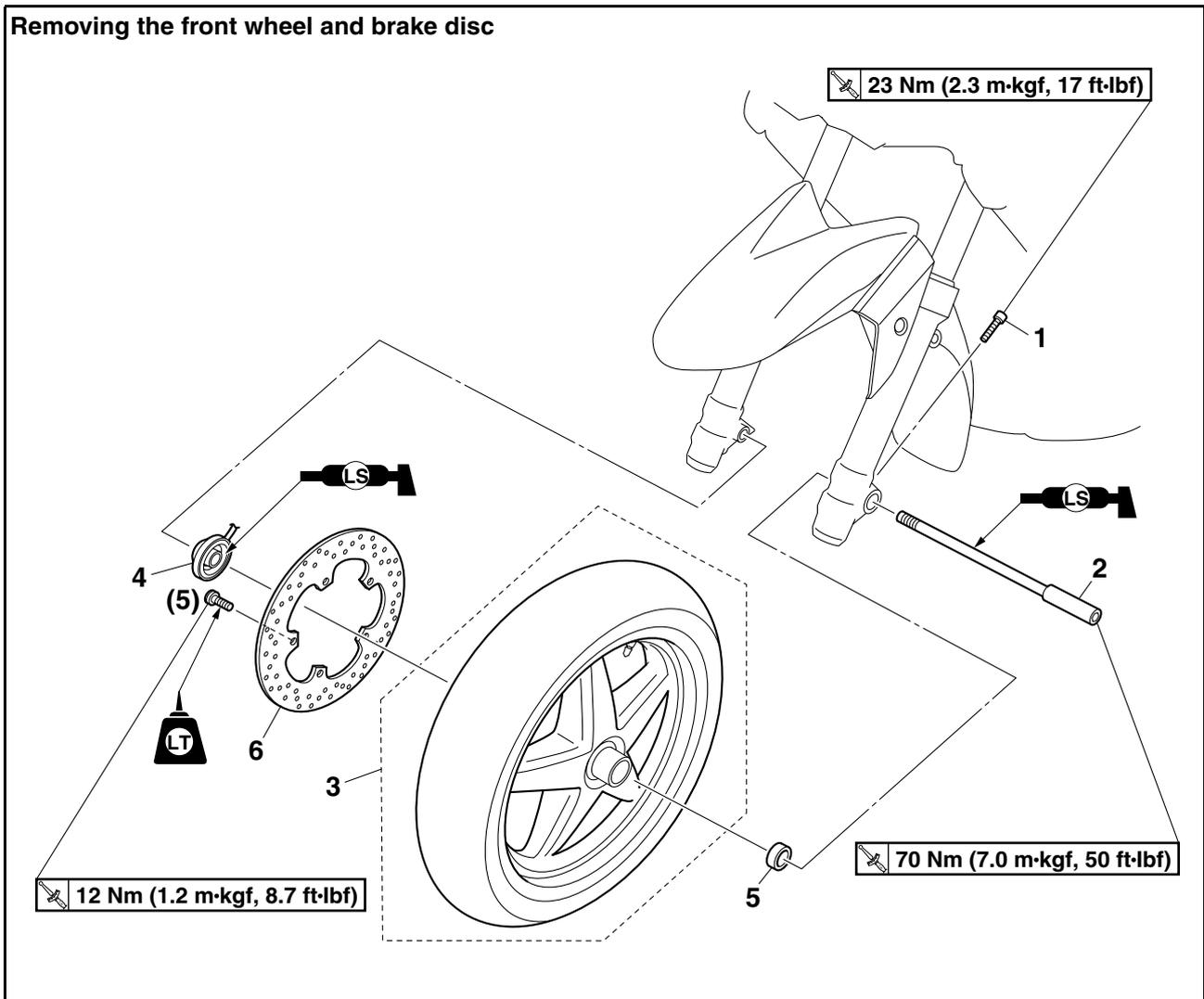
Order	Job/Parts to remove	Q'ty	Remarks
	Storage box		Refer to "Removing the seat and storage box".
1	Air filter case cover	1	
2	Air filter element	1	
3	Intake air temperature sensor coupler	1	Disconnect.
4	Intake air temperature sensor	1	
5	Cylinder head breather hose	1	Disconnect.
6	Breather hose (air filter case to throttle body)	1	Disconnect. YP250R only
7	Air filter case joint screw clamp	1	YP125R
8	Air filter case joint screw clamp	1	YP250R
9	Air filter case	1	
			For installation, reverse the removal procedure.

FRONT WHEEL

EAS21870

FRONT WHEEL

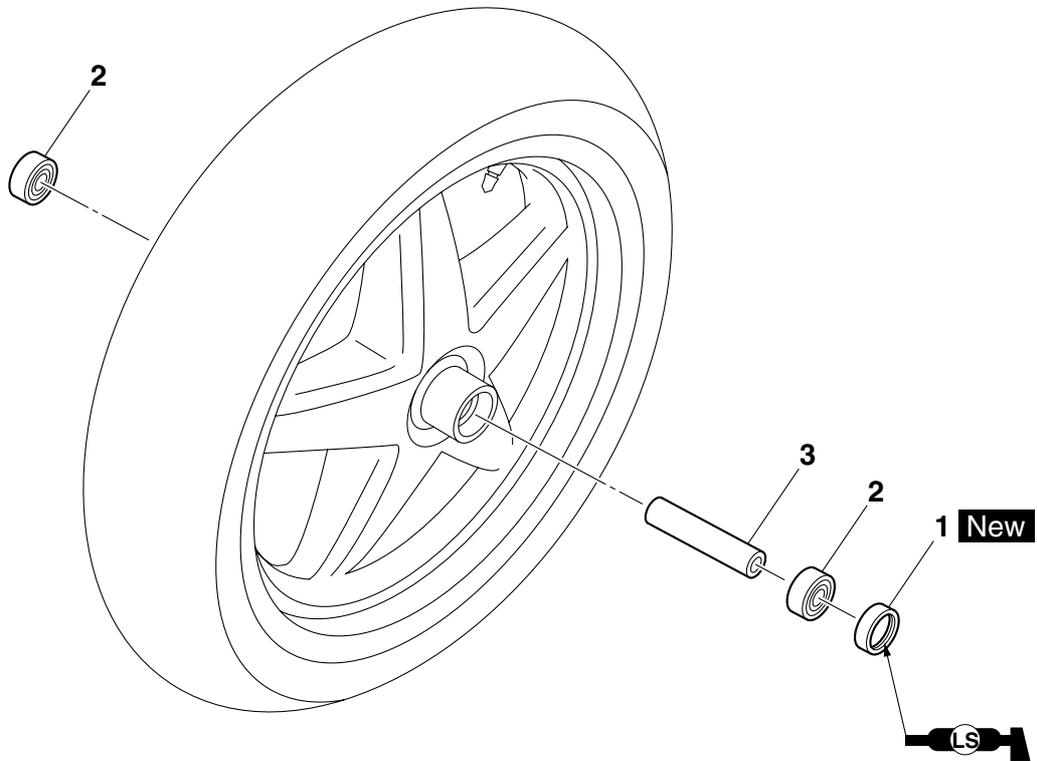
Removing the front wheel and brake disc



Order	Job/Parts to remove	Q'ty	Remarks
1	Front wheel axle pinch bolt	1	Loosen.
2	Front wheel axle	1	
3	Front wheel	1	
4	Speed sensor	1	
5	Spacer	1	
6	Front brake disc	1	
			For installation, reverse the removal procedure.

FRONT WHEEL

Disassembling the front wheel



Order	Job/Parts to remove	Q'ty	Remarks
1	Oil seal	1	
2	Wheel bearing	2	
3	Spacer	1	
			For assembly, reverse the disassembly procedure.

EAS21890

REMOVING THE FRONT WHEEL

1. Stand the vehicle on a level surface.

EWA13120

⚠ WARNING

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

TIP

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

2. Remove:

- Front wheel

TIP

Do not apply the front brake lever when removing the front wheel.

EAS21910

DISASSEMBLING THE FRONT WHEEL

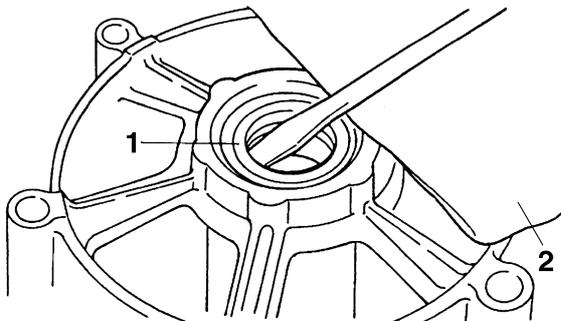
1. Remove:

- Oil seal
- Wheel bearings

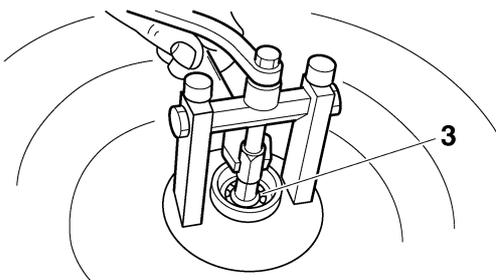
- a. Clean the surface of the front wheel hub.
- b. Remove the oil seal "1" with a flat-head screwdriver.

TIP

To prevent damaging the wheel, place a rag "2" between the screwdriver and the wheel surface.



- c. Remove the wheel bearings "3" with a general bearing puller.



EAS21920

CHECKING THE FRONT WHEEL

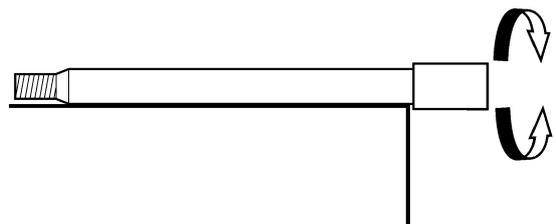
1. Check:

- Wheel axle
 - Roll the wheel axle on a flat surface.
 - Bends → Replace.

EWA13460

⚠ WARNING

Do not attempt to straighten a bent wheel axle.



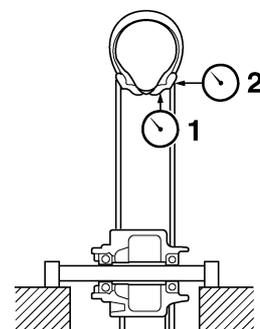
2. Check:

- Tire
 - Front wheel
 - Damage/wear → Replace.
- Refer to "CHECKING THE TIRES" on page 3-39 and "CHECKING THE WHEELS" on page 3-41.

3. Measure:

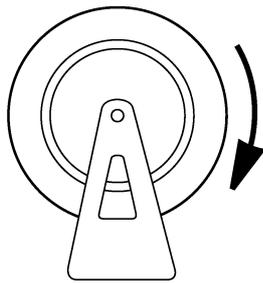
- Radial wheel runout "1"
 - Lateral wheel runout "2"
- Over the specified limits → Replace.

	Radial wheel runout limit
	1.0 mm (0.04 in)
	Lateral wheel runout limit
	0.5 mm (0.02 in)



4. Check:

- Wheel bearings
 - Front wheel turns roughly or is loose → Replace the wheel bearings.
- Oil seal
 - Damage/wear → Replace.



EAS21960

ASSEMBLING THE FRONT WHEEL

1. Install:

- Wheel bearings **New**

a. Install the new wheel bearing (right side).

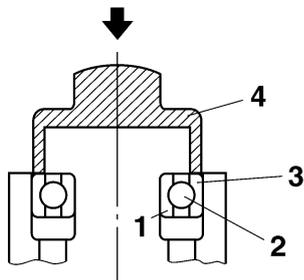
ECA37P1029

NOTICE

Do not contact the wheel bearing inner race "1" or balls "2". Contact should be made only with the outer race "3".

TIP

Use a socket "4" that matches the diameter of the wheel bearing outer race.

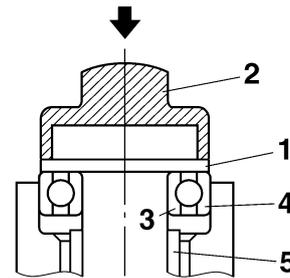


b. Install the spacer.

c. Install the new wheel bearing (left side).

TIP

Place a suitable washer "1" between the socket "2" and the bearing so that both the inner race "3" and outer race "4" are pressed at the same time, and then press the bearing until the inner race makes contact with the spacer "5".



EAS21970

ADJUSTING THE FRONT WHEEL STATIC BALANCE

TIP

- After replacing the tire, wheel or both, the front wheel static balance should be adjusted.
- Adjust the front wheel static balance with the brake disc installed.

1. Remove:

- Balancing weight(s)

2. Find:

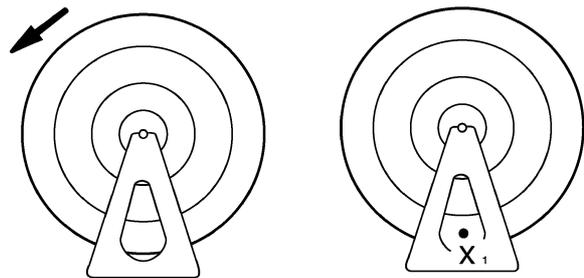
- Front wheel's heavy spot

TIP

Place the front wheel on a suitable balancing stand.

a. Spin the front wheel.

b. When the front wheel stops, put an "X₁" mark at the bottom of the wheel.

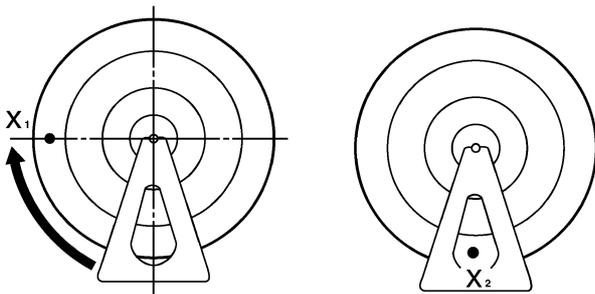


c. Turn the front wheel 90° so that the "X₁" mark is positioned as shown.

d. Release the front wheel.

e. When the wheel stops, put an "X₂" mark at the bottom of the wheel.

FRONT WHEEL



- f. Repeat steps (c) through (e) several times until all the marks come to rest at the same spot.
- g. The spot where all the marks come to rest is the front wheel's heavy spot "X".

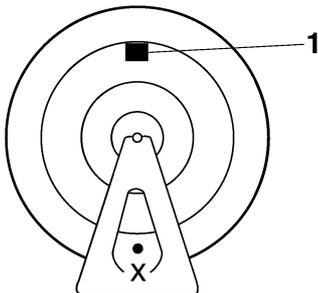
3. Adjust:

- Front wheel static balance

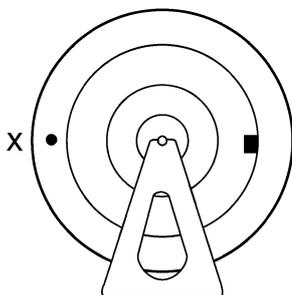
- a. Install a balancing weight "1" onto the rim exactly opposite the heavy spot "X".

TIP

Start with the lightest weight.



- b. Turn the front wheel 90° so that the heavy spot is positioned as shown.

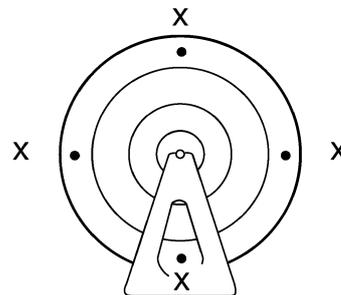


- c. If the heavy spot does not stay in that position, install a heavier weight.
- d. Repeat steps (b) and (c) until the front wheel is balanced.

4. Check:

- Front wheel static balance

- a. Turn the front wheel and make sure it stays at each position shown.



- b. If the front wheel does not remain stationary at all of the positions, rebalance it.

EAS21990

INSTALLING THE FRONT WHEEL (FRONT BRAKE DISC)

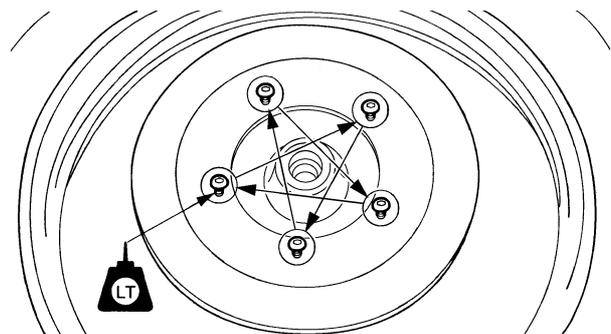
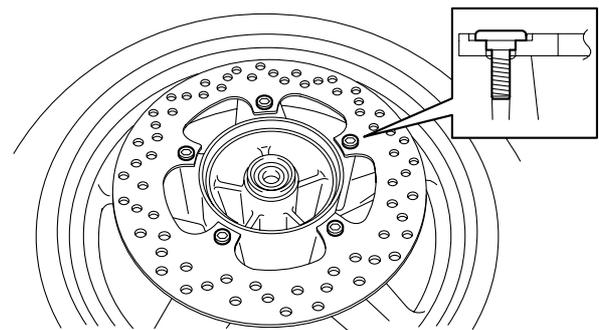
1. Install:
 - Front brake disc



Front brake disc bolt
12 Nm (1.2 m·kgf, 8.7 ft·lbf)
LOCTITE®

TIP

- Install the brake disc so that the recessed portion of the bolt hole faces away from the hub.
- Tighten the brake disc bolts in stages and in a crisscross pattern.



FRONT WHEEL

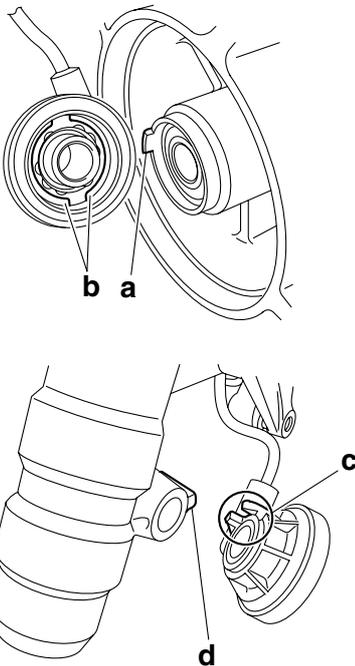
2. Check:
 - Front brake disc
Refer to "CHECKING THE FRONT BRAKE DISC" on page 4-22.
3. Lubricate:
 - Oil seal lips
 - Speed sensor oil seal lip



4. Install:
 - Spacer
 - Speed sensor
 - Front wheel

TIP

- Make sure that the speed sensor and the wheel hub are installed with the projection "a" of the wheel hub inserted in a slot "b" of the speed sensor.
- When installing the speed sensor, make sure that the projection on the wheel hub does not damage the lip of the speed sensor oil seal.
- Make sure that the slot "c" in the speed sensor fits over the stopper "d" on the outer tube.



5. Install:
 - Wheel axle
 - Wheel axle pinch bolt



Wheel axle
70 Nm (7.0 m·kgf, 50 ft·lbf)
Wheel axle pinch bolt
23 Nm (2.3 m·kgf, 17 ft·lbf)

ECA37P1030

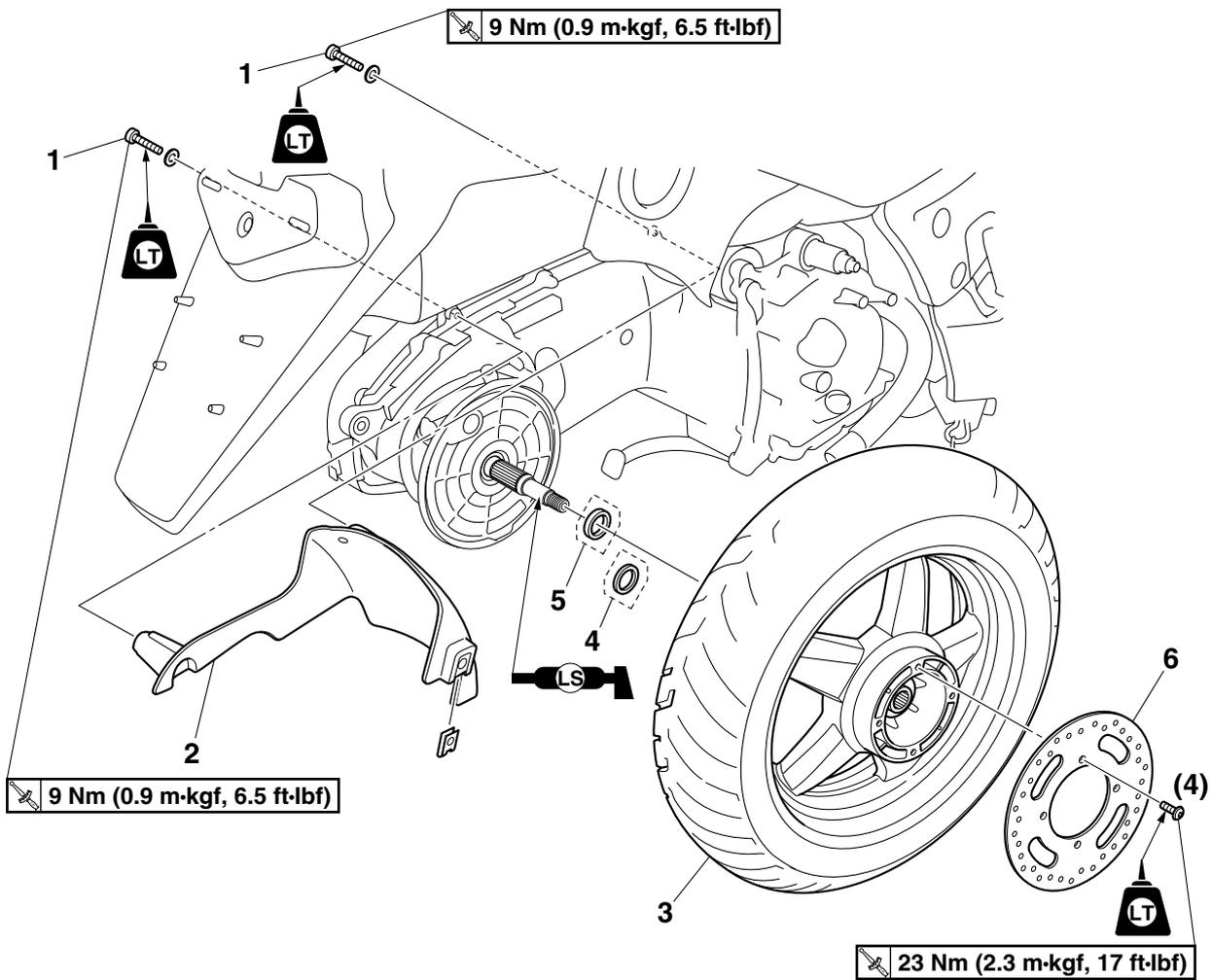
NOTICE

Before tightening the wheel axle, push down hard on the handlebar several times and check if the front fork rebounds smoothly.

EAS22020

REAR WHEEL

Removing the rear wheel and brake disc



Order	Job/Parts to remove	Q'ty	Remarks
	Muffler		Refer to "ENGINE REMOVAL (YP125R)" on page 5-1 and "ENGINE REMOVAL (YP250R)" on page 5-61.
	Swingarm		Refer to "REAR SHOCK ABSORBER ASSEMBLIES AND SWINGARM" on page 4-61.
1	Air filter case mounting bolt	2	
2	Rear fender	1	
3	Rear wheel	1	
4	Washer	1	YP125R
5	Spacer	1	YP250R
6	Rear brake disc	1	
			For installation, reverse the removal procedure.

EAS28760

REMOVING THE REAR WHEEL

1. Stand the vehicle on a level surface.

EWA13120

WARNING

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

TIP

Place the vehicle on the centerstand so that the rear wheel is elevated. Also, place a suitable stand under the engine.

EAS22090

CHECKING THE REAR WHEEL

1. Check:
 - Tire
 - Rear wheel
Damage/wear → Replace.
Refer to “CHECKING THE TIRES” on page 3-39 and “CHECKING THE WHEELS” on page 3-41.
2. Measure:
 - Radial wheel runout
 - Lateral wheel runout
Refer to “CHECKING THE FRONT WHEEL” on page 4-11.



**Radial wheel runout limit
1.0 mm (0.04 in)
Lateral wheel runout limit
0.5 mm (0.02 in)**

EAS22150

ADJUSTING THE REAR WHEEL STATIC BALANCE

TIP

- After replacing the tire, wheel or both, the rear wheel static balance should be adjusted.
- Adjust the rear wheel static balance with the brake disc installed.

1. Adjust:

- Rear wheel static balance
Refer to “ADJUSTING THE FRONT WHEEL STATIC BALANCE” on page 4-12.

EAS28770

INSTALLING THE REAR WHEEL (REAR BRAKE DISC)

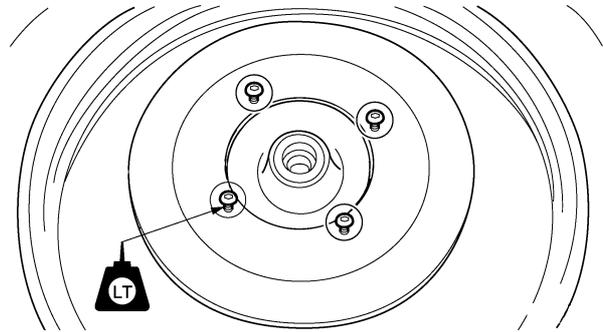
1. Install:
 - Rear brake disc



**Rear brake disc bolt
23 Nm (2.3 m·kgf, 17 ft·lbf)
LOCTITE®**

TIP

Tighten the brake disc bolts in stages and in a crisscross pattern.



2. Check:
 - Rear brake disc
Refer to “CHECKING THE REAR BRAKE DISC” on page 4-37.
3. Install:
 - Rear fender
 - Air filter case mounting bolts



**Air filter case mounting bolt
9 Nm (0.9 m·kgf, 6.5 ft·lbf)
LOCTITE®**

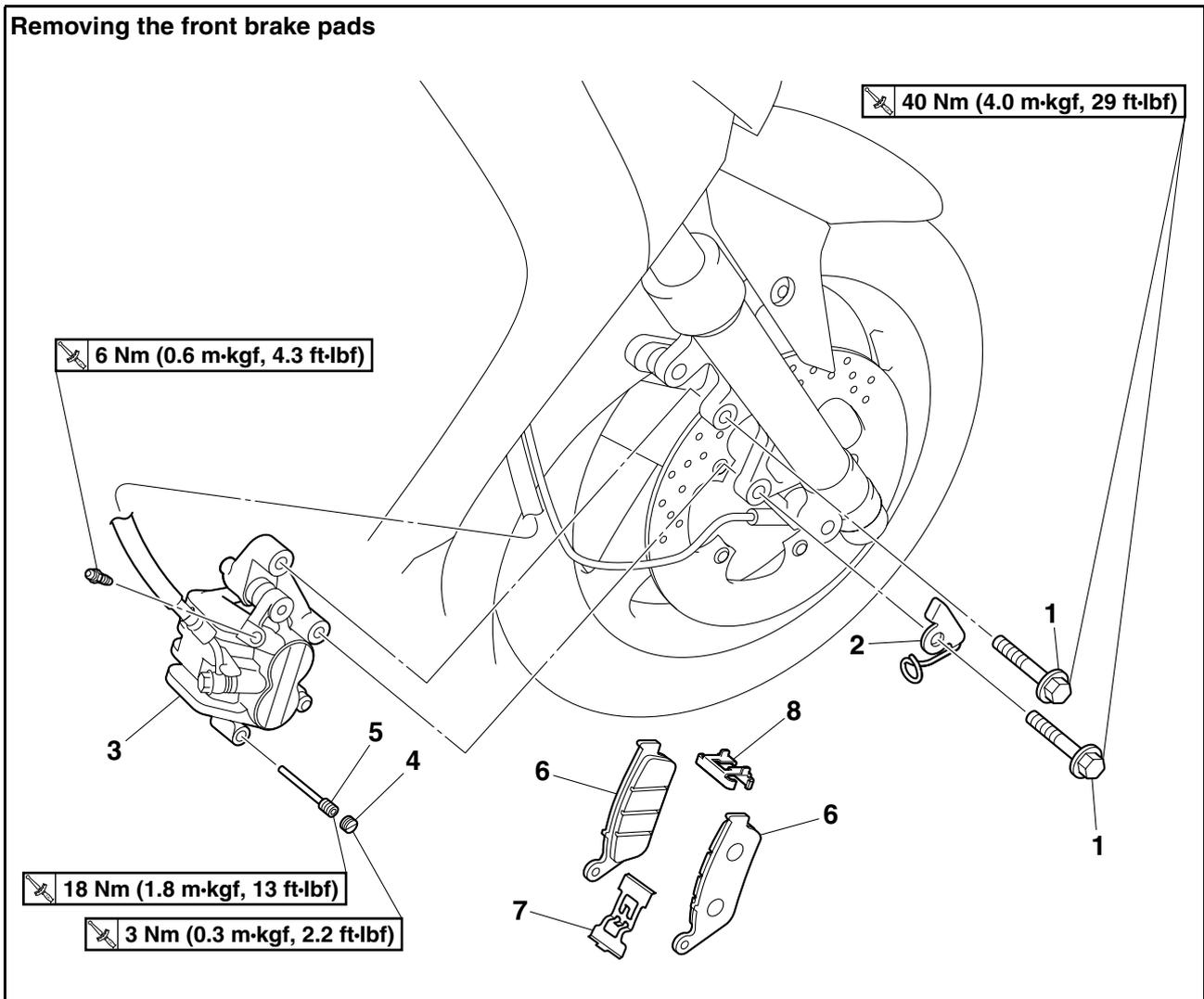
TIP

Place the rear fender between the air filter case and the crankcase, and then install the air filter case mounting bolts.

EAS22210

FRONT BRAKE

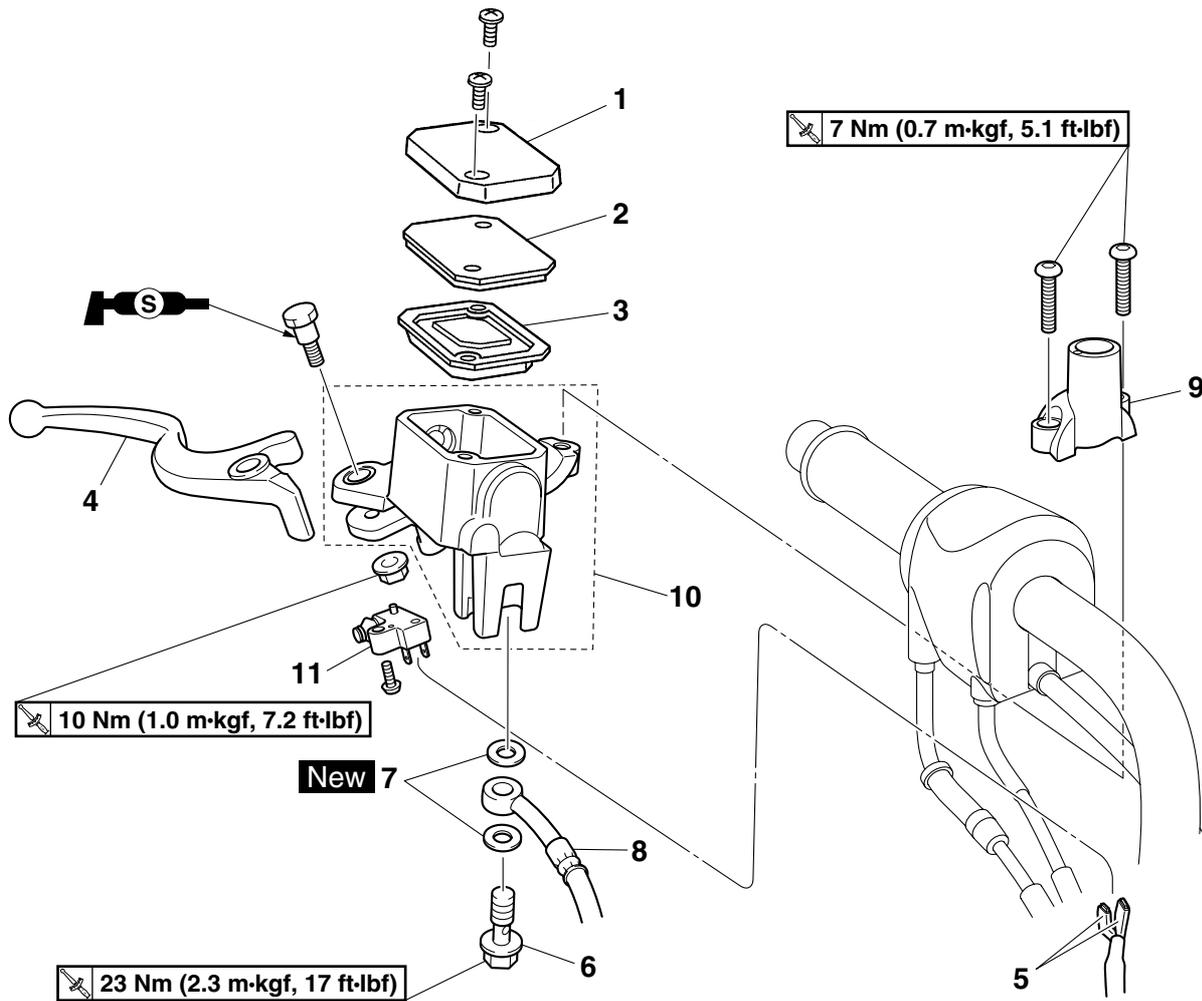
Removing the front brake pads



Order	Job/Parts to remove	Q'ty	Remarks
1	Front brake caliper bolt	2	
2	Speed sensor lead guide	1	
3	Front brake caliper	1	
4	Brake pad pin cap	1	
5	Brake pad pin	1	
6	Front brake pad	2	
7	Brake pad spring	1	
8	Brake pad support	1	
			For installation, reverse the removal procedure.

FRONT BRAKE

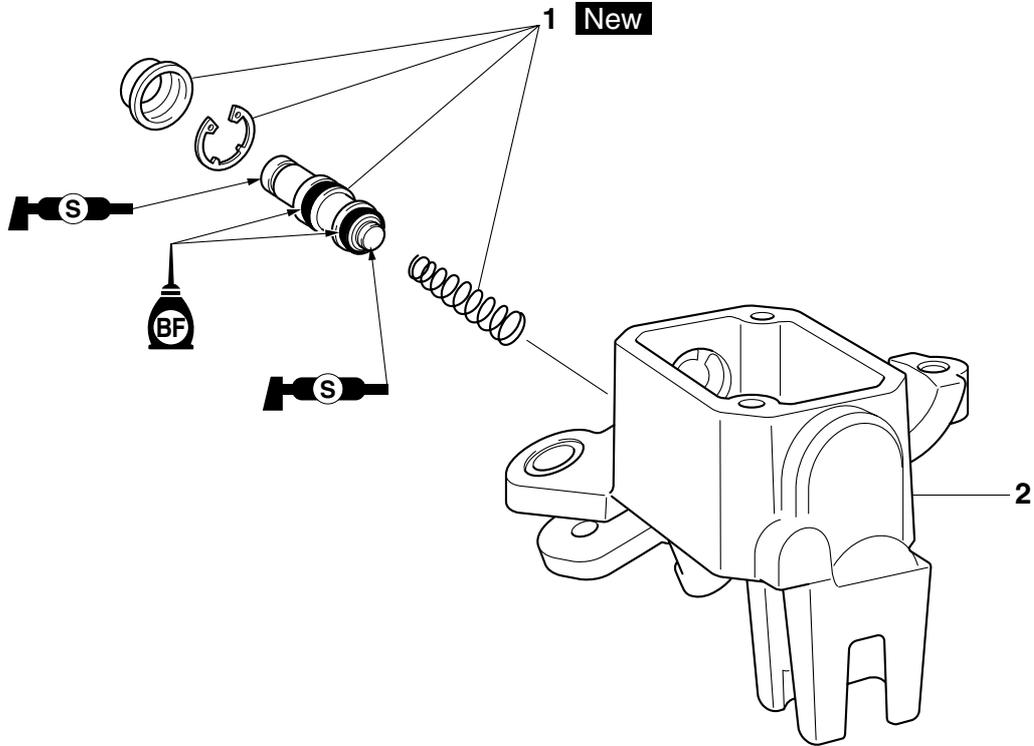
Removing the front brake master cylinder



Order	Job/Parts to remove	Q'ty	Remarks
	Lower handlebar cover		Refer to "GENERAL CHASSIS" on page 4-1.
	Brake fluid		Drain. Refer to "BLEEDING THE HYDRAULIC BRAKE SYSTEM" on page 3-36.
1	Brake master cylinder reservoir cap	1	
2	Brake master cylinder reservoir diaphragm holder	1	
3	Brake master cylinder reservoir diaphragm	1	
4	Front brake lever	1	
5	Front brake light switch connector	2	Disconnect.
6	Brake hose union bolt	1	
7	Copper washer	2	
8	Front brake hose	1	
9	Front brake master cylinder holder	1	
10	Front brake master cylinder	1	
11	Front brake light switch	1	
			For installation, reverse the removal procedure.

FRONT BRAKE

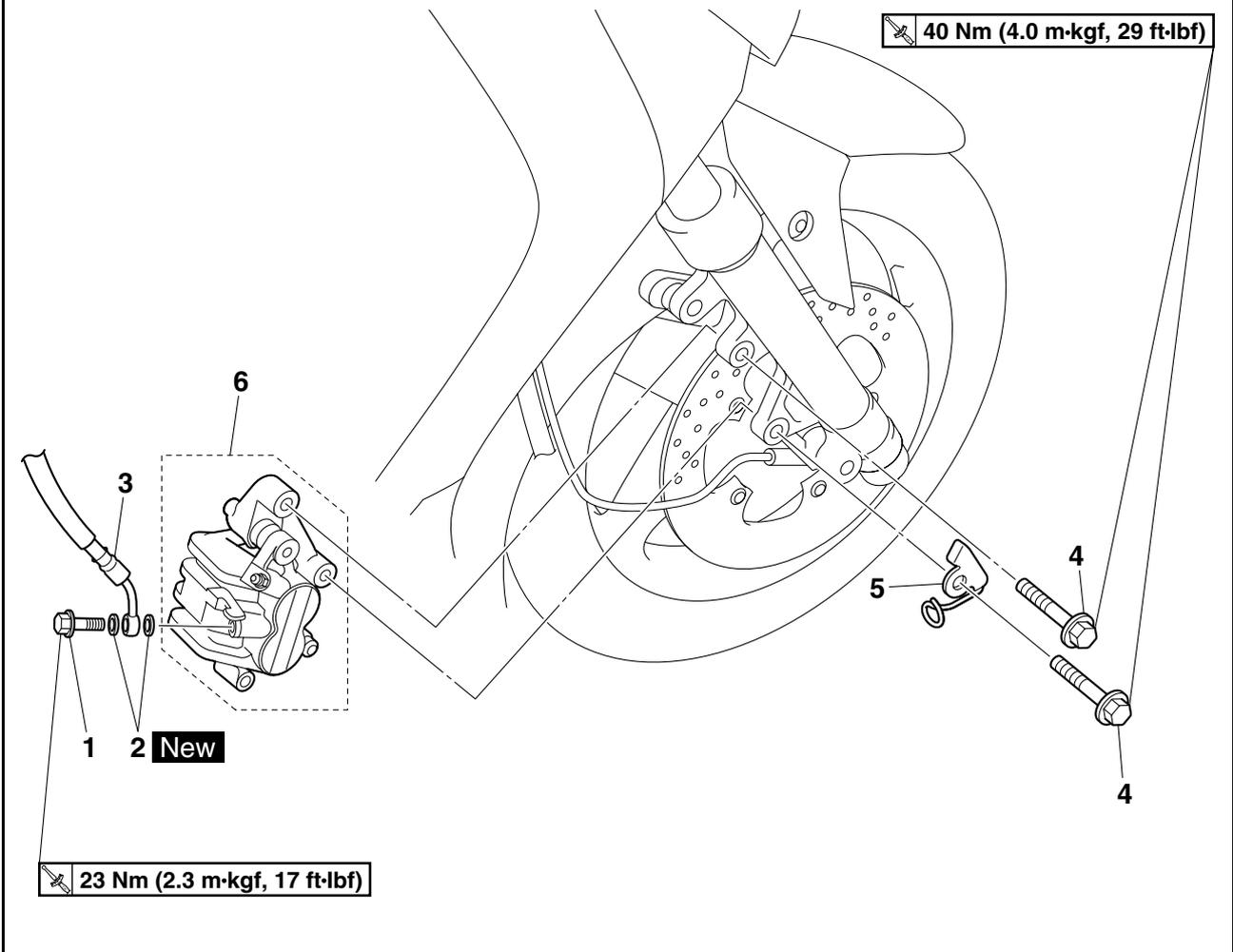
Disassembling the front brake master cylinder



Order	Job/Parts to remove	Q'ty	Remarks
1	Brake master cylinder kit	1	
2	Brake master cylinder body	1	
			For assembly, reverse the disassembly procedure.

FRONT BRAKE

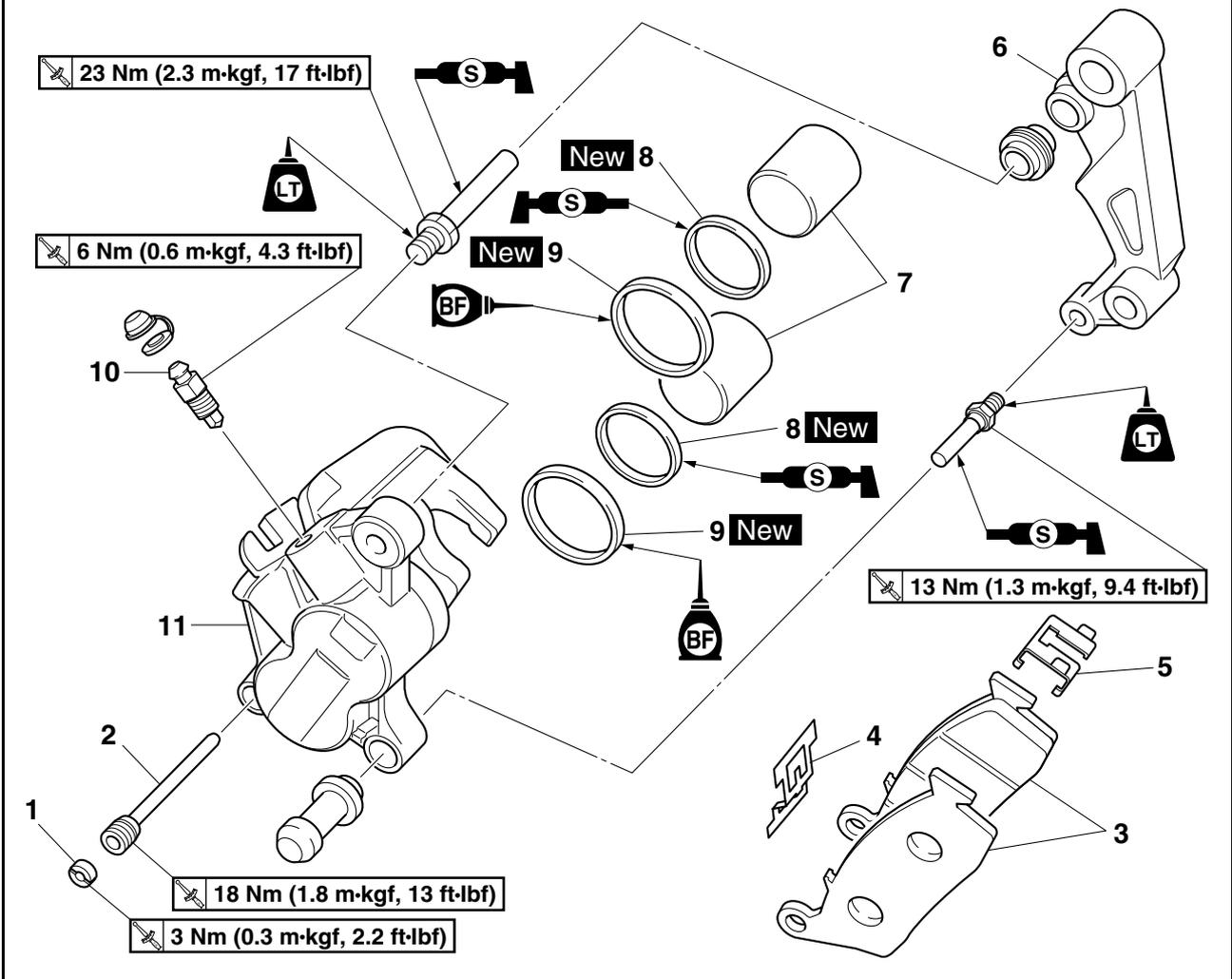
Removing the front brake caliper



Order	Job/Parts to remove	Q'ty	Remarks
	Brake fluid		Drain. Refer to "BLEEDING THE HYDRAULIC BRAKE SYSTEM" on page 3-36.
1	Brake hose union bolt	1	
2	Copper washer	2	
3	Front brake hose	1	
4	Front brake caliper bolt	2	
5	Speed sensor lead guide	1	
6	Front brake caliper	1	
			For installation, reverse the removal procedure.

FRONT BRAKE

Disassembling the front brake caliper



Order	Job/Parts to remove	Q'ty	Remarks
1	Brake pad pin cap	1	
2	Brake pad pin	1	
3	Front brake pad	2	
4	Brake pad spring	1	
5	Brake pad support	1	
6	Brake caliper bracket	1	
7	Brake caliper piston	2	
8	Brake caliper piston dust seal	2	
9	Brake caliper piston seal	2	
10	Bleed screw	1	
11	Brake caliper body	1	
			For assembly, reverse the disassembly procedure.

EAS22220

INTRODUCTION

EWA14101

WARNING

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

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

FIRST AID FOR BRAKE FLUID ENTERING THE EYES:

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

EAS22230

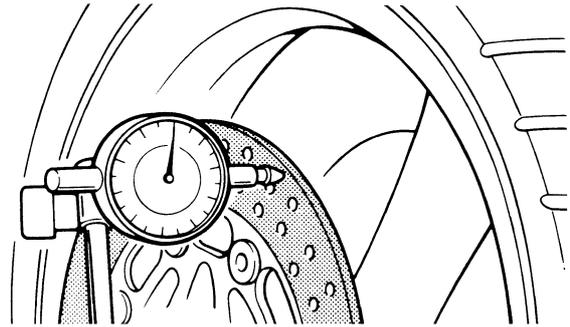
CHECKING THE FRONT BRAKE DISC

1. Remove:
 - Front wheel
Refer to "FRONT WHEEL" on page 4-9.
2. Check:
 - Brake disc
Damage/galling → Replace.
3. Measure:
 - Brake disc deflection
Out of specification → Correct the brake disc deflection or replace the brake disc.



Brake disc deflection limit
0.15 mm (0.0059 in)

- a. Place the vehicle on a suitable stand so that the front wheel is elevated.
- b. Before measuring the front brake disc deflection, turn the handlebar to the left or right to ensure that the front wheel is stationary.
- c. Remove the brake caliper.
- d. Hold the dial gauge at a right angle against the brake disc surface.
- e. Measure the deflection 1.5 mm (0.06 in) below the edge of the brake disc.

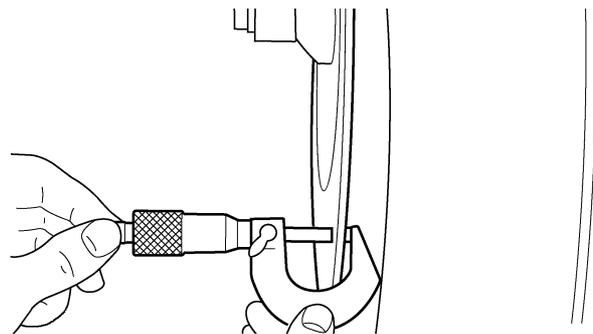


4. Measure:

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



Brake disc thickness limit
4.5 mm (0.18 in)



5. Adjust:

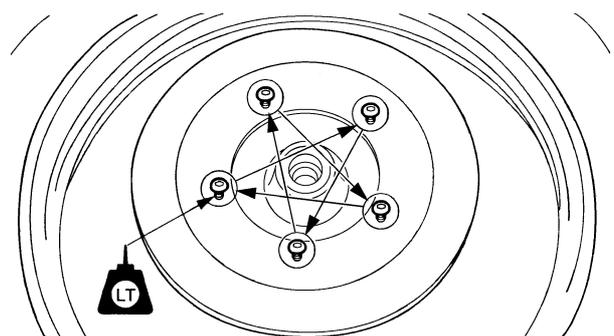
- Brake disc deflection
- a. Remove the brake disc.
 - b. Rotate the brake disc by one bolt hole.
 - c. Install the brake disc.



Front brake disc bolt
12 Nm (1.2 m·kgf, 8.7 ft·lbf)
LOCTITE®

TIP

Tighten the brake disc bolts in stages and in a crisscross pattern.



- d. Measure the brake disc deflection.
- e. If out of specification, repeat the adjustment steps until the brake disc deflection is within specification.
- f. If the brake disc deflection cannot be brought within specification, replace the brake disc.



6. Install:
 - Front wheel
 Refer to "FRONT WHEEL" on page 4-9.

EAS22270

REPLACING THE FRONT BRAKE PADS

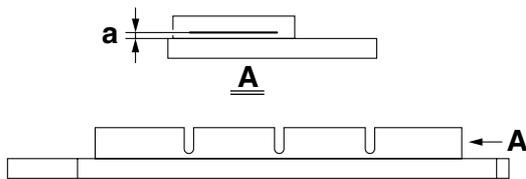
TIP

When replacing the brake pads, it is not necessary to disconnect the brake hose or disassemble the brake caliper.

1. Measure:
 - Brake pad wear limit "a"
 Out of specification → Replace the brake pads as a set.



Brake pad lining thickness (inner)
 5.0 mm (0.20 in)
Limit
 1.5 mm (0.06 in)
Brake pad lining thickness (outer)
 5.0 mm (0.20 in)
Limit
 1.5 mm (0.06 in)

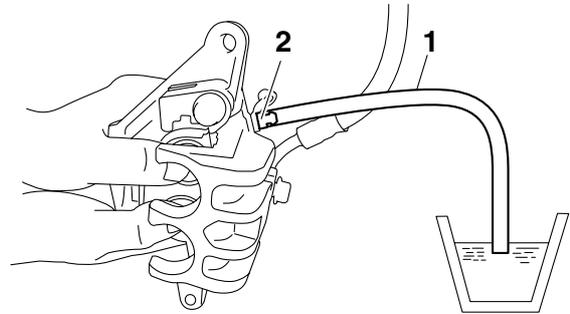


2. Install:
 - Brake pad support **New**
 - Brake pad spring **New**
 - Brake pads **New**

TIP

Always install new brake pads, a new brake pad spring, and a new brake pad support as a set.

- a. Connect a clear plastic hose "1" tightly to the bleed screw "2". Put the other end of the hose into an open container.
- b. Loosen the bleed screw and push the brake caliper pistons into the brake caliper with your finger.



- c. Tighten the bleed screw.



Bleed screw
 6 Nm (0.6 m·kgf, 4.3 ft·lbf)

- d. Install new brake pad support, new brake pad spring and new brake pads.

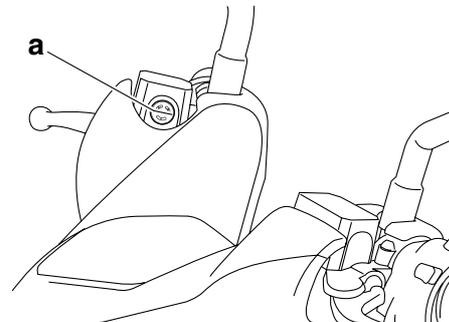


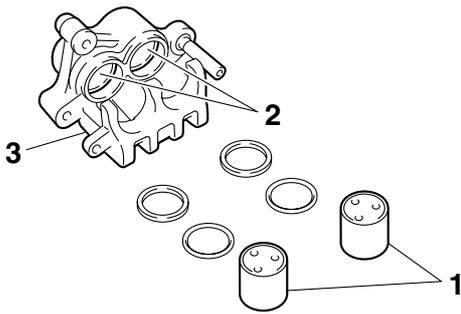
3. Install:
 - Brake pad pin
 - Brake pad pin cap
 - Front brake caliper
 - Speed sensor lead guide
 - Front brake caliper bolts



Front brake caliper bolt
 40 Nm (4.0 m·kgf, 29 ft·lbf)

4. Check:
 - Brake fluid level
 Below the minimum level mark "a" → Add the recommended brake fluid to the proper level. Refer to "CHECKING THE BRAKE FLUID LEVEL" on page 3-35.





2. Check:
- Brake caliper bracket
Cracks/damage → Replace.

EAS22400

ASSEMBLING THE FRONT BRAKE CALIPER

EWA37P1011

⚠ WARNING

- Before installation, all internal brake components should be cleaned and lubricated with clean or new brake fluid.
- Never use solvents on internal brake components as they will cause the brake caliper piston dust seals and brake caliper piston seals to swell and distort.
- Whenever a brake caliper is disassembled, replace the brake caliper piston dust seals and brake caliper piston seals.



Recommended fluid
DOT 4

EAS22420

INSTALLING THE FRONT BRAKE CALIPER

1. Install:
- Front brake caliper “1”
(temporarily)
 - Copper washers “2” **New**
 - Front brake hose “3”
 - Brake hose union bolt “4”



Front brake hose union bolt
23 Nm (2.3 m·kgf, 17 ft·lbf)

EWA37P1024

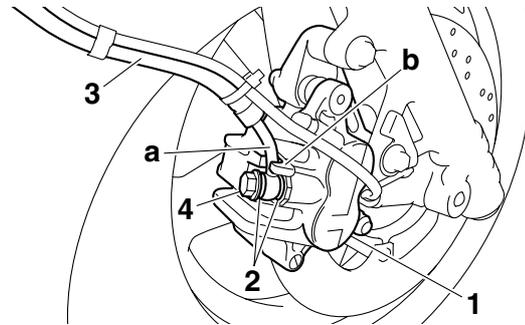
⚠ WARNING

Proper brake hose routing is essential to insure safe vehicle operation. Refer to “CABLE ROUTING (YP125R)” on page 2-29 and “CABLE ROUTING (YP250R)” on page 2-75.

ECA14170

NOTICE

When installing the brake hose onto the brake caliper “1”, make sure the brake pipe “a” touches the projection “b” on the brake caliper.



2. Remove:
- Front brake caliper
3. Install:
- Brake pad support
 - Brake pad spring
 - Brake pads
 - Brake pad pin
 - Brake pad pin cap
 - Front brake caliper
 - Speed sensor lead guide



Brake pad pin
18 Nm (1.8 m·kgf, 13 ft·lbf)
Brake pad pin cap
3 Nm (0.3 m·kgf, 2.2 ft·lbf)
Front brake caliper bolt
40 Nm (4.0 m·kgf, 29 ft·lbf)

Refer to “REPLACING THE FRONT BRAKE PADS” on page 4-23.

4. Fill:
- Brake master cylinder reservoir
(with the specified amount of the recommended brake fluid)



Recommended fluid
DOT 4

EWA37P1012

⚠ WARNING

- Use only the designated brake fluid. Other brake fluids may cause the rubber seals to deteriorate, causing leakage and poor brake performance.
- Refill with the same type of brake fluid that is already in the system. Mixing brake fluids may result in a harmful chemical reaction, leading to poor brake performance.

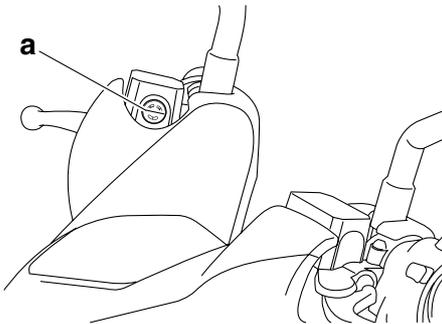
- When refilling, be careful that water does not enter the brake master cylinder reservoir. Water will significantly lower the boiling point of the brake fluid and could cause vapor lock.

ECA13540

NOTICE

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

- Bleed:
 - Brake system
Refer to “BLEEDING THE HYDRAULIC BRAKE SYSTEM” on page 3-36.
- Check:
 - Brake fluid level
Below the minimum level mark “a” → Add the recommended brake fluid to the proper level. Refer to “CHECKING THE BRAKE FLUID LEVEL” on page 3-35.



- Check:
 - Brake lever operation
Soft or spongy feeling → Bleed the brake system. Refer to “BLEEDING THE HYDRAULIC BRAKE SYSTEM” on page 3-36.

EAS22490

REMOVING THE FRONT BRAKE MASTER CYLINDER

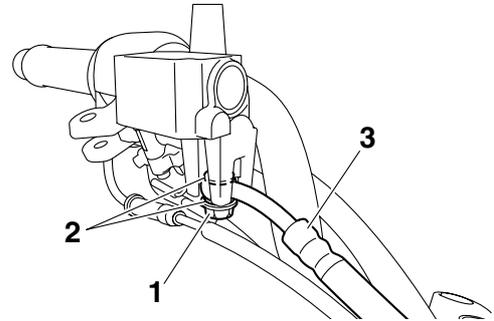
TIP

Before removing the front brake master cylinder, drain the brake fluid from the entire brake system.

- Remove:
 - Brake hose union bolt “1”
 - Copper washers “2”
 - Front brake hose “3”

TIP

To collect any remaining brake fluid, place a container under the master cylinder and the end of the brake hose.



EAS22500

CHECKING THE FRONT BRAKE MASTER CYLINDER

- Check:
 - Brake master cylinder
Damage/scratches/wear → Replace.
 - Brake fluid delivery passages (brake master cylinder body)
Obstruction → Blow out with compressed air.
- Check:
 - Brake master cylinder kit
Damage/scratches/wear → Replace.
- Check:
 - Brake master cylinder reservoir cap
 - Brake master cylinder reservoir diaphragm holder
 - Brake master cylinder reservoir diaphragm
Damage/wear → Replace.
- Check:
 - Front brake hose
Cracks/damage/wear → Replace.

EAS22520

ASSEMBLING THE FRONT BRAKE MASTER CYLINDER

EWA13520

WARNING

- Before installation, all internal brake components should be cleaned and lubricated with clean or new brake fluid.
- Never use solvents on internal brake components.



EAS22530

INSTALLING THE FRONT BRAKE MASTER CYLINDER

1. Install:

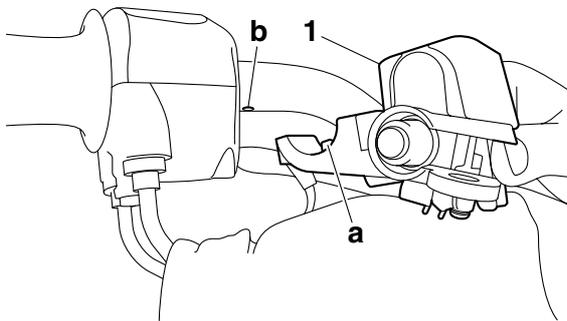
- Brake master cylinder "1"
- Brake master cylinder holder



Brake master cylinder holder bolt
7 Nm (0.7 m·kgf, 5.1 ft·lbf)

TIP

- Align the projection "a" on the brake master cylinder with the hole "b" in the handlebar.
- First, tighten the front bolt, then the rear bolt.



2. Install:

- Copper washers "1" **New**
- Front brake hose "2"
- Brake hose union bolt "3"



Brake hose union bolt
23 Nm (2.3 m·kgf, 17 ft·lbf)

EWA37P1024



WARNING

Proper brake hose routing is essential to insure safe vehicle operation. Refer to "CABLE ROUTING (YP125R)" on page 2-29 and "CABLE ROUTING (YP250R)" on page 2-75.

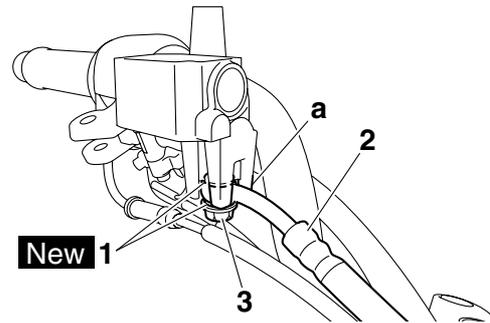
ECA14160

NOTICE

When installing the brake hose onto the brake master cylinder, make sure the brake pipe touches the projection "a" as shown.

TIP

Turn the handlebar to the left and right to make sure the brake hose does not touch other parts (e.g., wire harness, cables, leads). Correct if necessary.



3. Fill:

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



Recommended fluid
DOT 4

EWA13540



WARNING

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

ECA13540

NOTICE

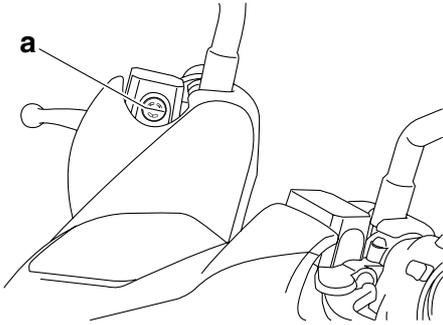
Brake fluid may damage painted surfaces and plastic parts. Therefore, always clean up any spilt brake fluid immediately.

4. Bleed:

- Brake system
Refer to "BLEEDING THE HYDRAULIC BRAKE SYSTEM" on page 3-36.

5. Check:

- Brake fluid level
Below the minimum level mark "a" → Add the recommended brake fluid to the proper level. Refer to "CHECKING THE BRAKE FLUID LEVEL" on page 3-35.



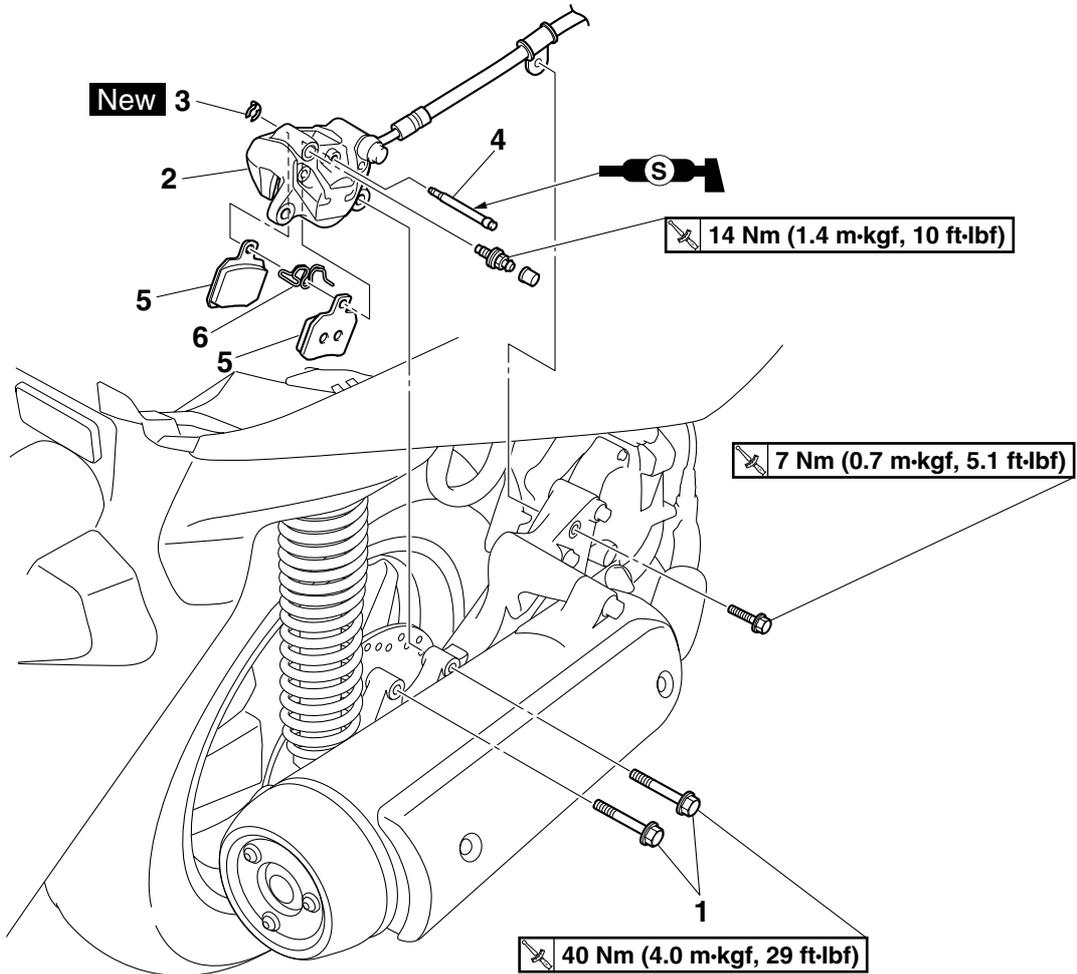
6. Check:

- Brake lever operation
Soft or spongy feeling → Bleed the brake system.
Refer to “BLEEDING THE HYDRAULIC BRAKE SYSTEM” on page 3-36.

EAS22550

REAR BRAKE

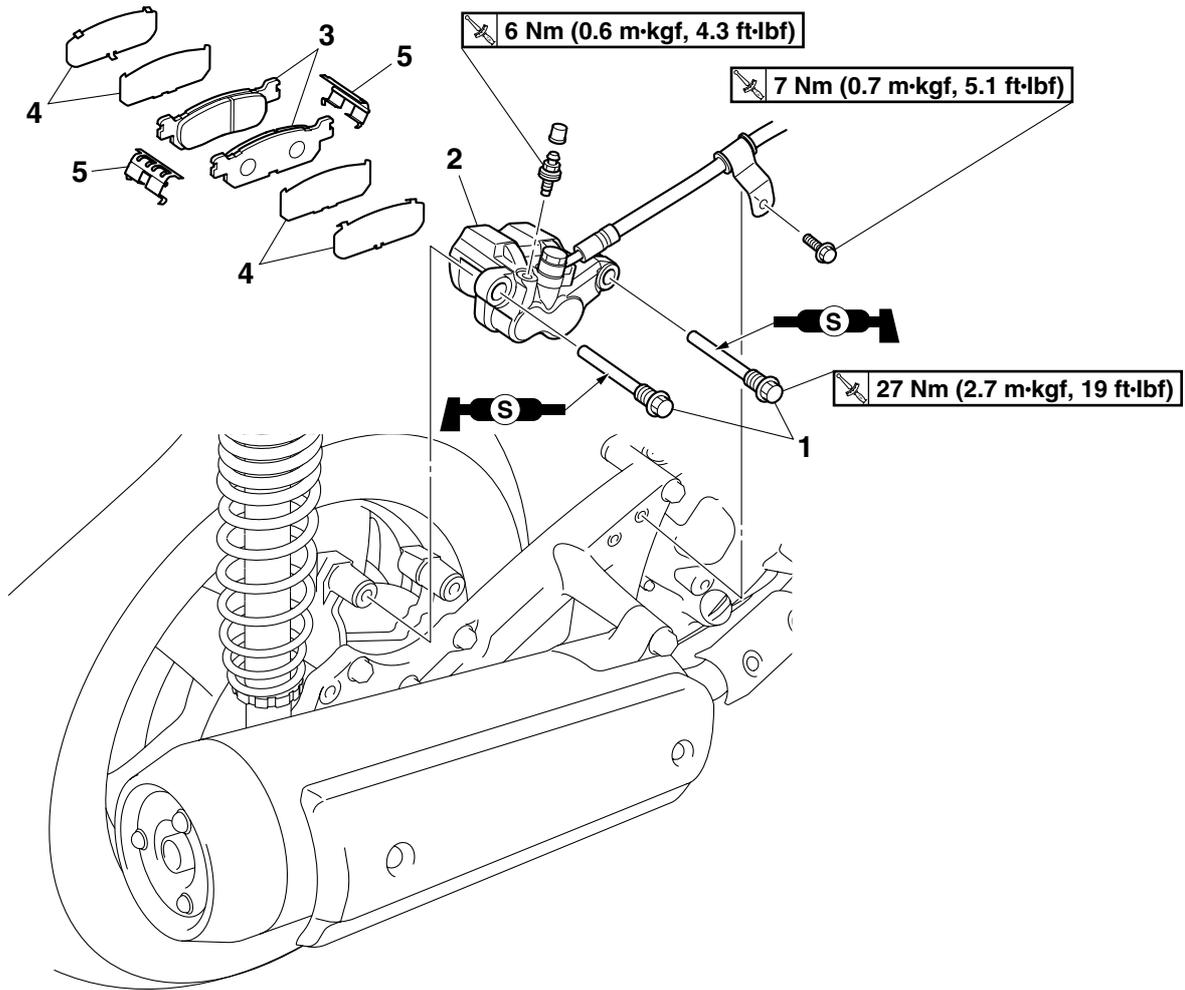
Removing the rear brake pads (YP125R)



Order	Job/Parts to remove	Q'ty	Remarks
1	Rear brake caliper bolt	2	
2	Rear brake caliper	1	
3	Brake pad clip	1	
4	Brake pad pin	1	
5	Rear brake pad	2	
6	Brake pad spring	1	
			For installation, reverse the removal procedure.

REAR BRAKE

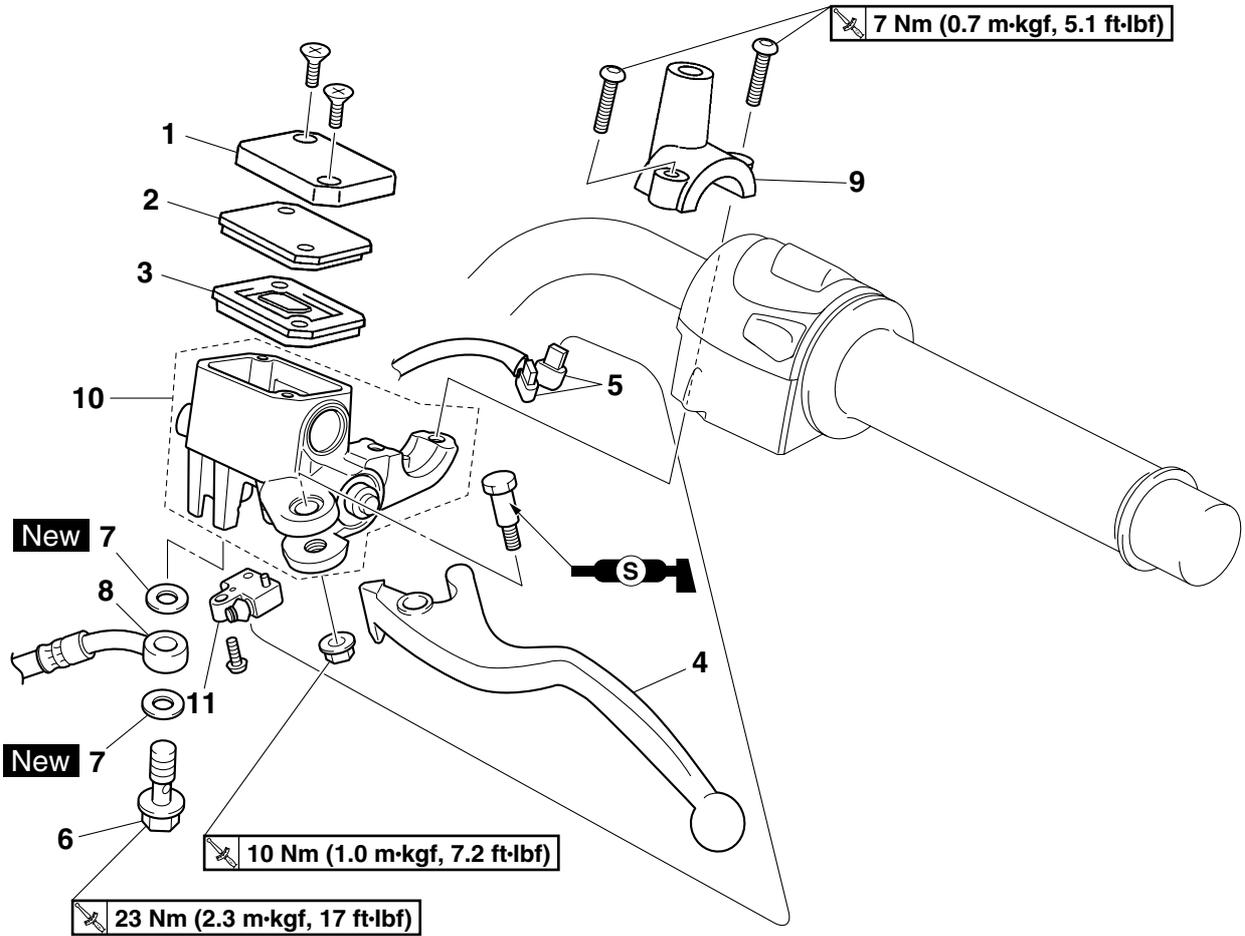
Removing the rear brake pads (YP250R)



Order	Job/Parts to remove	Q'ty	Remarks
1	Rear brake caliper retaining bolt	2	
2	Rear brake caliper	1	
3	Rear brake pad	2	
4	Brake pad shim	4	
5	Brake pad support	2	
			For installation, reverse the removal procedure.

REAR BRAKE

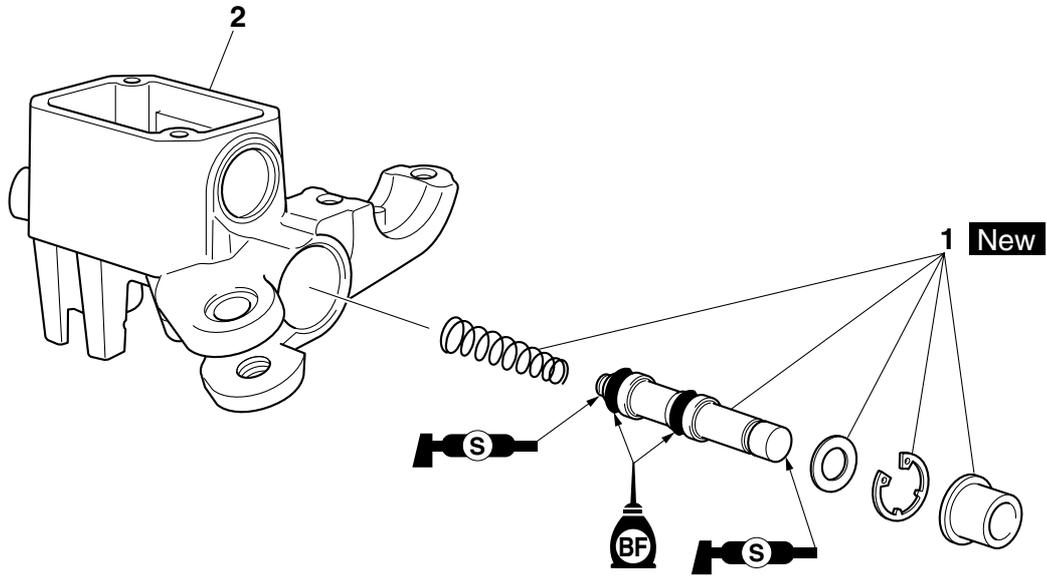
Removing the rear brake master cylinder



Order	Job/Parts to remove	Q'ty	Remarks
	Lower handlebar cover		Refer to "GENERAL CHASSIS" on page 4-1.
	Brake fluid		Drain. Refer to "BLEEDING THE HYDRAULIC BRAKE SYSTEM" on page 3-36.
1	Brake master cylinder reservoir cap	1	
2	Brake master cylinder reservoir diaphragm holder	1	
3	Brake master cylinder reservoir diaphragm	1	
4	Rear brake lever	1	
5	Rear brake light switch connector	2	Disconnect.
6	Brake hose union bolt	1	
7	Copper washer	2	
8	Rear brake hose	1	
9	Rear brake master cylinder holder	1	
10	Rear brake master cylinder	1	
11	Rear brake light switch	1	
			For installation, reverse the removal procedure.

REAR BRAKE

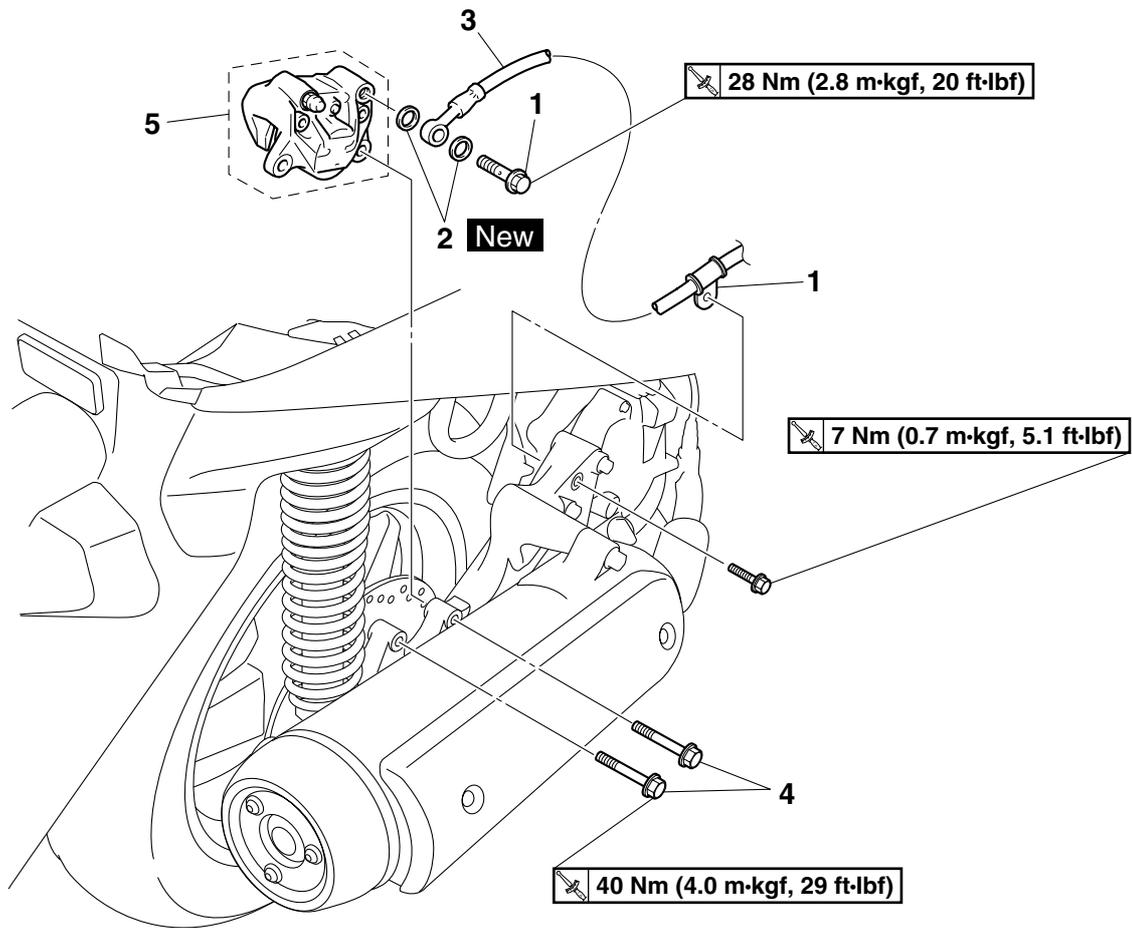
Disassembling the rear brake master cylinder



Order	Job/Parts to remove	Q'ty	Remarks
1	Brake master cylinder kit	1	
2	Brake master cylinder body	1	
			For assembly, reverse the disassembly procedure.

REAR BRAKE

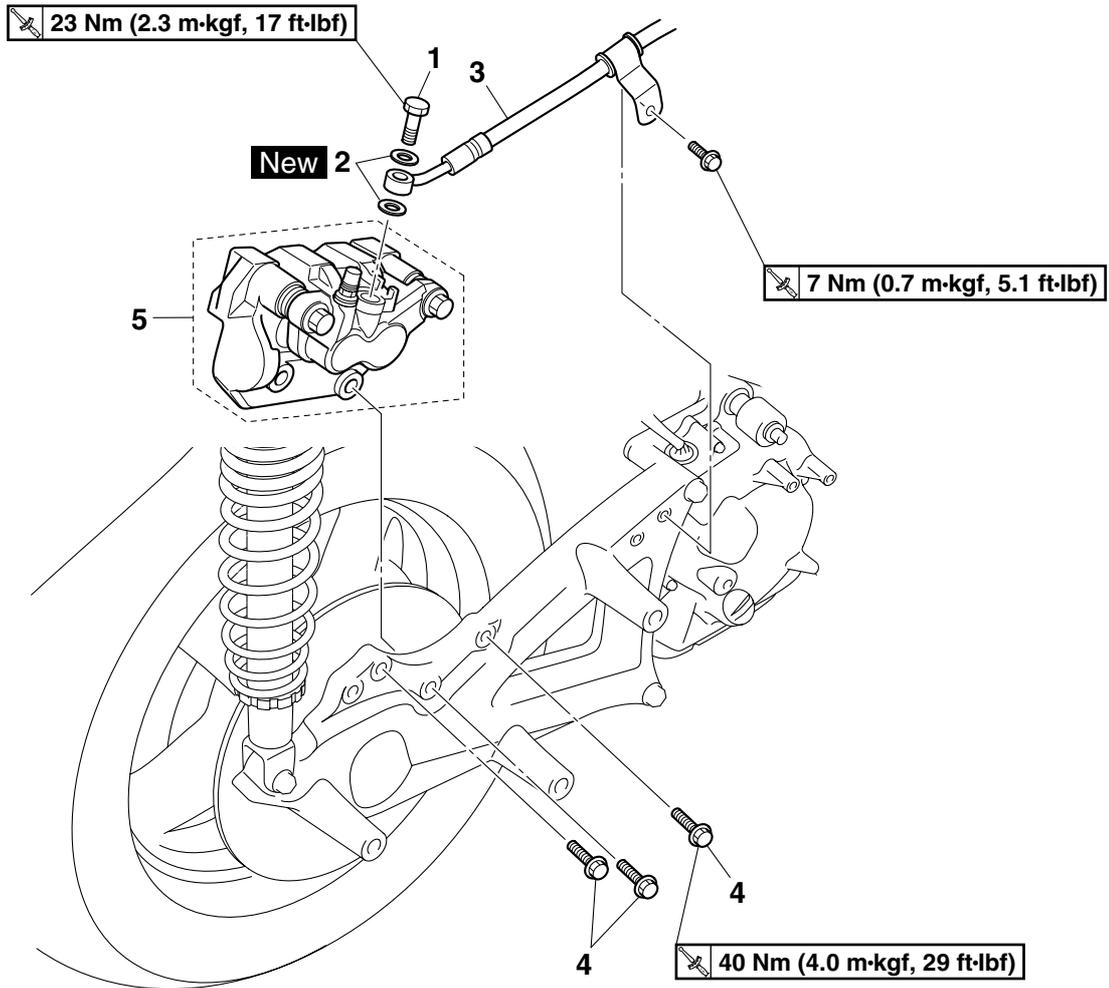
Removing the rear brake caliper (YP125R)



Order	Job/Parts to remove	Q'ty	Remarks
	Brake fluid		Drain. Refer to "BLEEDING THE HYDRAULIC BRAKE SYSTEM" on page 3-36.
1	Brake hose union bolt	1	
2	Copper washer	2	
3	Rear brake hose	1	
4	Rear brake caliper bolt	2	
5	Rear brake caliper	1	
			For installation, reverse the removal procedure.

REAR BRAKE

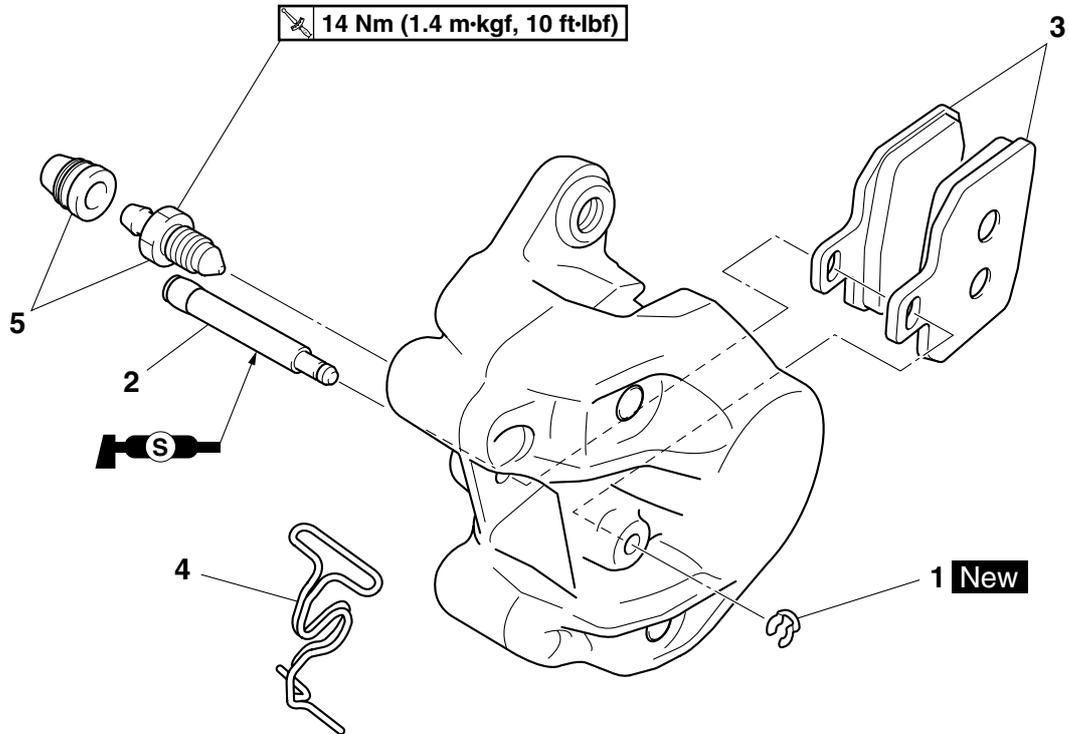
Removing the rear brake caliper (YP250R)



Order	Job/Parts to remove	Q'ty	Remarks
	Muffler		Refer to "ENGINE REMOVAL (YP250R)" on page 5-61.
	Brake fluid		Drain. Refer to "BLEEDING THE HYDRAULIC BRAKE SYSTEM" on page 3-36.
1	Brake hose union bolt	1	
2	Copper washer	2	
3	Rear brake hose	1	
4	Rear brake caliper bolt	3	
5	Rear brake caliper	1	
			For installation, reverse the removal procedure.

REAR BRAKE

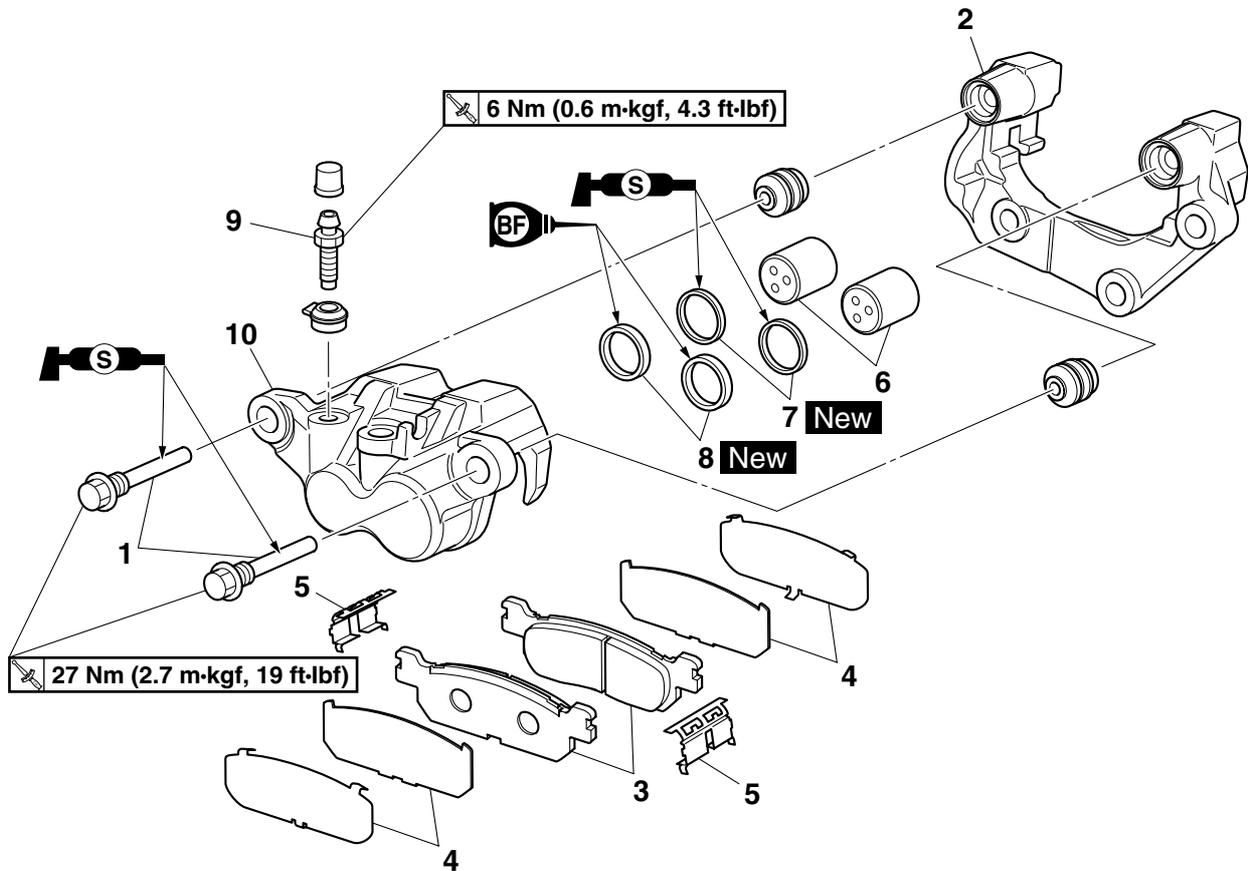
Disassembling the rear brake caliper (YP125R)



Order	Job/Parts to remove	Q'ty	Remarks
1	Brake pad clip	1	
2	Brake pad pin	1	
3	Rear brake pad	2	
4	Brake pad spring	1	
5	Bleed screw/cap	1/1	
			For assembly, reverse the disassembly procedure.

REAR BRAKE

Disassembling the rear brake caliper (YP250R)



Order	Job/Parts to remove	Q'ty	Remarks
1	Rear brake caliper retaining bolt	2	
2	Brake caliper bracket	1	
3	Rear brake pad	2	
4	Brake pad shim	4	
5	Brake pad support	2	
6	Brake caliper piston	2	
7	Brake caliper piston dust seal	2	
8	Brake caliper piston seal	2	
9	Bleed screw	1	
10	Brake caliper body	1	
			For assembly, reverse the disassembly procedure.

EAS22560

INTRODUCTION

EWA14101

WARNING

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

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

FIRST AID FOR BRAKE FLUID ENTERING THE EYES:

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

EAS22570

CHECKING THE REAR BRAKE DISC

1. Remove:
 - Rear wheel
Refer to "REAR WHEEL" on page 4-15.
2. Check:
 - Brake disc
Damage/galling → Replace.
3. Measure:
 - Brake disc deflection
Out of specification → Correct the brake disc deflection or replace the brake disc.
Refer to "CHECKING THE FRONT BRAKE DISC" on page 4-22.



Brake disc deflection limit
 0.25 mm (0.0098 in) (YP125R)
 0.15 mm (0.0059 in) (YP250R)

4. Measure:
 - Brake disc thickness
Measure the brake disc thickness at a few different locations.
Out of specification → Replace.
Refer to "CHECKING THE FRONT BRAKE DISC" on page 4-22.



Brake disc thickness limit
 4.5 mm (0.18 in)

5. Adjust:
 - Brake disc deflection
Refer to "CHECKING THE FRONT BRAKE DISC" on page 4-22.



Rear brake disc bolt
 23 Nm (2.3 m·kgf, 17 ft·lbf)
 LOCTITE®

6. Install:
 - Rear wheel
Refer to "REAR WHEEL" on page 4-15.

EAS37P1131

REPLACING THE REAR BRAKE PADS (YP125R)

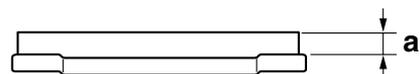
TIP

When replacing the brake pads, it is not necessary to disconnect the brake hose or disassemble the brake caliper.

1. Measure:
 - Brake pad wear limit "a"
Out of specification → Replace the brake pads as a set.



Brake pad lining thickness (inner)
 7.3 mm (0.29 in)
Limit
 0.8 mm (0.03 in)
Brake pad lining thickness (outer)
 7.3 mm (0.29 in)
Limit
 0.8 mm (0.03 in)

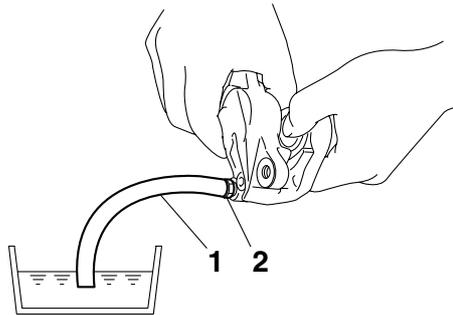


2. Install:
 - Brake pad spring **New**
 - Brake pads **New**

TIP

Always install new brake pads and a new brake pad spring as a set.

- a. Connect a clear plastic hose "1" tightly to the bleed screw "2". Put the other end of the hose into an open container.
- b. Loosen the bleed screw and push the brake caliper pistons into the brake caliper with your finger.



- c. Tighten the bleed screw.

	Bleed screw 14 Nm (1.4 m·kgf, 10 ft·lbf)
--	---

- d. Install new brake pad spring and new brake pads.

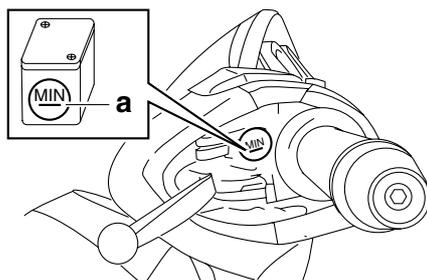
3. Install:

- Brake pad pin
- Brake pad clip **New**
- Rear brake caliper
- Rear brake caliper bolts

	Rear brake caliper bolt 40 Nm (4.0 m·kgf, 29 ft·lbf)
---	---

4. Check:

- Brake fluid level
Below the minimum level mark "a" → Add the recommended brake fluid to the proper level. Refer to "CHECKING THE BRAKE FLUID LEVEL" on page 3-35.



5. Check:

- Brake lever operation
Soft or spongy feeling → Bleed the brake system.
Refer to "BLEEDING THE HYDRAULIC BRAKE SYSTEM" on page 3-36.

EAS22580

REPLACING THE REAR BRAKE PADS (YP250R)

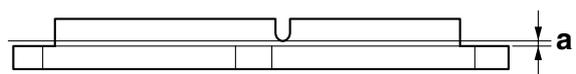
TIP

When replacing the brake pads, it is not necessary to disconnect the brake hose or disassemble the brake caliper.

1. Measure:

- Brake pad wear limit "a"
Out of specification → Replace the brake pads as a set.

	Brake pad lining thickness (inner) 5.3 mm (0.21 in) Limit 0.8 mm (0.03 in) Brake pad lining thickness (outer) 5.3 mm (0.21 in) Limit 0.8 mm (0.03 in)
---	--



2. Install:

- Brake pad supports **New**
- Brake pad shims **New**
(onto the brake pads)
- Brake pads **New**

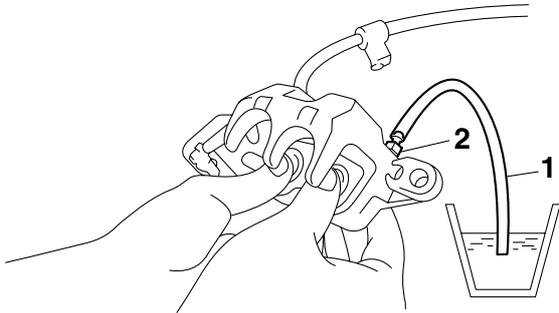
TIP

Always install new brake pads, brake pad shims, and brake pad supports as a set.

- a. Connect a clear plastic hose "1" tightly to the bleed screw "2". Put the other end of the hose into an open container.

REAR BRAKE

- b. Loosen the bleed screw and push the brake caliper pistons into the brake caliper with your finger.



- c. Tighten the bleed screw.

	Bleed screw 6 Nm (0.6 m·kgf, 4.3 ft·lbf)
---	---

- d. Install new brake pad shims onto each new brake pad.
e. Install new brake pad supports and new brake pads.

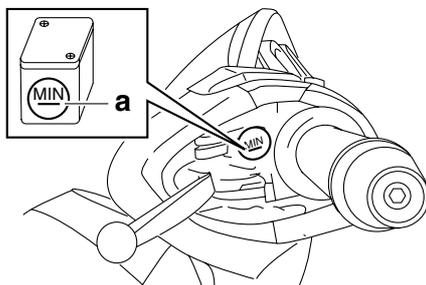
3. Install:

- Rear brake caliper
- Rear brake caliper retaining bolts

	Rear brake caliper retaining bolt 27 Nm (2.7 m·kgf, 19 ft·lbf)
---	---

4. Check:

- Brake fluid level
Below the minimum level mark "a" → Add the recommended brake fluid to the proper level. Refer to "CHECKING THE BRAKE FLUID LEVEL" on page 3-35.



5. Check:

- Brake lever operation
Soft or spongy feeling → Bleed the brake system. Refer to "BLEEDING THE HYDRAULIC BRAKE SYSTEM" on page 3-36.

EAS22590

REMOVING THE REAR BRAKE CALIPER

TIP

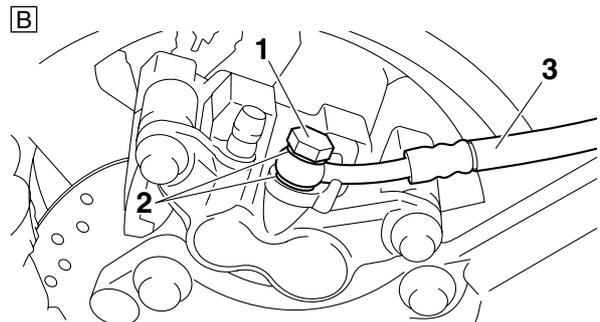
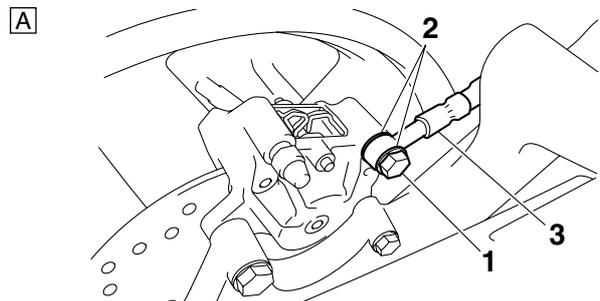
Before removing the brake caliper, drain the brake fluid from the entire brake system.

1. Remove:

- Brake hose union bolt "1"
- Copper washers "2"
- Rear brake hose "3"

TIP

Put the end of the brake hose into a container and pump out the brake fluid carefully.



A. YP125R

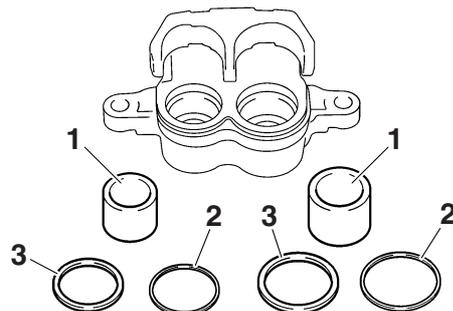
B. YP250R

EAS22610

DISASSEMBLING THE REAR BRAKE CALIPER (YP250R only)

1. Remove:

- Brake caliper pistons "1"
- Brake caliper piston dust seals "2"
- Brake caliper piston seals "3"



2. Check:

- Brake caliper bracket
Cracks/damage → Replace.

EAS22650

ASSEMBLING THE REAR BRAKE CALIPER

EWA37P1015

⚠ WARNING

- Before installation, all internal brake components should be cleaned and lubricated with clean or new brake fluid.
- Never use solvents on internal brake components as they will cause the brake caliper piston dust seals and brake caliper piston seals to swell and distort (YP250R only).
- Whenever a brake caliper is disassembled, replace the brake caliper piston dust seals and brake caliper piston seals (YP250R only).



Recommended fluid
DOT 4

EAS37P1133

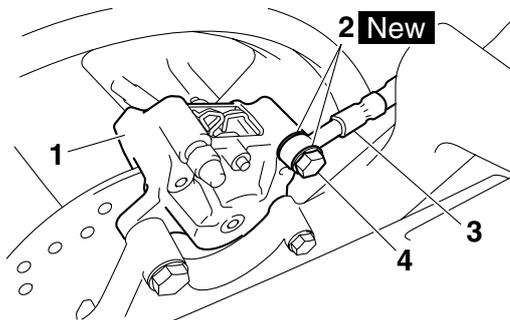
INSTALLING THE REAR BRAKE CALIPER (YP125R)

1. Install:

- Rear brake caliper “1” (temporarily)
- Copper washers “2” **New**
- Rear brake hose “3”
- Brake hose union bolt “4”



Brake hose union bolt
28 Nm (2.8 m·kgf, 20 ft·lbf)



EWA37P1025

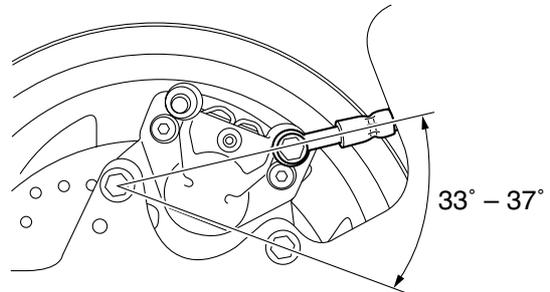
⚠ WARNING

Proper brake hose routing is essential to insure safe vehicle operation. Refer to “CABLE ROUTING (YP125R)” on page 2-29.

ECA37P1051

NOTICE

While holding the brake hose, tighten the union bolt within the angle range shown in the illustration.



2. Remove:

- Rear brake caliper

3. Install:

- Brake pad spring
- Brake pads
- Brake pad pin
- Brake pad clip **New**
- Rear brake caliper



Rear brake caliper bolt
40 Nm (4.0 m·kgf, 29 ft·lbf)

Refer to “REPLACING THE REAR BRAKE PADS (YP125R)” on page 4-37.

4. Fill:

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



Recommended fluid
DOT 4

EWA13540

⚠ WARNING

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

ECA13540

NOTICE

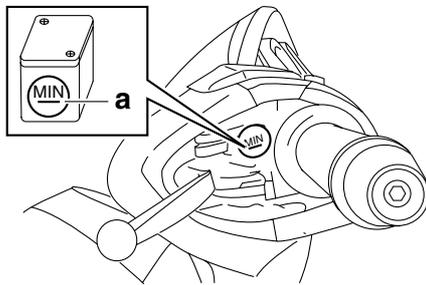
Brake fluid may damage painted surfaces and plastic parts. Therefore, always clean up any spilt brake fluid immediately.

5. Bleed:

- Brake system
Refer to “BLEEDING THE HYDRAULIC BRAKE SYSTEM” on page 3-36.

6. Check:

- Brake fluid level
Below the minimum level mark “a” → Add the recommended brake fluid to the proper level. Refer to “CHECKING THE BRAKE FLUID LEVEL” on page 3-35.



7. Check:

- Brake lever operation
Soft or spongy feeling → Bleed the brake system. Refer to “BLEEDING THE HYDRAULIC BRAKE SYSTEM” on page 3-36.

EAS22670

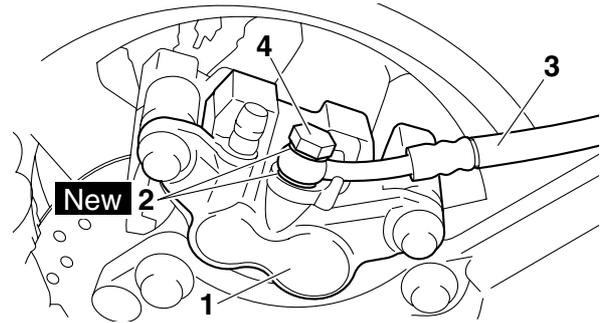
INSTALLING THE REAR BRAKE CALIPER (YP250R)

1. Install:

- Rear brake caliper “1” (temporarily)
- Copper washers “2” **New**
- Rear brake hose “3”
- Brake hose union bolt “4”



**Rear brake hose union bolt
23 Nm (2.3 m·kgf, 17 ft·lbf)**



EWA13530

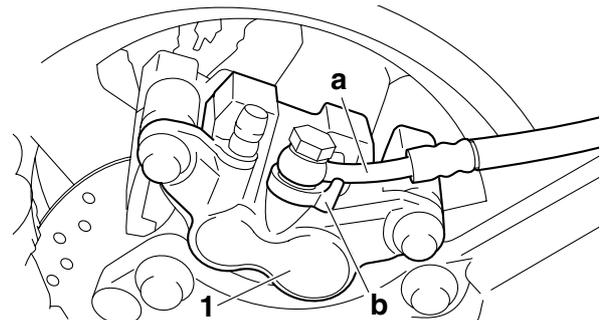
WARNING

Proper brake hose routing is essential to insure safe vehicle operation. Refer to “CABLE ROUTING (YP250R)” on page 2-75.

ECA14170

NOTICE

When installing the brake hose onto the brake caliper “1”, make sure the brake pipe “a” touches the projection “b” on the brake caliper.



2. Remove:

- Rear brake caliper

3. Install:

- Brake pad supports
- Brake pad shims
- Brake pads
- Rear brake caliper



**Rear brake caliper bolt
40 Nm (4.0 m·kgf, 29 ft·lbf)
Rear brake caliper retaining bolt
27 Nm (2.7 m·kgf, 19 ft·lbf)**

Refer to “REPLACING THE REAR BRAKE PADS (YP250R)” on page 4-38.

4. Fill:

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



**Recommended fluid
DOT 4**

EWA13540

WARNING

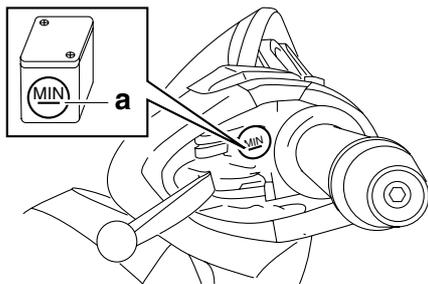
- Use only the designated brake fluid. Other brake fluids may cause the rubber seals to deteriorate, causing leakage and poor brake performance.
- Refill with the same type of brake fluid that is already in the system. Mixing brake fluids may result in a harmful chemical reaction, leading to poor brake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

ECA13540

NOTICE

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

5. Bleed:
 - Brake system
Refer to "BLEEDING THE HYDRAULIC BRAKE SYSTEM" on page 3-36.
6. Check:
 - Brake fluid level
Below the minimum level mark "a" → Add the recommended brake fluid to the proper level.
Refer to "CHECKING THE BRAKE FLUID LEVEL" on page 3-35.



7. Check:
 - Brake lever operation
Soft or spongy feeling → Bleed the brake system.
Refer to "BLEEDING THE HYDRAULIC BRAKE SYSTEM" on page 3-36.

EAS22700

REMOVING THE REAR BRAKE MASTER CYLINDER

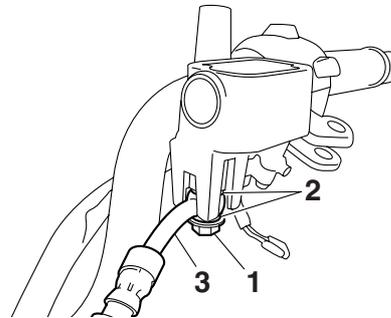
TIP

Before removing the rear brake master cylinder, drain the brake fluid from the entire brake system.

1. Remove:
 - Brake hose union bolt "1"
 - Copper washers "2"
 - Brake hose "3"

TIP

To collect any remaining brake fluid, place a container under the master cylinder and the end of the brake hose.



EAS22710

CHECKING THE REAR BRAKE MASTER CYLINDER

1. Check:
 - Brake master cylinder
Damage/scratches/wear → Replace.
 - Brake fluid delivery passages (brake master cylinder body)
Obstruction → Blow out with compressed air.
2. Check:
 - Brake master cylinder kit
Damage/scratches/wear → Replace.
3. Check:
 - Brake master cylinder reservoir cap
 - Brake master cylinder reservoir diaphragm holder
 - Brake master cylinder reservoir diaphragm
Damage/wear → Replace.
4. Check:
 - Rear brake hose
Cracks/damage/wear → Replace.

REAR BRAKE

EAS22730

ASSEMBLING THE REAR BRAKE MASTER CYLINDER

EWA13520

WARNING

- Before installation, all internal brake components should be cleaned and lubricated with clean or new brake fluid.
- Never use solvents on internal brake components.



Recommended fluid
DOT 4

EAS22750

INSTALLING THE REAR BRAKE MASTER CYLINDER

1. Install:

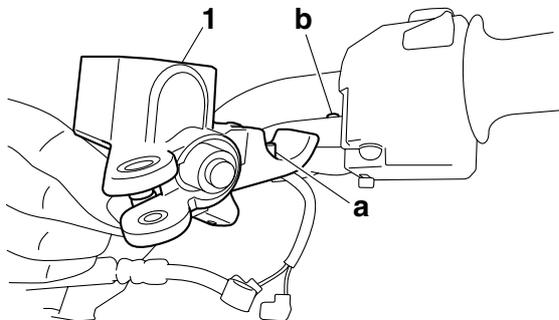
- Brake master cylinder "1"
- Brake master cylinder holder



Brake master cylinder holder bolt
7 Nm (0.7 m-kgf, 5.1 ft-lbf)

TIP

- Align the projection "a" on the brake master cylinder with the hole "b" in the handlebar.
- First, tighten the front bolt, then the rear bolt.



2. Install:

- Copper washers "1" **New**
- Rear brake hose "2"
- Brake hose union bolt "3"



Brake hose union bolt
23 Nm (2.3 m-kgf, 17 ft-lbf)

EWA37P1024

WARNING

Proper brake hose routing is essential to insure safe vehicle operation. Refer to "CABLE ROUTING (YP125R)" on page 2-29 and "CABLE ROUTING (YP250R)" on page 2-75.

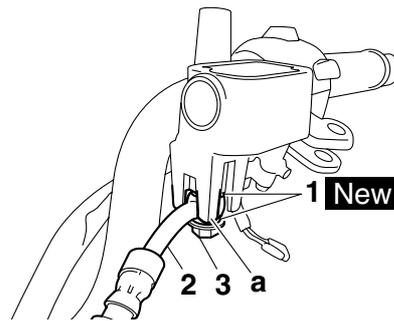
ECA14160

NOTICE

When installing the brake hose onto the brake master cylinder, make sure the brake pipe touches the projection "a" as shown.

TIP

Turn the handlebar to the left and right to make sure the brake hose does not touch other parts (e.g., wire harness, cables, leads). Correct if necessary.



3. Fill:

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



Recommended fluid
DOT 4

EWA13540

WARNING

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

ECA13540

NOTICE

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

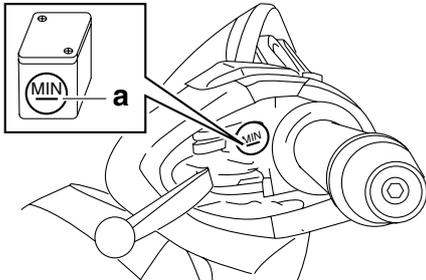
4. Bleed:

- Brake system
Refer to "BLEEDING THE HYDRAULIC BRAKE SYSTEM" on page 3-36.

5. Check:

- Brake fluid level

Below the minimum level mark “a” → Add the recommended brake fluid to the proper level.
Refer to “CHECKING THE BRAKE FLUID LEVEL” on page 3-35.



6. Check:

- Brake lever operation

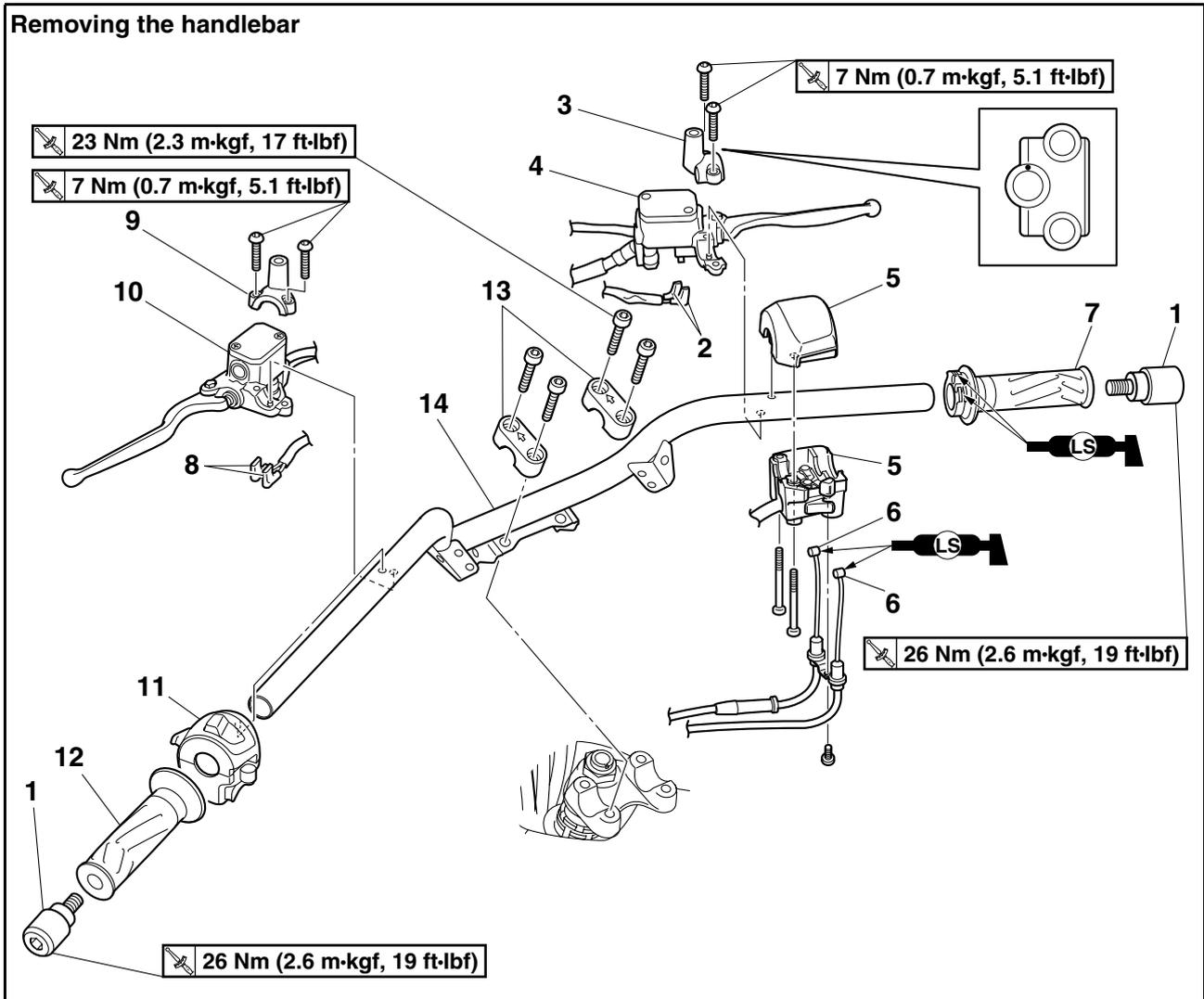
Soft or spongy feeling → Bleed the brake system.

Refer to “BLEEDING THE HYDRAULIC BRAKE SYSTEM” on page 3-36.

EAS22840

HANDLEBAR

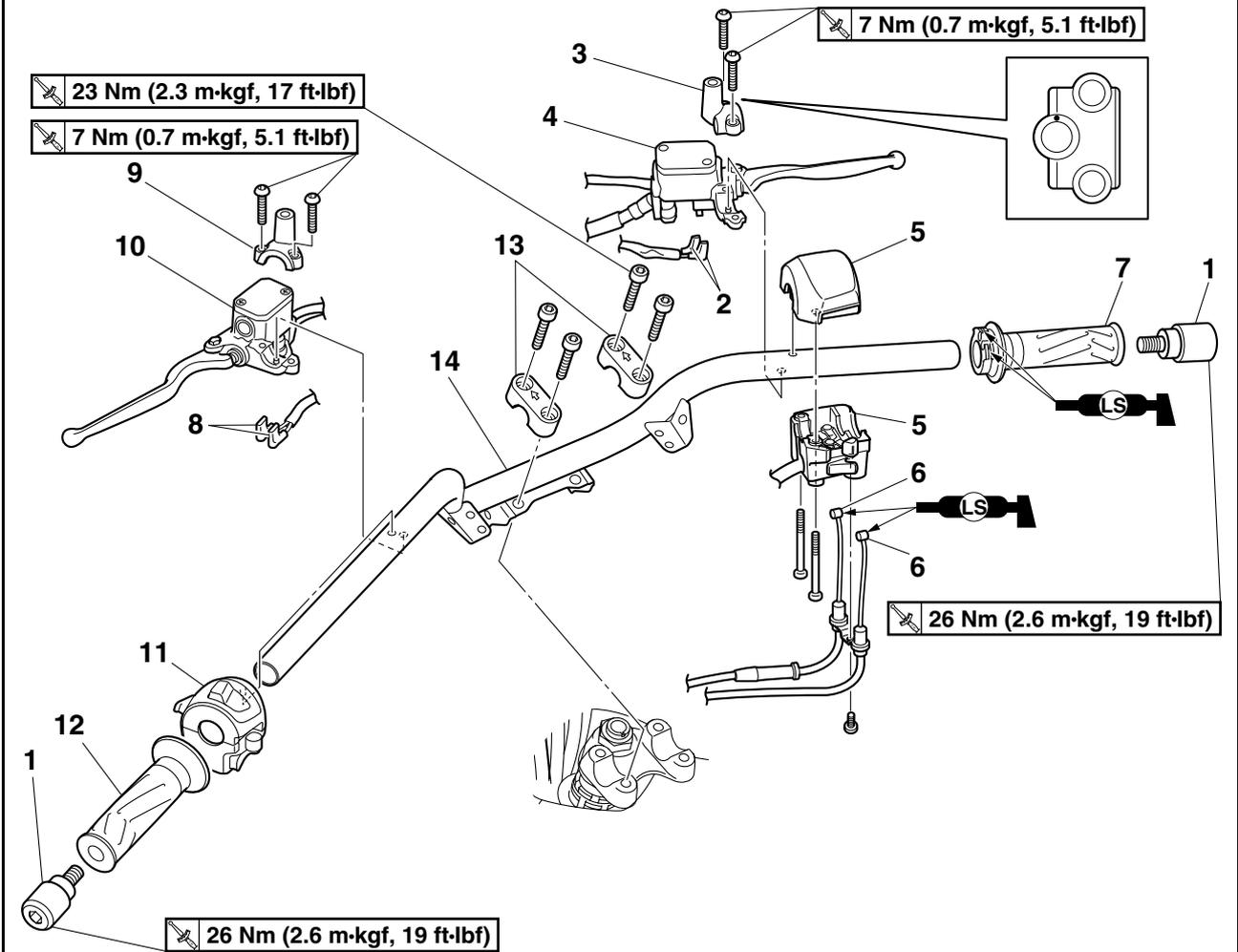
Removing the handlebar



Order	Job/Parts to remove	Q'ty	Remarks
	Lower handlebar cover		Refer to "GENERAL CHASSIS" on page 4-1.
1	Grip end	2	
2	Front brake light switch connector	2	Disconnect.
3	Front brake master cylinder holder	1	
4	Front brake master cylinder	1	
5	Right handlebar switch	1	
6	Throttle cable	2	Disconnect.
7	Throttle grip	1	
8	Rear brake light switch connector	2	Disconnect.
9	Rear brake master cylinder holder	1	
10	Rear brake master cylinder	1	
11	Left handlebar switch	1	
12	Handlebar grip	1	
13	Upper handlebar holder	2	

HANDLEBAR

Removing the handlebar



Order	Job/Parts to remove	Q'ty	Remarks
14	Handlebar	1	
			For installation, reverse the removal procedure.

EAS22860

REMOVING THE HANDLEBAR

1. Stand the vehicle on a level surface.

EWA13120

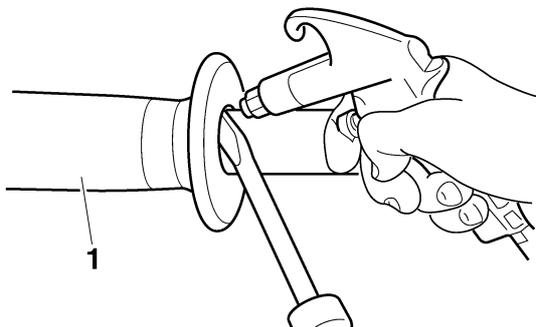
WARNING

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

2. Remove:
 - Handlebar grip "1"

TIP

Blow compressed air between the handlebar and the handlebar grip, and gradually push the grip off the handlebar.



EAS22880

CHECKING THE HANDLEBAR

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

EWA13690

WARNING

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

EAS22920

INSTALLING THE HANDLEBAR

1. Stand the vehicle on a level surface.

EWA13120

WARNING

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

2. Install:
 - Handlebar
 - Upper handlebar holders



Upper handlebar holder bolt
23 Nm (2.3 m·kgf, 17 ft·lbf)

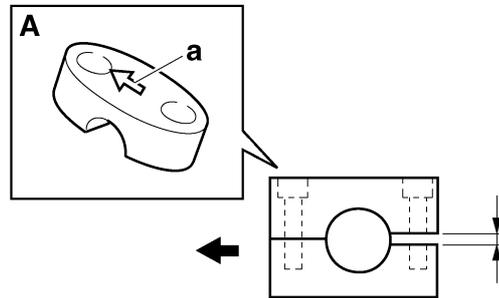
ECA37P1031

NOTICE

First, tighten the front bolt on each handlebar holder, then the rear bolt.

TIP

The upper handlebar holders should be installed with the arrow marks "a" facing forward "A".



3. Install:
 - Handlebar grip

- a. Apply a thin coat of a rubber adhesive to the left end of the handlebar.
- b. Slide the handlebar grip over the left end of the handlebar.
- c. Wipe off any excess rubber adhesive with a clean rag.

EWA13700

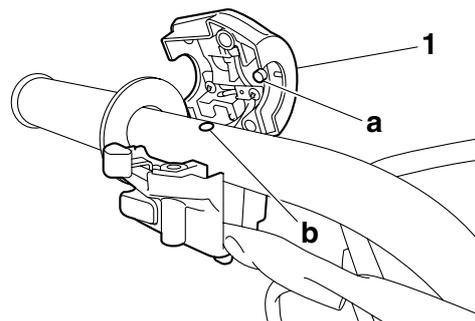
WARNING

Do not touch the handlebar grip until the rubber adhesive has fully dried.

4. Install:
 - Left handlebar switch "1"

TIP

Align the projection "a" on the left handlebar switch with the hole "b" in the handlebar.



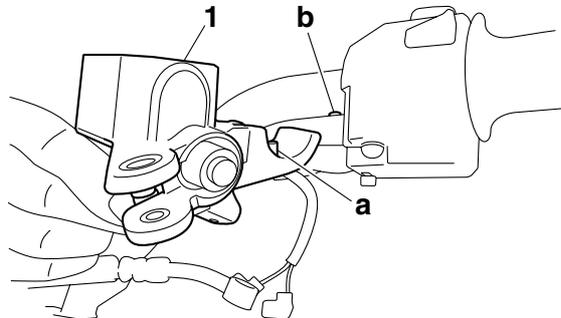
5. Install:
 - Rear brake master cylinder "1"
 - Rear brake master cylinder holder



Brake master cylinder holder bolt
7 Nm (0.7 m·kgf, 5.1 ft·lbf)

TIP

- Align the projection “a” on the brake master cylinder with the hole “b” in the handlebar.
- First, tighten the front bolt, then the rear bolt.

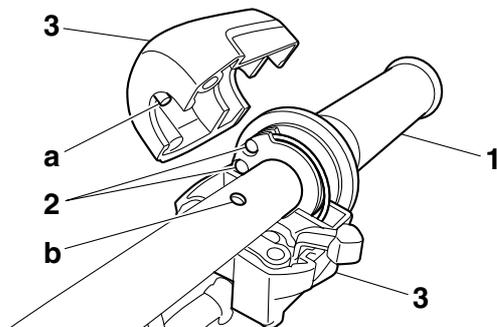


6. Install:

- Throttle grip “1”
- Throttle cables “2”
- Right handlebar switch “3”

TIP

- Be sure to position the washer between the throttle grip and the right handlebar switch.
- Lubricate the end of the throttle cables and the inside of the throttle grip with a thin coat of lithium-soap-based grease.
- Align the projection “a” on the right handlebar switch with the hole “b” in the handlebar.
- Be sure to slide the throttle cable rubber cover to its original position.



7. Install:

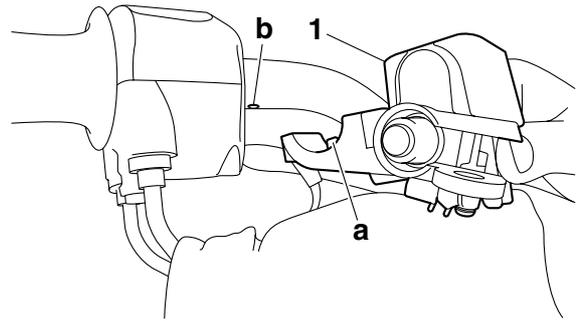
- Front brake master cylinder “1”
- Front brake master cylinder holder



**Brake master cylinder holder bolt
7 Nm (0.7 m·kgf, 5.1 ft·lbf)**

TIP

- Align the projection “a” on the brake master cylinder with the hole “b” in the handlebar.
- First, tighten the front bolt, then the rear bolt.



8. Adjust:

- Throttle cable free play
Refer to “ADJUSTING THE THROTTLE CABLE FREE PLAY” on page 3-23.

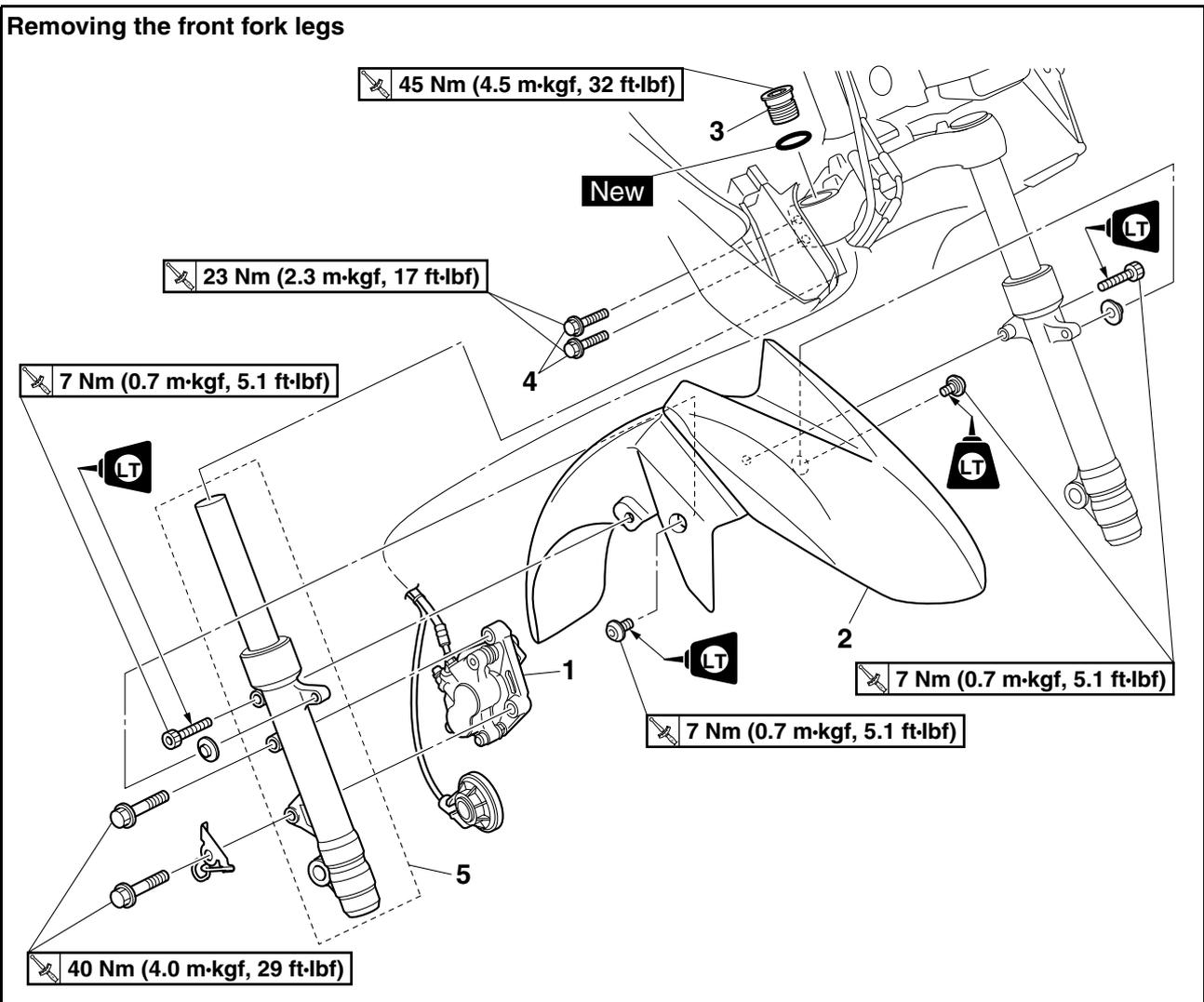


**Throttle cable free play
3.0–5.0 mm (0.12–0.20 in)**

EAS22950

FRONT FORK

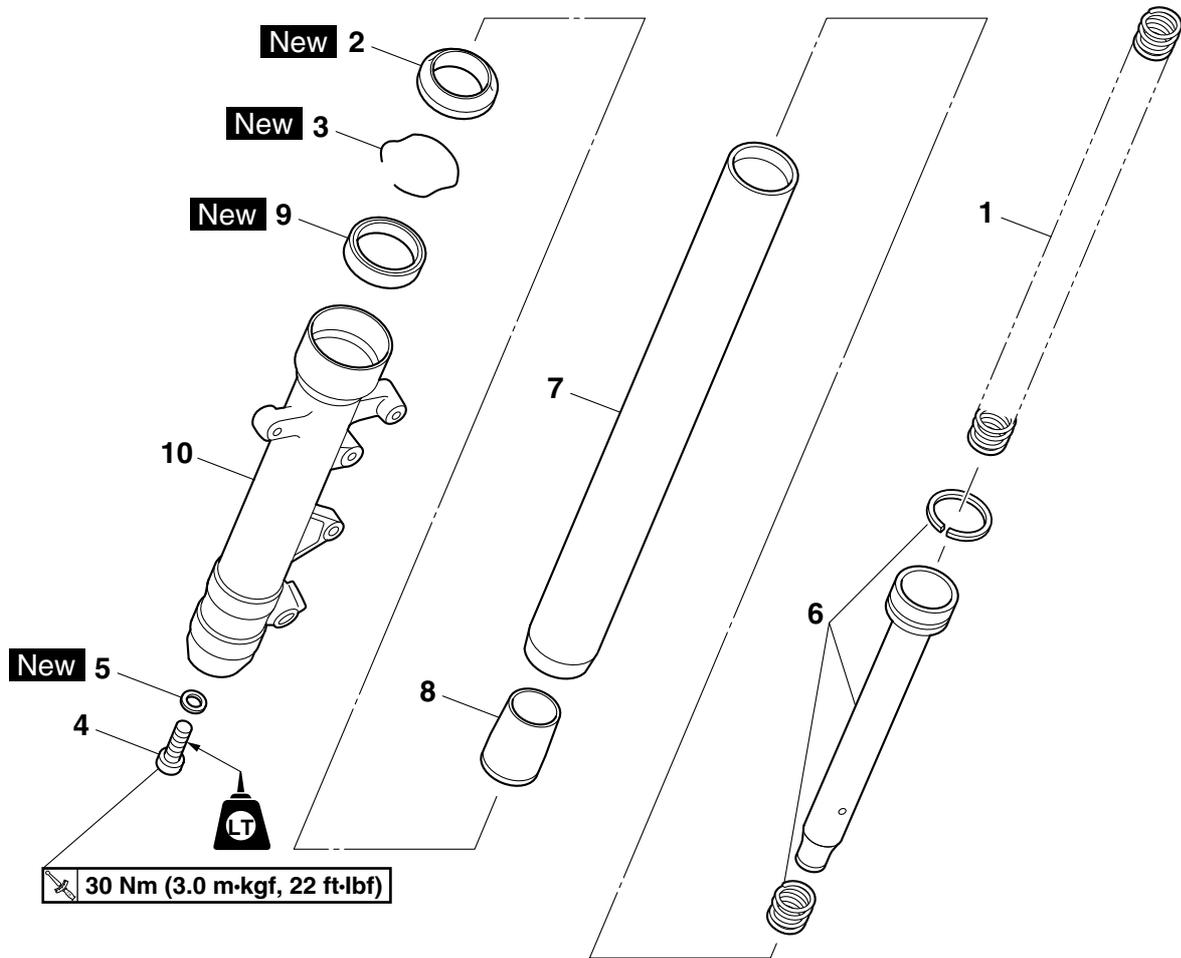
Removing the front fork legs



Order	Job/Parts to remove	Q'ty	Remarks
			The following procedure applies to both of the front fork legs.
	Front cowling assembly		Refer to "GENERAL CHASSIS" on page 4-1.
	Front wheel		Refer to "FRONT WHEEL" on page 4-9.
1	Front brake caliper	1	
2	Front fender	1	
3	Cap bolt	1	
4	Lower bracket pinch bolt	2	Loosen.
5	Front fork leg	1	
			For installation, reverse the removal procedure.

FRONT FORK

Disassembling the front fork legs



Order	Job/Parts to remove	Q'ty	Remarks
			The following procedure applies to both of the front fork legs.
1	Fork spring	1	
2	Dust seal	1	
3	Oil seal clip	1	
4	Damper rod bolt	1	
5	Copper washer	1	
6	Damper rod	1	
7	Inner tube	1	
8	Oil flow stopper	1	
9	Oil seal	1	
10	Outer tube	1	
			For assembly, reverse the disassembly procedure.

EAS22960

REMOVING THE FRONT FORK LEGS

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

1. Stand the vehicle on a level surface.

EWA13120

WARNING

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

2. Remove:
 - Cap bolt "1"

ECA37P1027

NOTICE

When removing the cap bolt, take care not to damage the rectifier/regulator "2" with the tools.

TIP

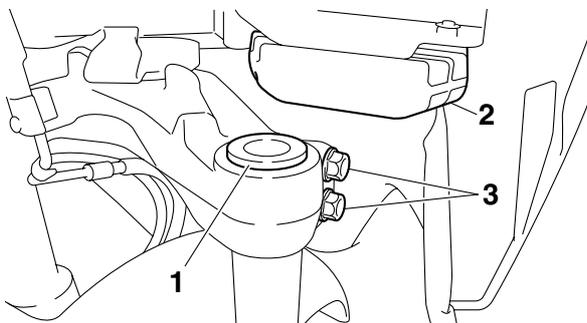
If the cap bolt is difficult to loosen, slightly loosen the lower bracket pinch bolts "3".

3. Loosen:
 - Lower bracket pinch bolts

EWA37P1022

WARNING

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



EAS22980

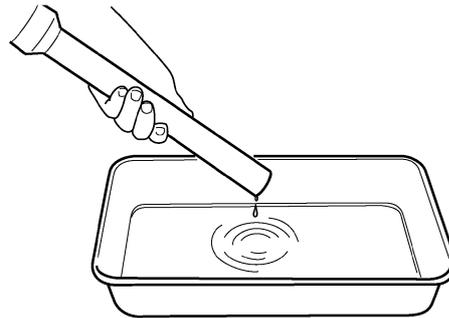
DISASSEMBLING THE FRONT FORK LEGS

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

1. Drain:
 - Fork oil

TIP

Stroke the inner tube several times while draining the fork oil.

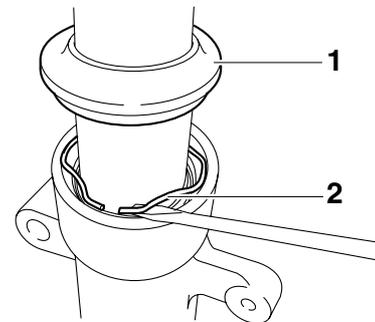


2. Remove:
 - Dust seal "1"
 - Oil seal clip "2" (with a flat-head screwdriver)

ECA14180

NOTICE

Do not scratch the inner tube.



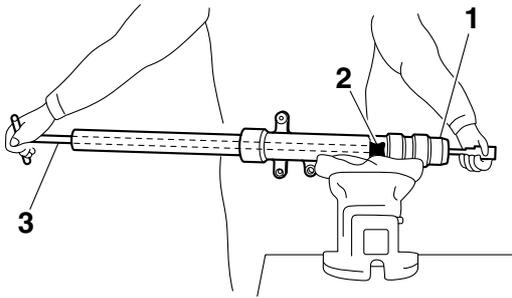
3. Remove:
 - Damper rod bolt "1"
 - Copper washer
 - Damper rod

TIP

While holding the damper rod with the damper rod holder "2" and T-handle "3", loosen the damper rod bolt.



Damper rod holder
90890-01294
Damping rod holder set
YM-01300
T-handle
90890-01326
T-handle 3/8" drive 60 cm long
YM-01326



EAS23010

CHECKING THE FRONT FORK LEGS

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

1. Check:

- Inner tube
 - Outer tube
- Bends/damage/scratches → Replace.

EWA13650

⚠ WARNING

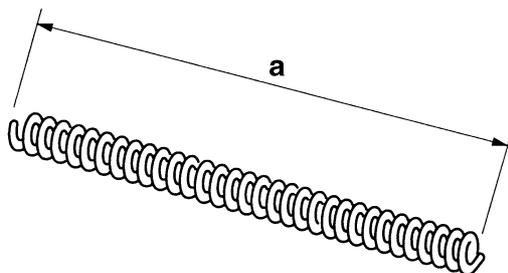
Do not attempt to straighten a bent inner tube as this may dangerously weaken it.

2. Measure:

- Spring free length “a”
- Out of specification → Replace.



Fork spring free length
340.0 mm (13.39 in)
Limit
333.0 mm (13.11 in)



3. Check:

- Damper rod
- Damage/wear → Replace.
 Obstruction → Blow out all of the oil passages with compressed air.
- Oil flow stopper
- Damage → Replace.

ECA37P1032

NOTICE

When disassembling and assembling the front fork leg, do not allow any foreign material to enter the front fork.

EAS23030

ASSEMBLING THE FRONT FORK LEGS

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

EWA13660

⚠ WARNING

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

TIP

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

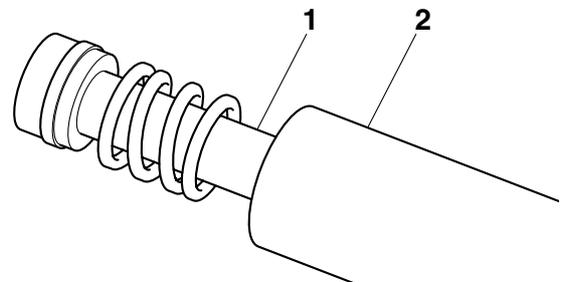
1. Install:

- Damper rod “1”

ECA37P1033

NOTICE

Allow the damper rod to slide slowly down the inner tube “2” until it protrudes from the bottom of the inner tube. Be careful not to damage the inner tube.



2. Lubricate:

- Inner tube’s outer surface



Recommended oil
Fork oil 10W or equivalent

3. Tighten:

- Damper rod bolt “1”

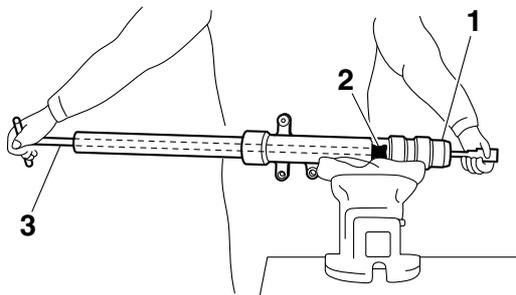


Damper rod bolt
30 Nm (3.0 m·kgf, 22 ft·lbf)
LOCTITE®

TIP

While holding the damper rod with the damper rod holder "2" and T-handle "3", tighten the damper rod bolt.

	<p>Damper rod holder 90890-01294</p> <p>Damping rod holder set YM-01300</p> <p>T-handle 90890-01326</p> <p>T-handle 3/8" drive 60 cm long YM-01326</p>
---	--



4. Install:

- Oil seal "1" **New**
(with the fork seal driver weight "2" and fork seal driver attachment "3")

	<p>Fork seal driver weight 90890-01367</p> <p>Replacement hammer YM-A9409-7</p> <p>Fork seal driver attachment (ø38) 90890-01372</p> <p>Replacement 38 mm YM-A5142-1</p>
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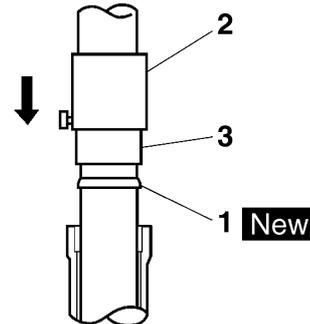
ECA14220

NOTICE

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

TIP

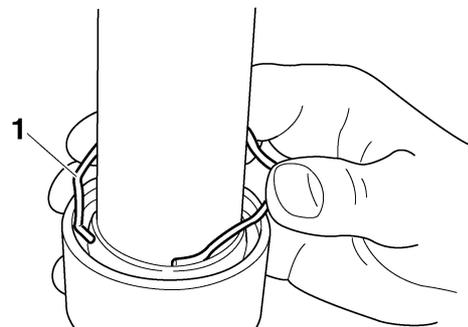
- Before installing the oil seal, lubricate its lips with lithium-soap-based grease.
- Lubricate the outer surface of the inner tube with fork oil.
- Before installing the oil seal, cover the top of the front fork leg with a plastic bag to protect the oil seal during installation.



5. Install:
- Oil seal clip "1"

TIP

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

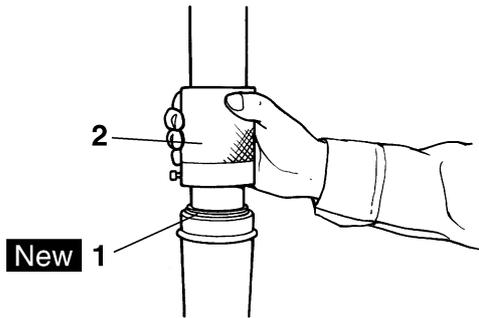


6. Install:

- Dust seal "1" **New**
(with the fork seal driver weight "2")

	<p>Fork seal driver weight 90890-01367</p> <p>Replacement hammer YM-A9409-7</p>
---	---

FRONT FORK



7. Fill:

- Front fork leg
(with the specified amount of the recommended fork oil)

	<p>Recommended oil Fork oil 10W or equivalent</p> <p>Quantity 128.0 cm³ (4.33 US oz, 4.51 Imp.oz)</p>
--	--

ECA14230

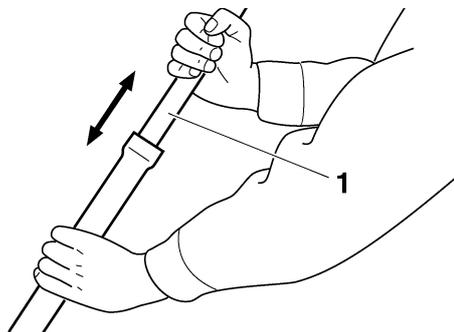
NOTICE

- **Be sure to use the recommended fork oil. Other oils may have an adverse effect on front fork performance.**
- **When disassembling and assembling the front fork leg, do not allow any foreign material to enter the front fork.**

8. After filling the front fork leg, slowly stroke the inner tube "1" up and down (at least ten times) to distribute the fork oil.

TIP

Be sure to stroke the inner tube slowly because the fork oil may spurt out.



9. Before measuring the fork oil level, wait ten minutes until the oil has settled and the air bubbles have dispersed.

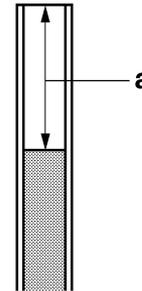
TIP

Be sure to bleed the front fork leg of any residual air.

10. Measure:

- Front fork leg oil level "a"
(from the top of the inner tube, with the inner tube fully compressed and without the fork spring)
Out of specification → Correct.

	<p>Level 109.0 mm (4.29 in)</p>
--	--



11. Install:

- Fork spring

EAS23050

INSTALLING THE FRONT FORK LEGS

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

1. Install:
 - Front fork leg "1"

EWA37P1023

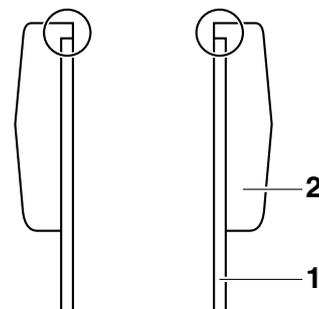
WARNING

Make sure the brake hose is routed properly.

TIP

Pull up the inner tube until it stops, and then tighten the lower bracket pinch bolts.

	<p>Lower bracket pinch bolt 23 Nm (2.3 m·kgf, 17 ft·lbf)</p>
--	---



2. Lower bracket

2. Install:

- Cap bolt

(along with the O-ring **New**)



Cap bolt
45 Nm (4.5 m·kgf, 32 ft·lbf)

ECA37P1028

NOTICE

When installing the cap bolt, take care not to damage the rectifier/regulator with the tools.

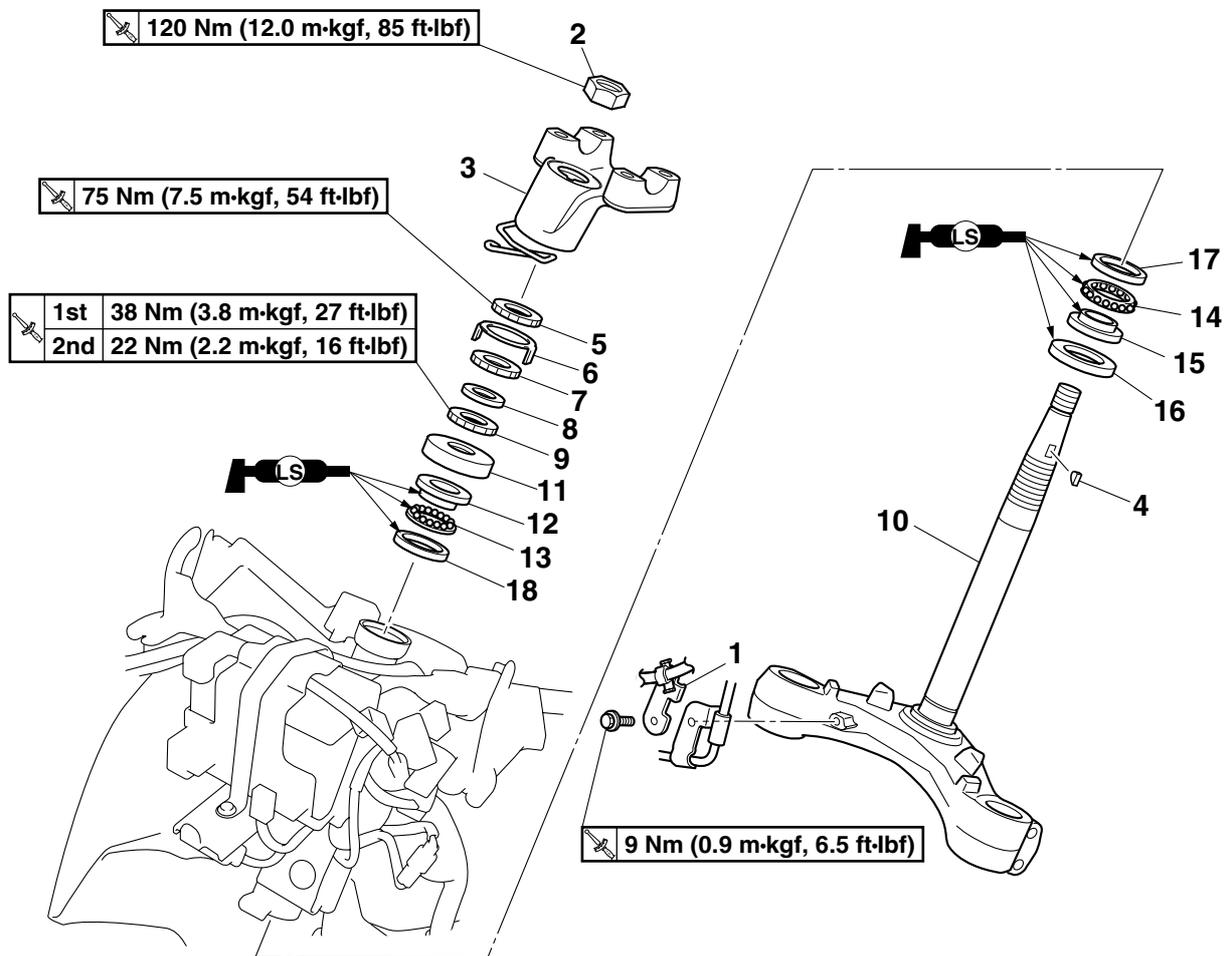
TIP

- Before installing the cap bolt, lubricate its O-ring with grease.
 - If the cap bolt is difficult to install, slightly loosen the lower bracket pinch bolts.
-

EAS23090

STEERING HEAD

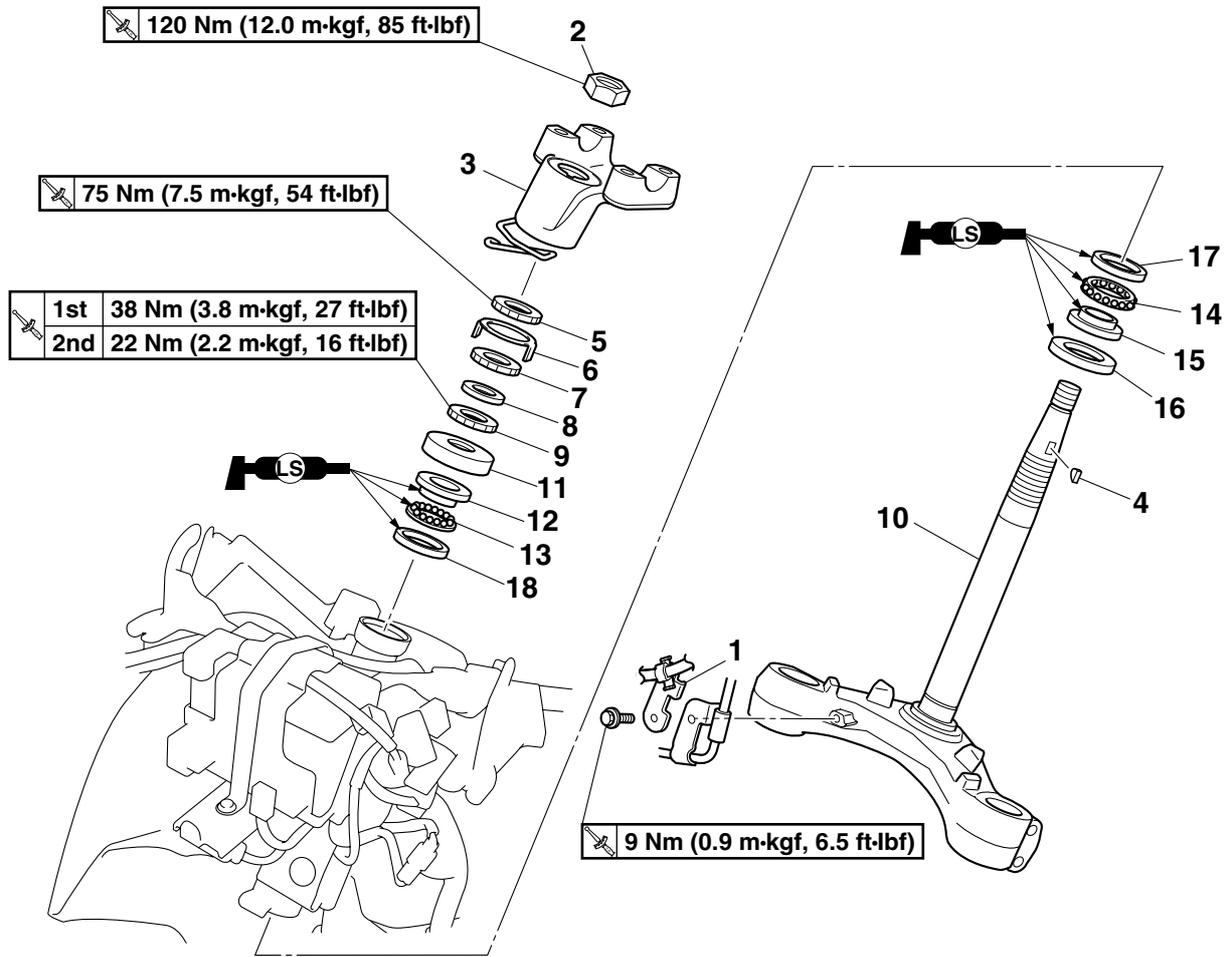
Removing the lower bracket



Order	Job/Parts to remove	Q'ty	Remarks
	Front cowling assembly		Refer to "GENERAL CHASSIS" on page 4-1.
	Meter assembly cover		Refer to "GENERAL CHASSIS" on page 4-1.
	Front fork legs		Refer to "FRONT FORK" on page 4-50.
1	Speed sensor lead holder bracket	1	
2	Steering stem nut	1	
3	Lower handlebar holder	1	
4	Woodruff key	1	
5	Upper ring nut	1	
6	Lock washer	1	
7	Center ring nut	1	
8	Rubber washer	1	
9	Lower ring nut	1	
10	Lower bracket	1	
11	Upper bearing cover	1	
12	Upper bearing inner race	1	

STEERING HEAD

Removing the lower bracket

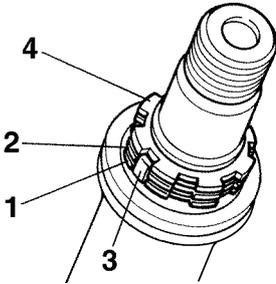


Order	Job/Parts to remove	Q'ty	Remarks
13	Upper bearing	1	
14	Lower bearing	1	
15	Lower bearing inner race	1	
16	Dust seal	1	
17	Lower bearing outer race	1	
18	Upper bearing outer race	1	
			For installation, reverse the removal procedure.

STEERING HEAD

- Rubber washer
- Center ring nut “2”
- Lock washer “3”
- Upper ring nut “4”

Refer to “CHECKING AND ADJUSTING THE STEERING HEAD” on page 3-37.



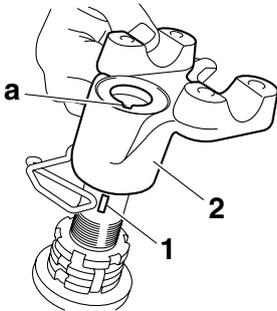
3. Install:

- Woodruff key “1”
- Lower handlebar holder “2”
- Steering stem nut

	Steering stem nut 120 Nm (12.0 m-kgf, 85 ft-lbf)
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TIP

Align the woodruff key with the groove “a” in the lower handlebar holder.

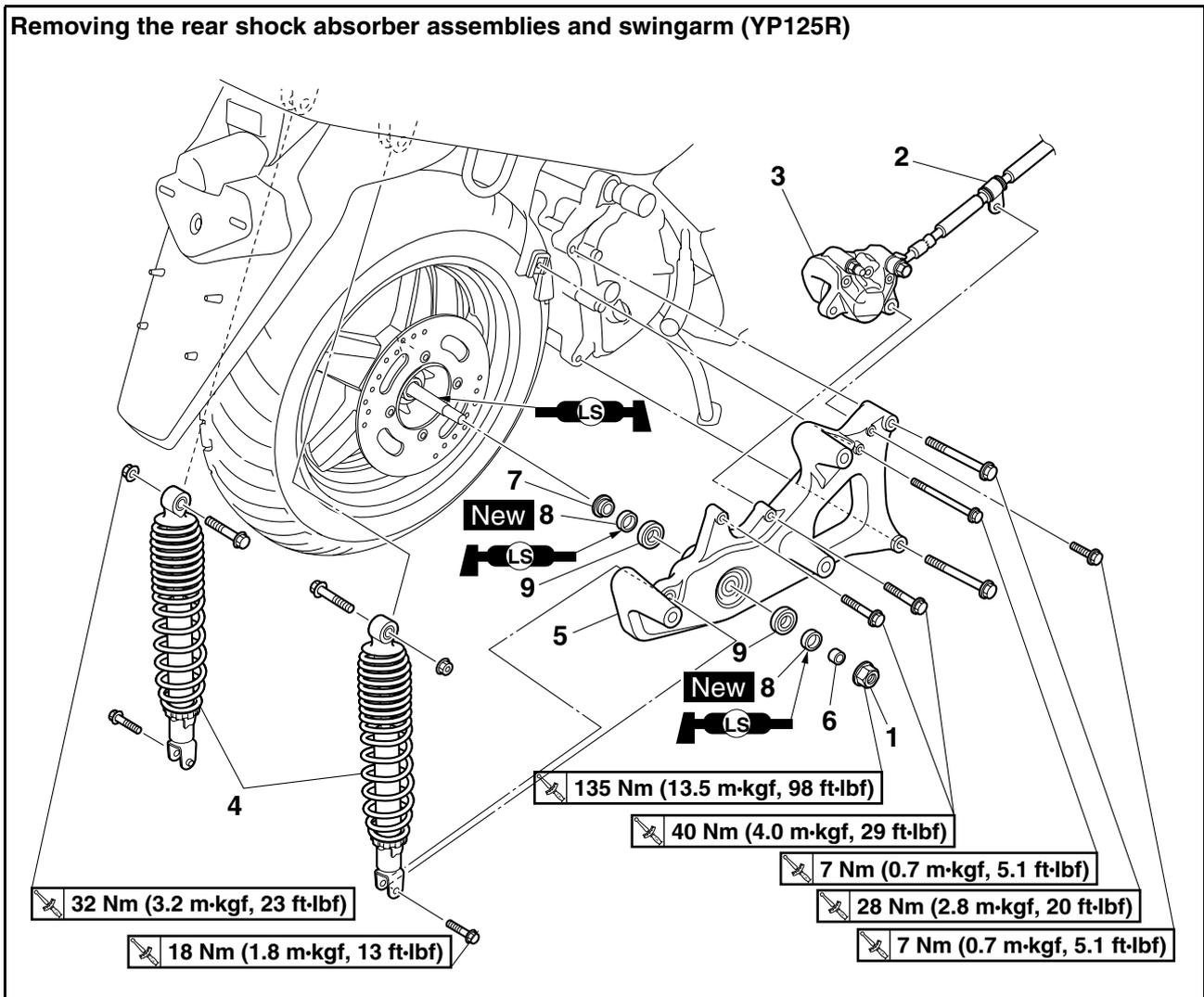


REAR SHOCK ABSORBER ASSEMBLIES AND SWINGARM

EAS23160

REAR SHOCK ABSORBER ASSEMBLIES AND SWINGARM

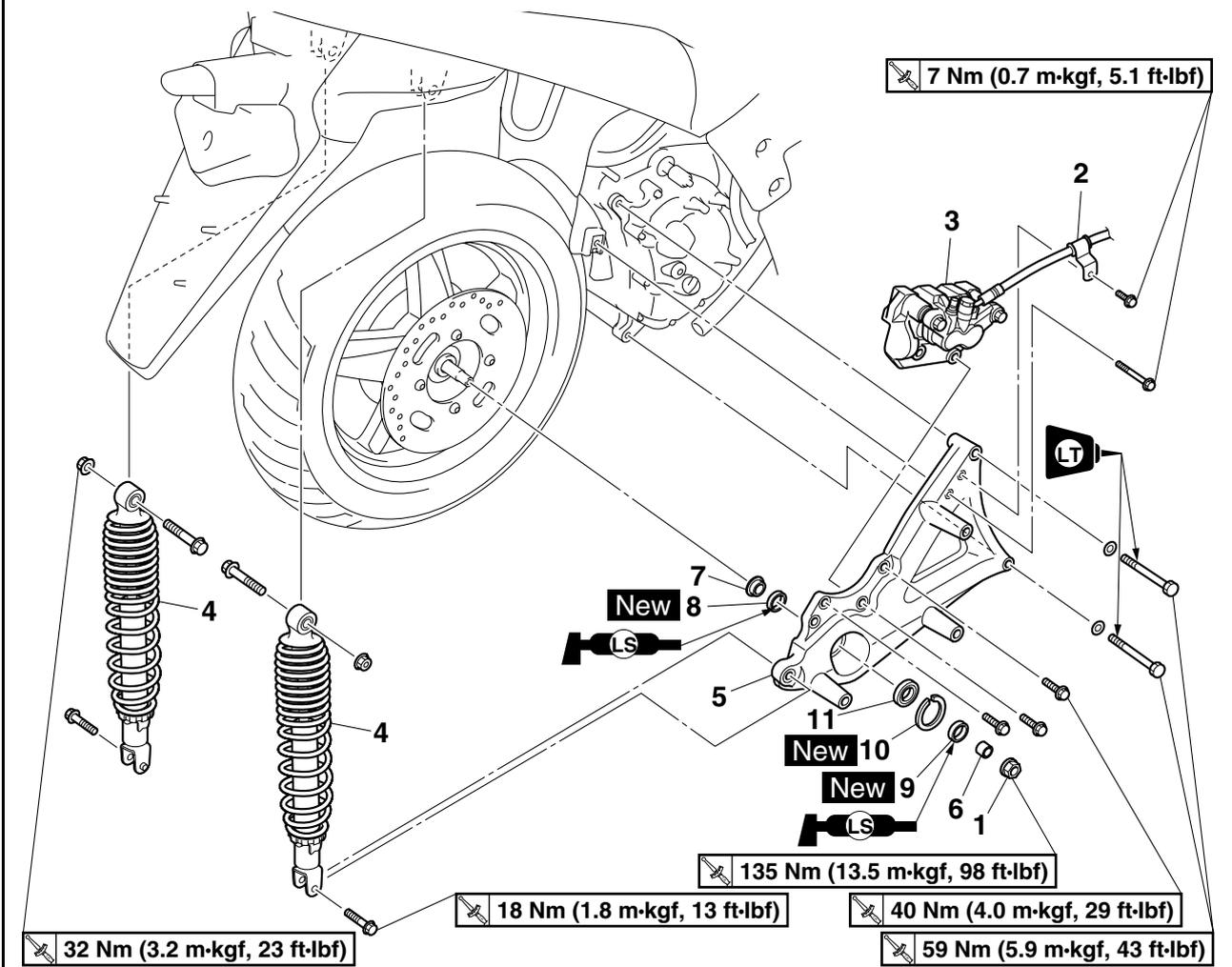
Removing the rear shock absorber assemblies and swingarm (YP125R)



Order	Job/Parts to remove	Q'ty	Remarks
	Muffler		Refer to "ENGINE REMOVAL (YP125R)" on page 5-1.
1	Rear wheel axle nut	1	
2	Brake hose holder	1	
3	Rear brake caliper	1	
4	Rear shock absorber assembly	2	
5	Swingarm	1	
6	Spacer	1	
7	Collar	1	
8	Oil seal	2	
9	Bearing	2	
			For installation, reverse the removal procedure.

REAR SHOCK ABSORBER ASSEMBLIES AND SWINGARM

Removing the rear shock absorber assemblies and swingarm (YP250R)



Order	Job/Parts to remove	Q'ty	Remarks
	Muffler		Refer to "ENGINE REMOVAL (YP250R)" on page 5-61.
1	Rear wheel axle nut	1	
2	Brake hose holder	1	
3	Rear brake caliper	1	
4	Rear shock absorber assembly	2	
5	Swingarm	1	
6	Spacer	1	
7	Collar	1	
8	Oil seal	1	
9	Oil seal	1	
10	Circlip	1	
11	Bearing	1	
			For installation, reverse the removal procedure.

REAR SHOCK ABSORBER ASSEMBLIES AND SWINGARM

EAS23220

REMOVING THE REAR SHOCK ABSORBER ASSEMBLIES

1. Stand the vehicle on a level surface.

EWA13120



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

TIP

Place the vehicle on the centerstand so that the rear wheel is elevated.

EAS23340

REMOVING THE SWINGARM

1. Stand the vehicle on a level surface.

EWA13120



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

TIP

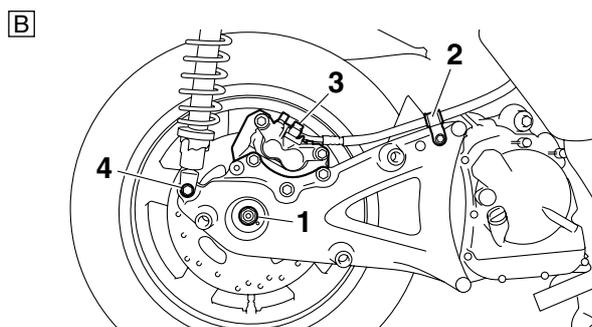
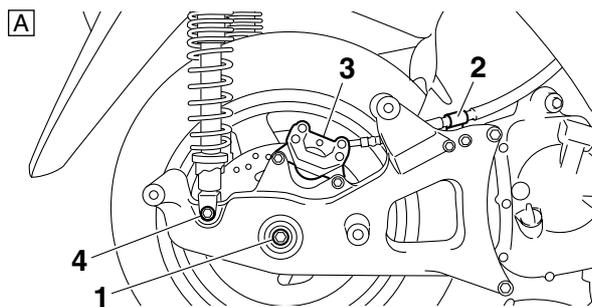
Place the vehicle on the centerstand so that the rear wheel is elevated.

2. Remove:

- Rear wheel axle nut “1”
- Brake hose holder “2”
- Rear brake caliper “3”
- Rear shock absorber assembly lower bolt “4”

TIP

Do not squeeze the brake lever when removing the brake caliper.



A. YP125R

B. YP250R

3. Remove:
 - Swingarm

EAS23240

CHECKING THE REAR SHOCK ABSORBER ASSEMBLY

1. Check:

- Rear shock absorber rod
 - Bends/damage → Replace the rear shock absorber assembly.
- Rear shock absorber
 - Oil leaks → Replace the rear shock absorber assembly.
- Spring
 - Damage/wear → Replace the rear shock absorber assembly.
- Bushings
 - Damage/wear → Replace.
- Bolts
 - Bends/damage/wear → Replace.

EAS23370

CHECKING THE SWINGARM

1. Check:

- Swingarm
 - Bends/cracks/damage → Replace.

2. Check:

- Spacer
- Collar
- Oil seals
- Bearing
 - Damage/wear → Replace.

EAS28780

INSTALLING THE SWINGARM

1. Lubricate:

- Bearing
- Oil seal lips



2. Install:

- Swingarm “1”
- Rear wheel axle nut “2”
(temporarily tighten)
- Swingarm mounting bolt (upper side) “3”
(temporarily tighten)
- Swingarm mounting bolt (lower side) “4”
(temporarily tighten)

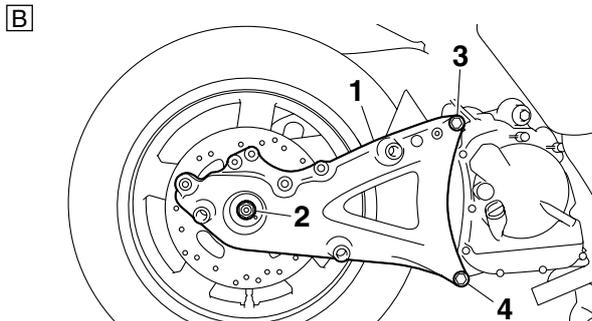
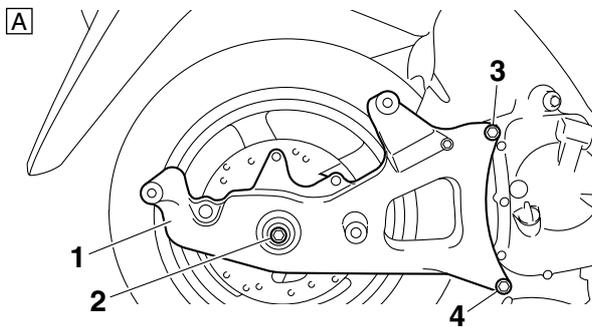
3. Tighten:

- Rear wheel axle nut “2”
- Swingarm mounting bolt (upper side) “3”
- Swingarm mounting bolt (lower side) “4”

REAR SHOCK ABSORBER ASSEMBLIES AND SWINGARM



Rear wheel axle nut
135 Nm (13.5 m·kgf, 98 ft·lbf)
Swingarm mounting bolt (upper
side)
28 Nm (2.8 m·kgf, 20 ft·lbf)
(YP125R)
59 Nm (5.9 m·kgf, 43 ft·lbf)
(YP250R)
Swingarm mounting bolt (lower
side)
28 Nm (2.8 m·kgf, 20 ft·lbf)
(YP125R)
59 Nm (5.9 m·kgf, 43 ft·lbf)
(YP250R)



- A. YP125R
- B. YP250R

REAR SHOCK ABSORBER ASSEMBLIES AND SWINGARM

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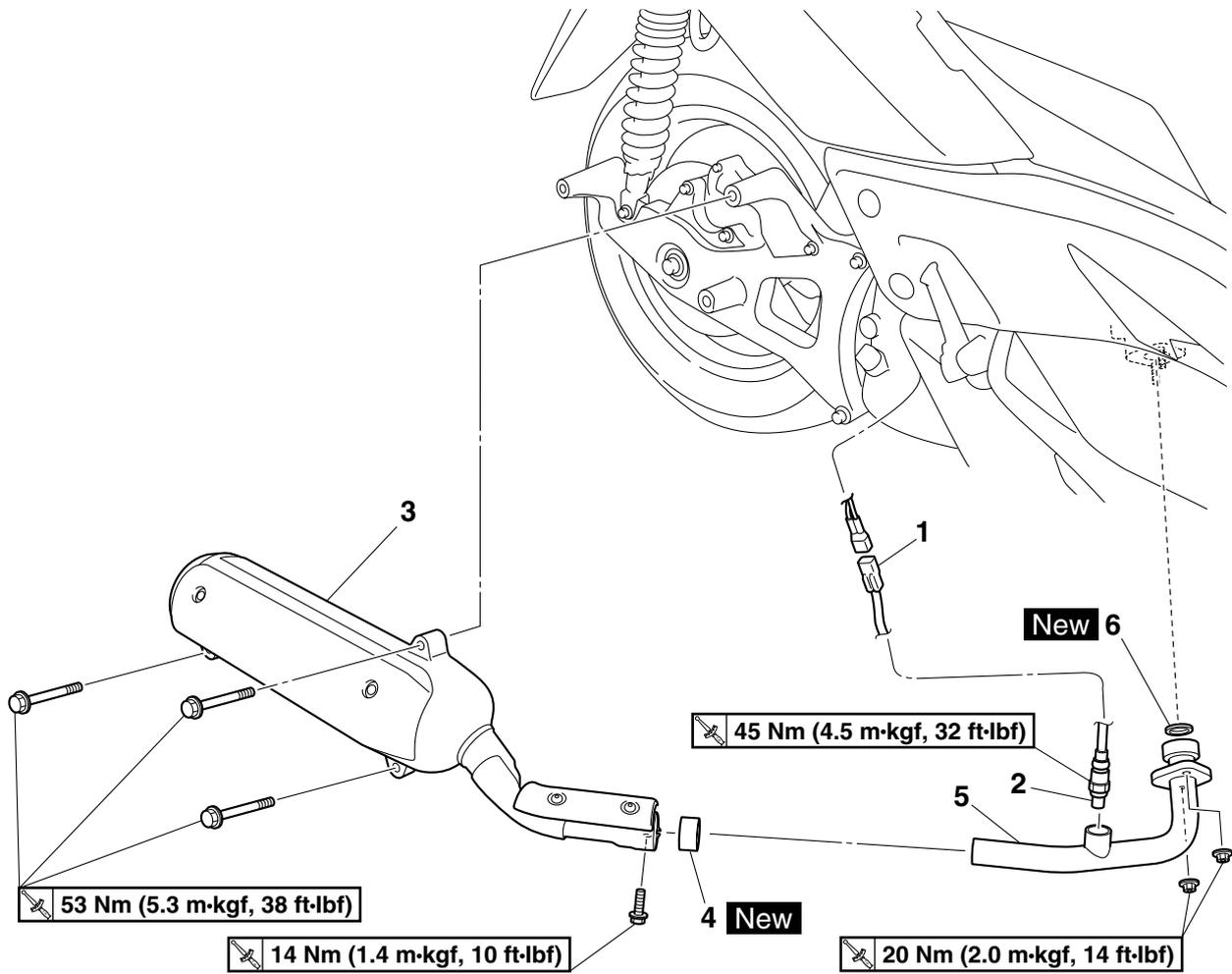
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ENGINE REMOVAL (YP125R)

EAS37P1135

ENGINE REMOVAL (YP125R)

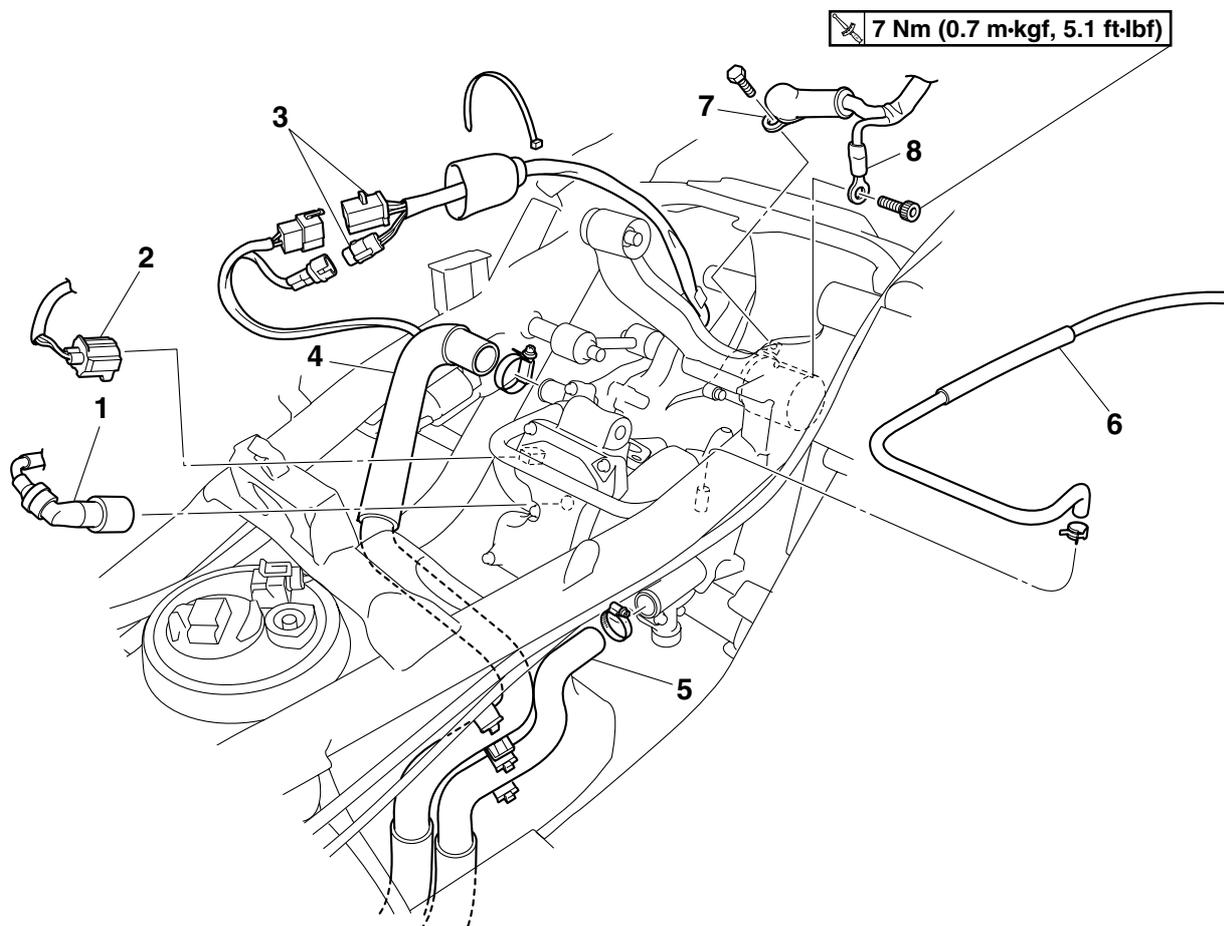
Removing the muffler and exhaust pipe



Order	Job/Parts to remove	Q'ty	Remarks
1	O ₂ sensor coupler	1	Disconnect.
2	O ₂ sensor	1	
3	Muffler	1	
4	Gasket	1	
5	Exhaust pipe	1	
6	Gasket	1	
			For installation, reverse the removal procedure.

ENGINE REMOVAL (YP125R)

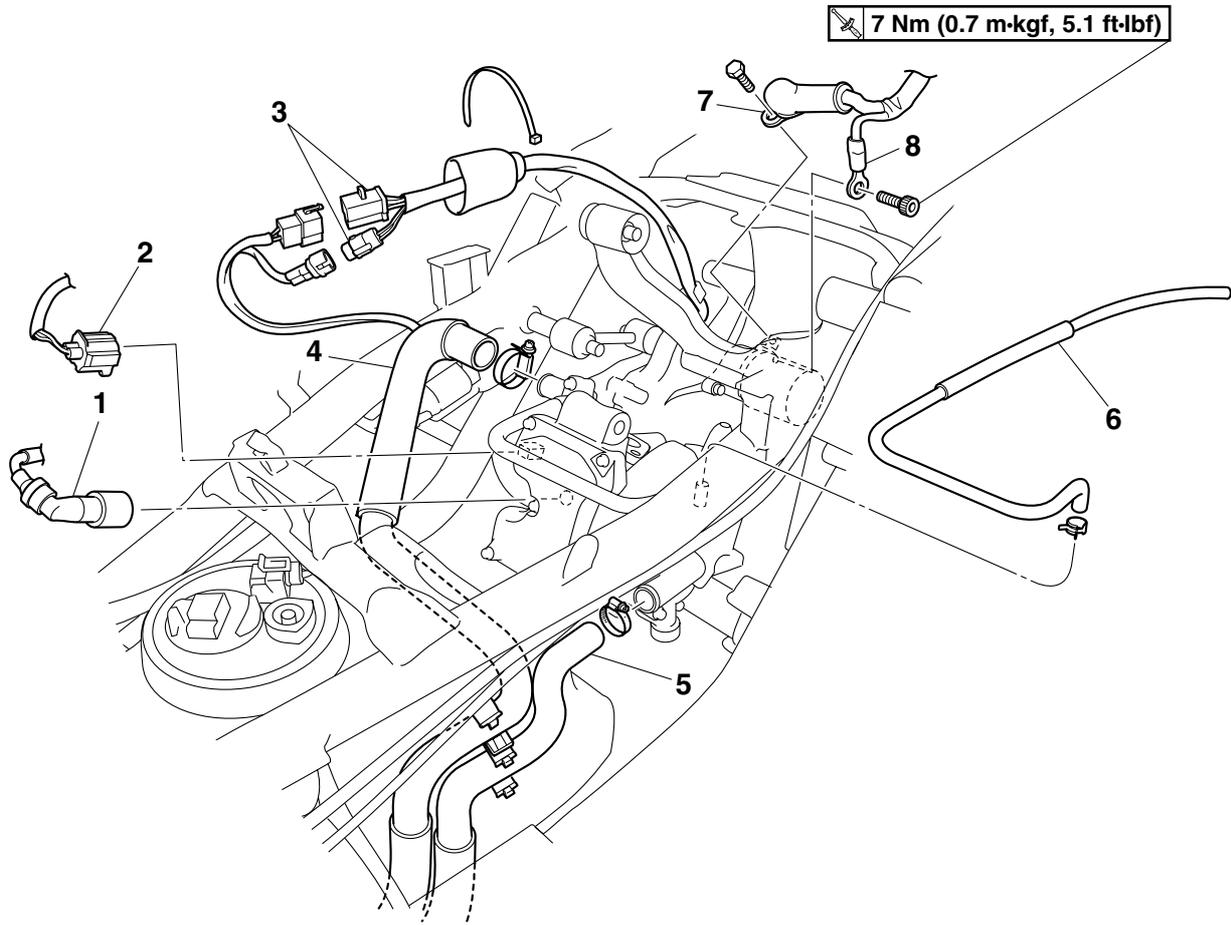
Disconnecting the leads and hoses



Order	Job/Parts to remove	Q'ty	Remarks
	Engine oil		Drain. Refer to "CHANGING THE ENGINE OIL" on page 3-12.
	Coolant		Drain. Refer to "CHANGING THE COOLANT" on page 3-18.
	Air filter case		Refer to "GENERAL CHASSIS" on page 4-1.
	V-belt case air duct joint		Refer to "V-BELT AUTOMATIC TRANSMISSION (YP125R)" on page 5-30.
	Fuel injector assembly/Throttle body/Intake manifold		Refer to "THROTTLE BODY" on page 7-5.
1	Spark plug cap	1	Disconnect.
2	Coolant temperature sensor coupler	1	Disconnect.
3	Crankshaft position sensor/stator assembly coupler	2	Disconnect.
4	Radiator inlet hose	1	Disconnect.
5	Radiator outlet hose	1	Disconnect.
6	Cylinder head breather hose	1	
7	Starter motor lead	1	Disconnect.

ENGINE REMOVAL (YP125R)

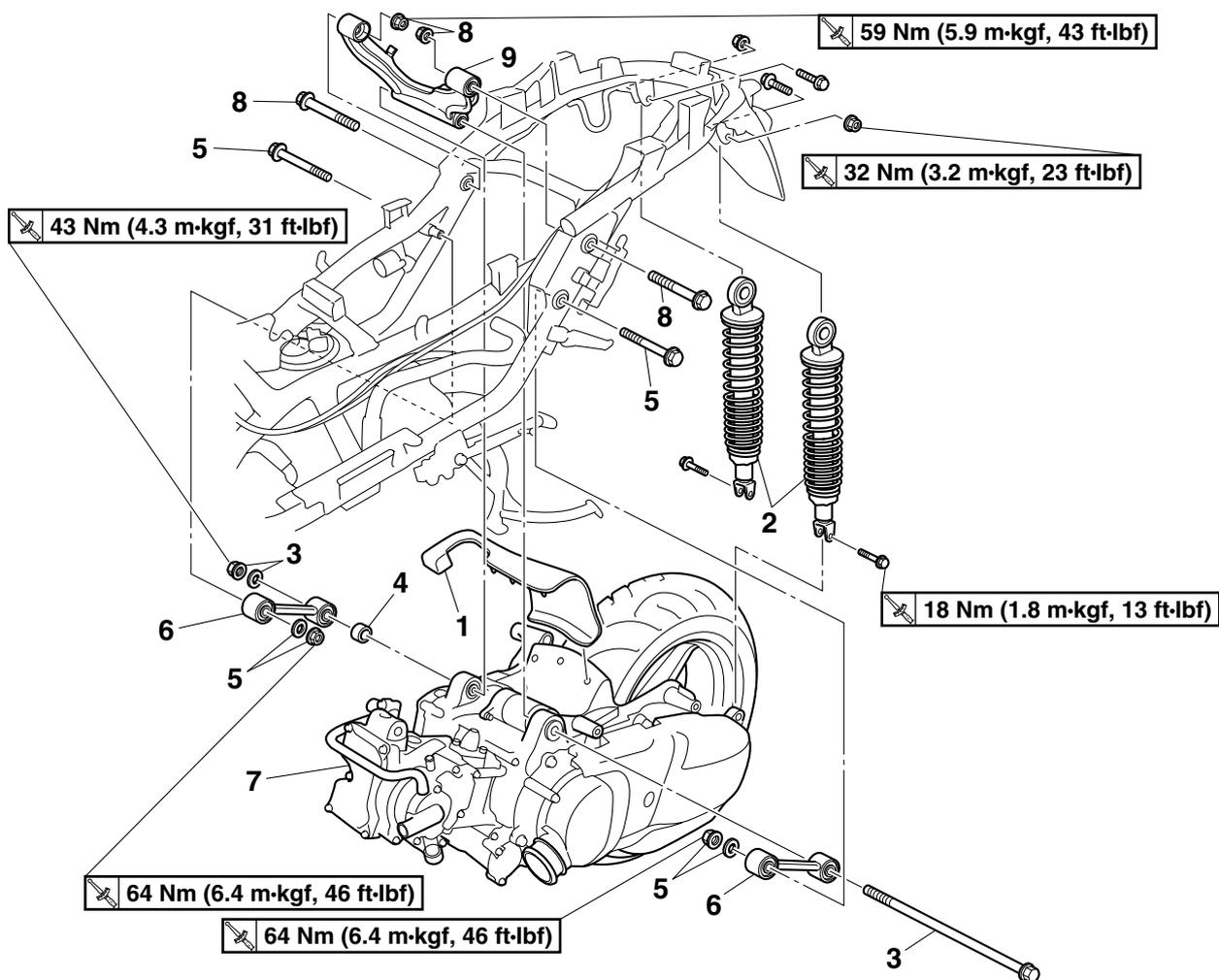
Disconnecting the leads and hoses



Order	Job/Parts to remove	Q'ty	Remarks
8	Ground lead	1	Disconnect.
			For installation, reverse the removal procedure.

ENGINE REMOVAL (YP125R)

Removing the engine



Order	Job/Parts to remove	Q'ty	Remarks
	Rear brake caliper		Refer to "REAR SHOCK ABSORBER ASSEMBLIES AND SWINGARM" on page 4-61.
			TIP Place a suitable stand under the engine.
1	Mudguard	1	
2	Rear shock absorber	2	
3	Engine mounting nut/washer/bolt	1/1/1	
4	Spacer	1	
5	Engine bracket rod nut/washer/bolt	2/2/2	
6	Engine bracket rod	2	
7	Engine	1	
8	Engine bracket nut/bolt	2/2	
9	Engine bracket	1	
			For installation, reverse the removal procedure.

ENGINE REMOVAL (YP125R)

EAS37P1136

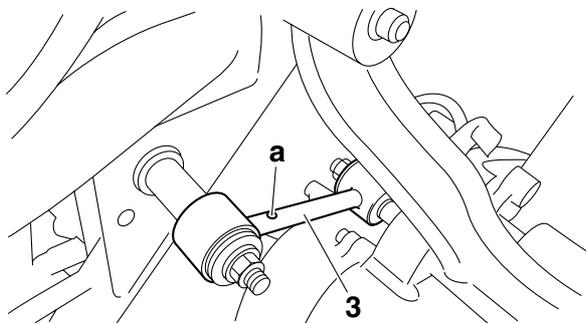
INSTALLING THE ENGINE

1. Install:

- Engine "1"
- Engine bracket "2"
- Engine bracket rods "3"
- Spacer "4"
- Engine mounting nut/washer/bolt "5"
- Engine bracket rod bolts/washers/nuts "6"
- Engine bracket nuts/bolts "7"
- Rear shock absorber assemblies "8"

TIP

- Do not fully tighten the bolts and nuts.
- Be sure to install each engine bracket rod "3" with the white mark "a" on the rod facing forward.

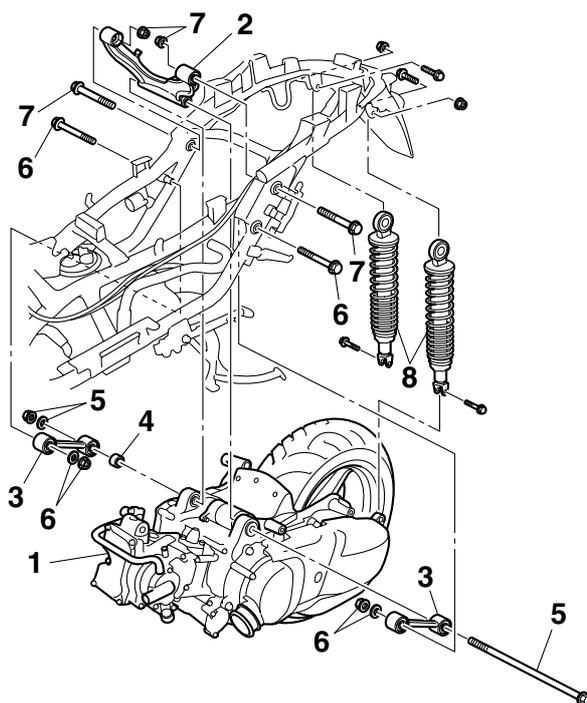


2. Tighten:

- Engine bracket rod nuts "6"
- Engine mounting nut "5"
- Engine bracket nuts "7"



Engine bracket rod nut
64 Nm (6.4 m·kgf, 46 ft·lbf)
Engine mounting nut
43 Nm (4.3 m·kgf, 31 ft·lbf)
Engine bracket nut
59 Nm (5.9 m·kgf, 43 ft·lbf)



3. Tighten:

- Rear shock absorber assembly upper nuts
- Rear shock absorber assembly lower bolts



Rear shock absorber assembly upper nut
32 Nm (3.2 m·kgf, 23 ft·lbf)
Rear shock absorber assembly lower bolt
18 Nm (1.8 m·kgf, 13 ft·lbf)

4. Install:

- Gasket **New**
- Exhaust pipe
- Exhaust pipe nuts (temporarily tighten)

5. Install:

- Muffler
- Muffler mounting bolts (temporarily tighten)

TIP

Install the muffler mounting bolts in the proper installing sequence as shown.

6. Tighten:

- Muffler mounting bolts

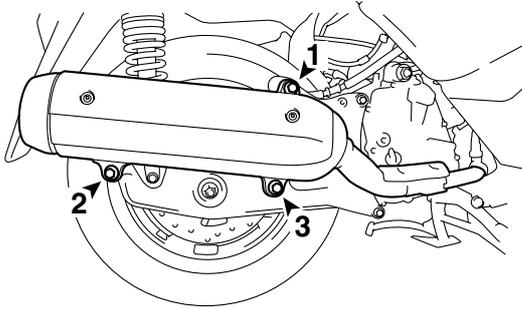


Muffler mounting bolt
53 Nm (5.3 m·kgf, 3.8 ft·lbf)

ENGINE REMOVAL (YP125R)

TIP

Tighten the muffler mounting bolts in the proper tightening sequence as shown.



7. Tighten:

- Exhaust pipe nuts



Exhaust pipe nut
20 Nm (2.0 m·kgf, 14 ft·lbf)

8. Tighten:

- Muffler joint bolt
- O₂ sensor



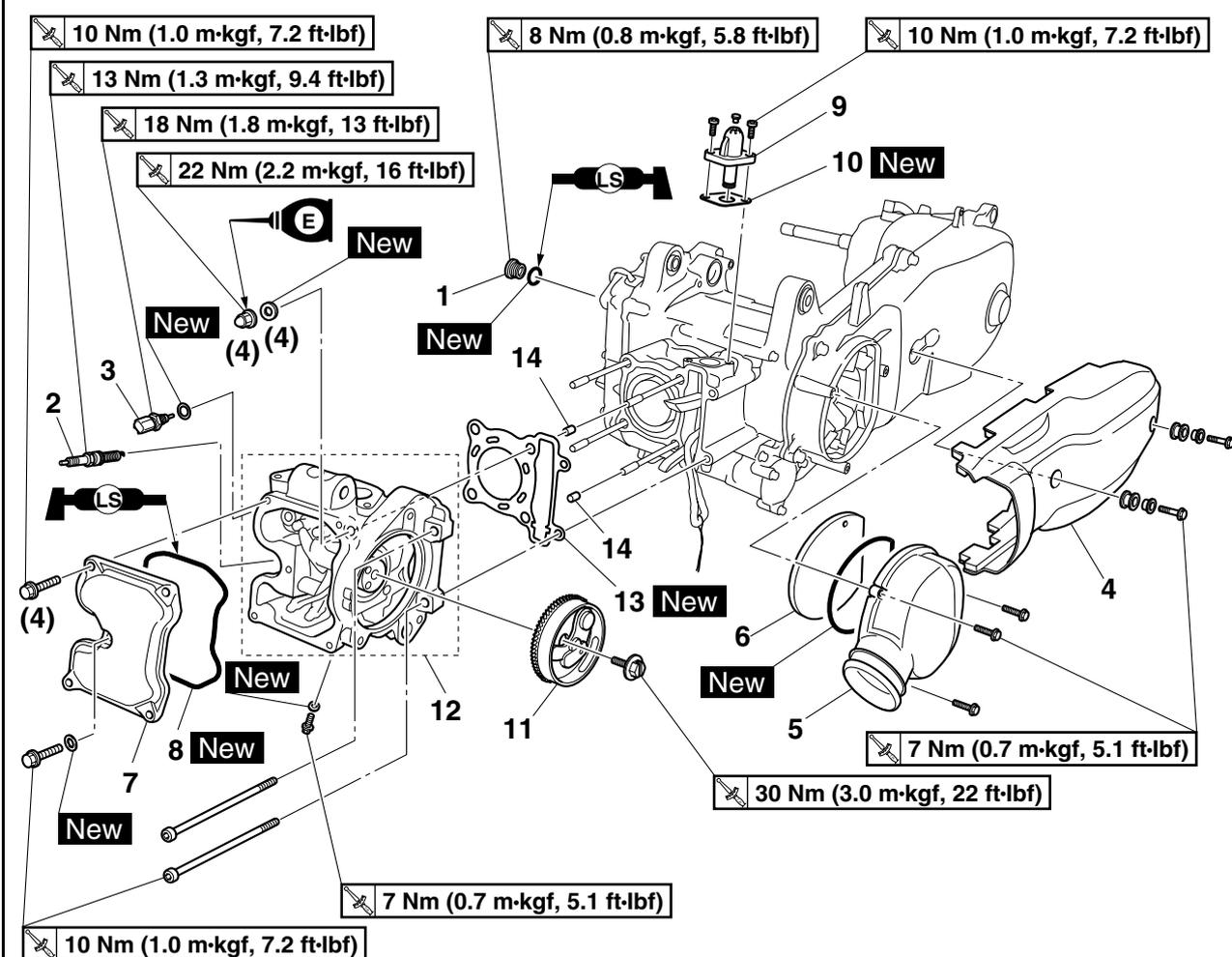
Muffler joint bolt
14 Nm (1.4 m·kgf, 10 ft·lbf)
O₂ sensor
45 Nm (4.5 m·kgf, 32 ft·lbf)

CYLINDER HEAD (YP125R)

EAS37P1001

CYLINDER HEAD (YP125R)

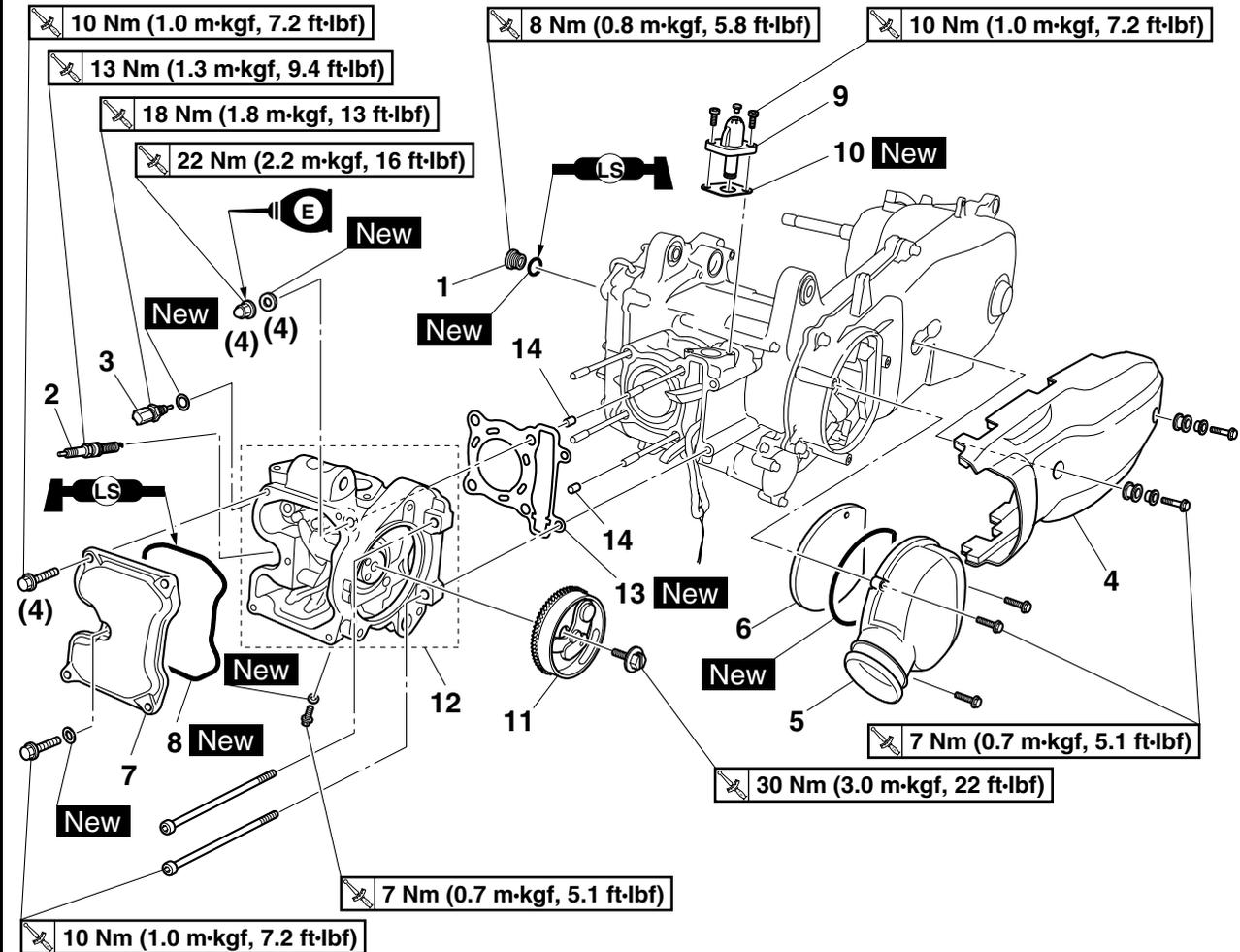
Removing the cylinder head



Order	Job/Parts to remove	Q'ty	Remarks
	Thermostat		Refer to "THERMOSTAT (YP125R)" on page 6-3.
	Water pump		Refer to "WATER PUMP (YP125R)" on page 6-5.
	Engine		Refer to "ENGINE REMOVAL (YP125R)" on page 5-1.
1	Timing mark accessing plug	1	
2	Spark plug	1	
3	Coolant temperature sensor	1	
4	V-belt case cover	1	
5	V-belt case air duct	1	
6	V-belt case air filter element	1	
7	Cylinder head cover	1	
8	Cylinder head cover gasket	1	
9	Timing chain tensioner	1	
10	Timing chain tensioner gasket	1	
11	Camshaft sprocket	1	

CYLINDER HEAD (YP125R)

Removing the cylinder head



Order	Job/Parts to remove	Q'ty	Remarks
12	Cylinder head	1	
13	Cylinder head gasket	1	
14	Dowel pin	2	
			For installation, reverse the removal procedure.

CYLINDER HEAD (YP125R)

EAS37P1002

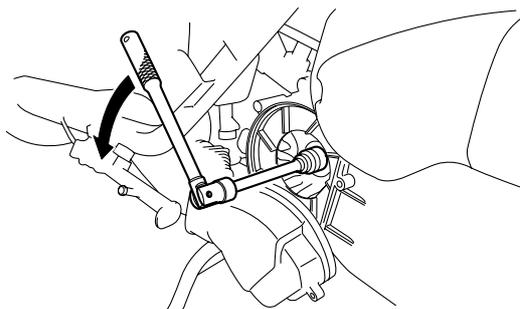
REMOVING THE CYLINDER HEAD

1. Align:

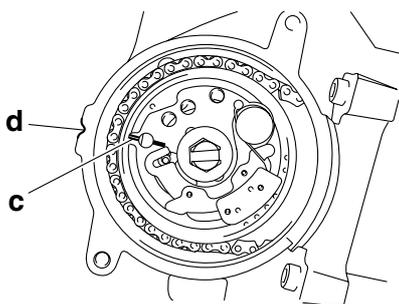
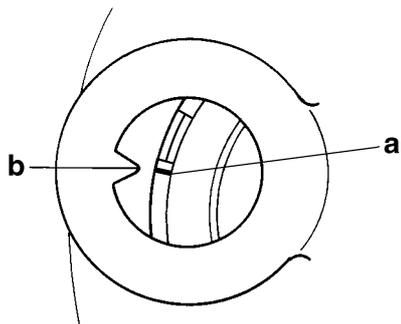
- "I" mark "a" on the generator rotor (with the stationary pointer "b" on the generator cover)



- a. Turn the primary sheave nut on the left side of the crankshaft counterclockwise to turn the crankshaft.



- b. When the piston is at TDC on the compression stroke, align the "I" mark "c" on the camshaft sprocket with the stationary pointer "d" on the cylinder head.

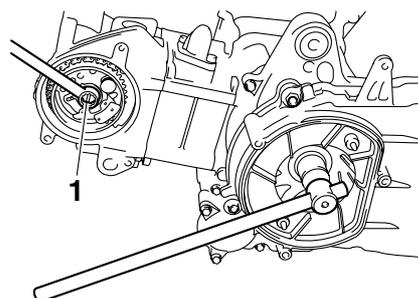


2. Loosen:

- Camshaft sprocket bolt "1"

TIP

While holding the primary sheave nut with a wrench, remove the camshaft sprocket bolt.

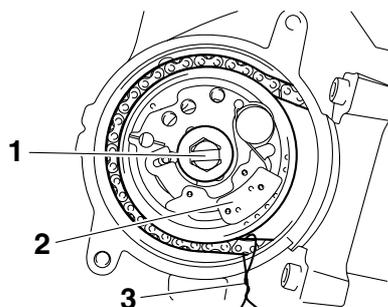


3. Remove:

- Timing chain tensioner (along with the gasket)
- Camshaft sprocket bolt "1"
- Camshaft sprocket "2"

TIP

To prevent the timing chain from falling into the crankcase, fasten it with a wire "3".

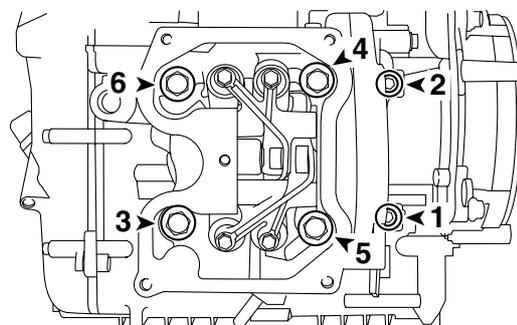


4. Remove:

- Cylinder head

TIP

- Loosen the bolts and nuts in the proper sequence as shown.
- Loosen each bolt and nut 1/2 of a turn at a time. After all of the bolts and nuts are fully loosened, remove them.



EAS37P1003

CHECKING THE CYLINDER HEAD

1. Eliminate:

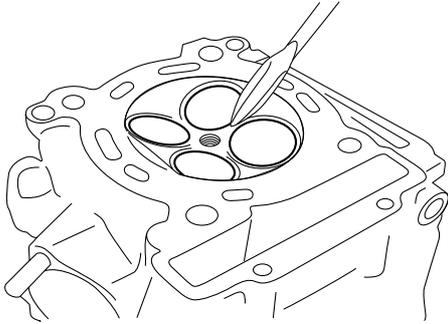
- Combustion chamber carbon deposits (with a rounded scraper)

CYLINDER HEAD (YP125R)

TIP

Do not use a sharp instrument to avoid damaging or scratching:

- Spark plug bore threads
- Valve seats



2. Check:

- Cylinder head
Damage/scratches → Replace.
- Cylinder head water jacket
Mineral deposits/rust → Eliminate.

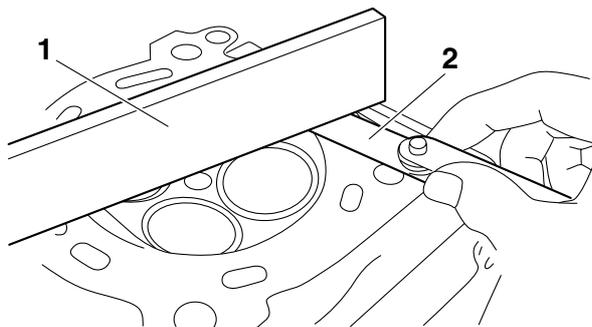
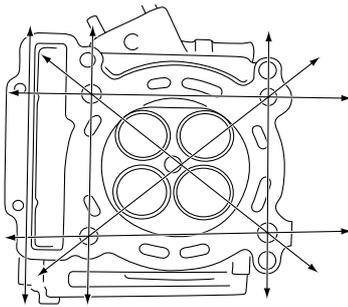
3. Measure:

- Cylinder head warpage
Out of specification → Resurface the cylinder head.



Warpage limit
0.05 mm (0.0020 in)

- a. Place a straightedge "1" and a thickness gauge "2" across the cylinder head.



- b. Measure the warpage.

- c. If the limit is exceeded, resurface the cylinder head as follows.
- d. Place 400–600 grit wet sandpaper on the surface plate and resurface the cylinder head using a figure-eight sanding pattern.

TIP

To ensure an even surface, rotate the cylinder head several times.

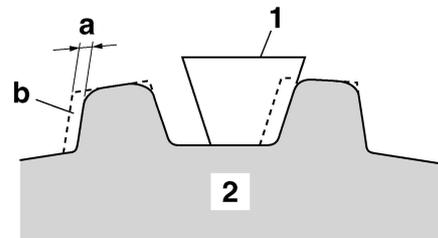


EAS37P1004

CHECKING THE CAMSHAFT SPROCKET

1. Check:

- Camshaft sprocket
More than 1/4 tooth wear "a" → Replace the camshaft sprocket, timing chain and crankshaft as a set.



a. 1/4 tooth

b. Correct

1. Timing chain roller

2. Camshaft sprocket

EAS37P1005

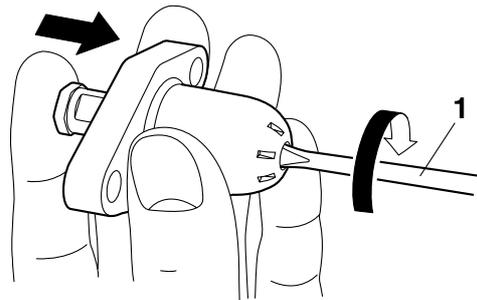
CHECKING THE TIMING CHAIN TENSIONER

1. Check:

- Timing chain tensioner
Cracks/damage → Replace.

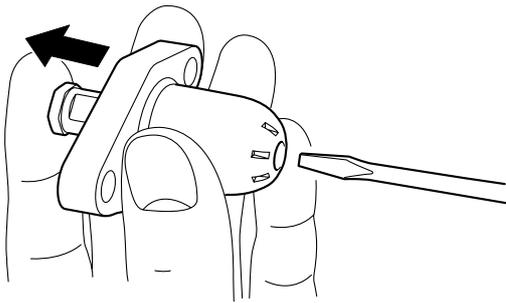


- a. Remove the timing chain tensioner plug.
- b. While lightly pressing the timing chain tensioner rod by hand, turn the tensioner rod fully clockwise with a thin screwdriver "1".



- c. Remove the screwdriver and slowly release the timing chain tensioner rod.

CYLINDER HEAD (YP125R)



- d. Make sure that the timing chain tensioner rod comes out of the timing chain tensioner housing smoothly. If there is rough movement, replace the timing chain tensioner.
- e. Install the timing chain tensioner plug.



EAS37P1006

INSTALLING THE CYLINDER HEAD

1. Tighten:

- Cylinder head nuts "1"



Cylinder head nut
22 Nm (2.2 m-kgf, 16 ft-lbf)

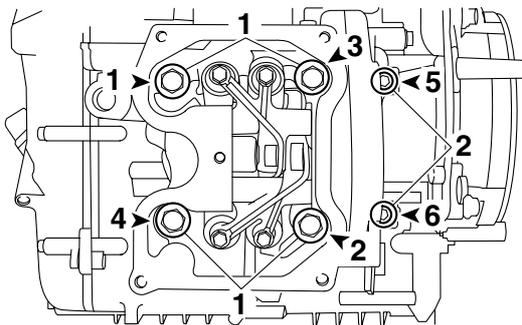
- Cylinder head bolts "2"



Cylinder head bolt
10 Nm (1.0 m-kgf, 7.2 ft-lbf)

TIP

- Lubricate the cylinder head nuts with engine oil.
- Tighten the cylinder head nuts and bolts in the proper tightening sequence as shown and torque them in two stages.



2. Install:

- Camshaft sprocket
- Timing chain
- Camshaft sprocket bolt



- a. Turn the primary sheave nut on the left side of the crankshaft counterclockwise to turn the crankshaft.

- b. Align the "I" mark "a" on the generator rotor with the stationary pointer "b" on the generator cover.
- c. Install the timing chain "1" onto the camshaft sprocket "2", then the camshaft sprocket onto the camshaft, and then finger tighten the camshaft sprocket bolt.

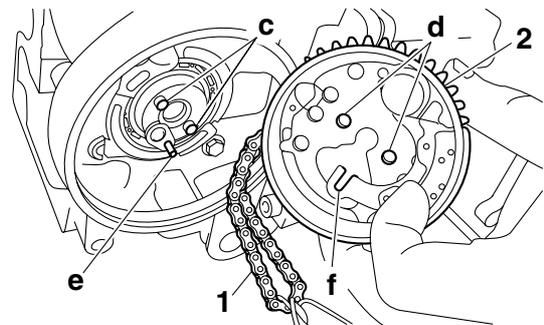
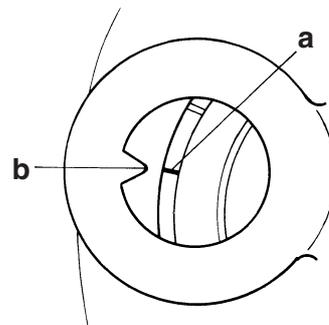
TIP

Fit the projections "c" on the camshaft into the holes "d" in the camshaft sprocket and fit the pin "e" on the decompression cam into the slot "f" in the decompression lever on the camshaft sprocket.

ECA37P1001

NOTICE

Do not turn the crankshaft when installing the camshaft to avoid damage or improper valve timing.

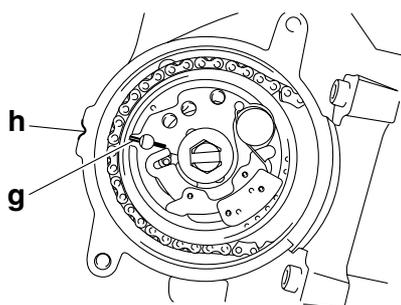


- d. Make sure the "I" mark "g" on the camshaft sprocket with the stationary pointer "h" on the cylinder head.

TIP

When installing the camshaft sprocket, be sure to keep the timing chain as tight as possible on the exhaust side.

CYLINDER HEAD (YP125R)



- e. While holding the primary sheave nut with a wrench, temporarily tighten the camshaft sprocket bolt.
- f. Remove the wire from the timing chain.

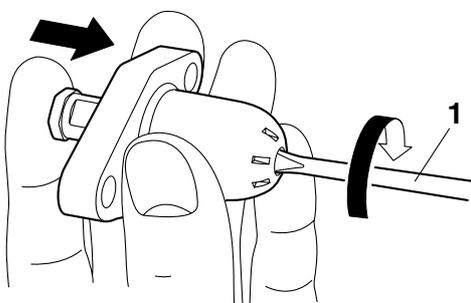
3. Install:

- Timing chain tensioner gasket **New**
- Timing chain tensioner

- a. Remove the timing chain tensioner plug.
- b. While lightly pressing the timing chain tensioner rod by hand, turn the tensioner rod fully clockwise with a thin screwdriver "1".

TIP

Make sure that the tensioner rod has been fully turned clockwise.



- c. Install the gasket and the timing chain tensioner "2" onto the cylinder.

EWA37P1001

WARNING

Always use a new gasket.

TIP

Apply sealant to the threads of the timing chain tensioner bolts.

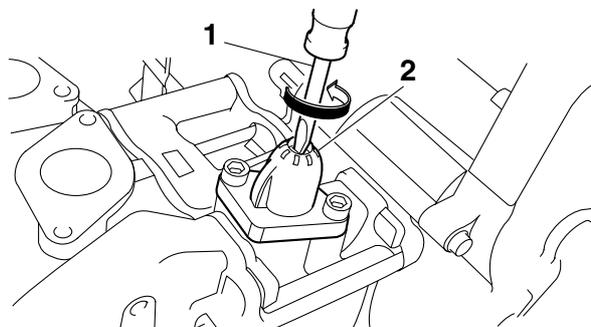


Yamaha bond No. 1215
90890-85505
(Three Bond No.1215®)



Timing chain tensioner bolt
10 Nm (1.0 m·kgf, 7.2 ft·lbf)

- d. Turn the timing chain tensioner rod counterclockwise with a thin screwdriver "1", make sure it releases, and then install the timing chain tensioner plug.

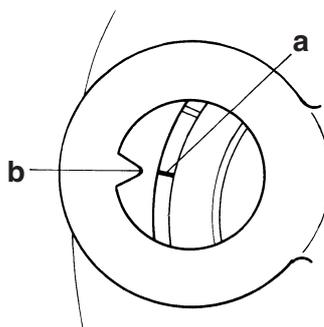


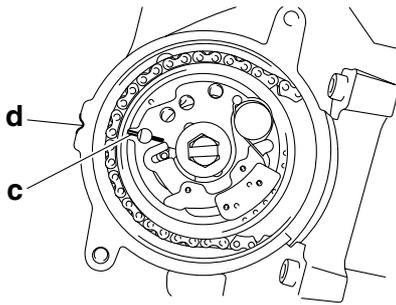
4. Turn:

- Crankshaft
 (turn the primary sheave nut on the left side of the crankshaft several turns counterclockwise)

5. Check:

- "I" mark "a"
 Make sure the "I" mark "a" on the generator rotor is aligned with the stationary pointer "b" on the generator cover.
- "I" mark "c"
 Make sure the "I" mark "c" on the camshaft sprocket is aligned with the stationary pointer "d" on the cylinder head.
 Out of alignment → Correct.
 Refer to the installation steps above.





6. Tighten:

- Camshaft sprocket bolt



Camshaft sprocket bolt
30 Nm (3.0 m·kgf, 22 ft·lbf)

ECA37P1002

NOTICE

Be sure to tighten the camshaft sprocket bolt to the specified torque to avoid the possibility of the bolt coming loose and damaging the engine.

7. Measure:

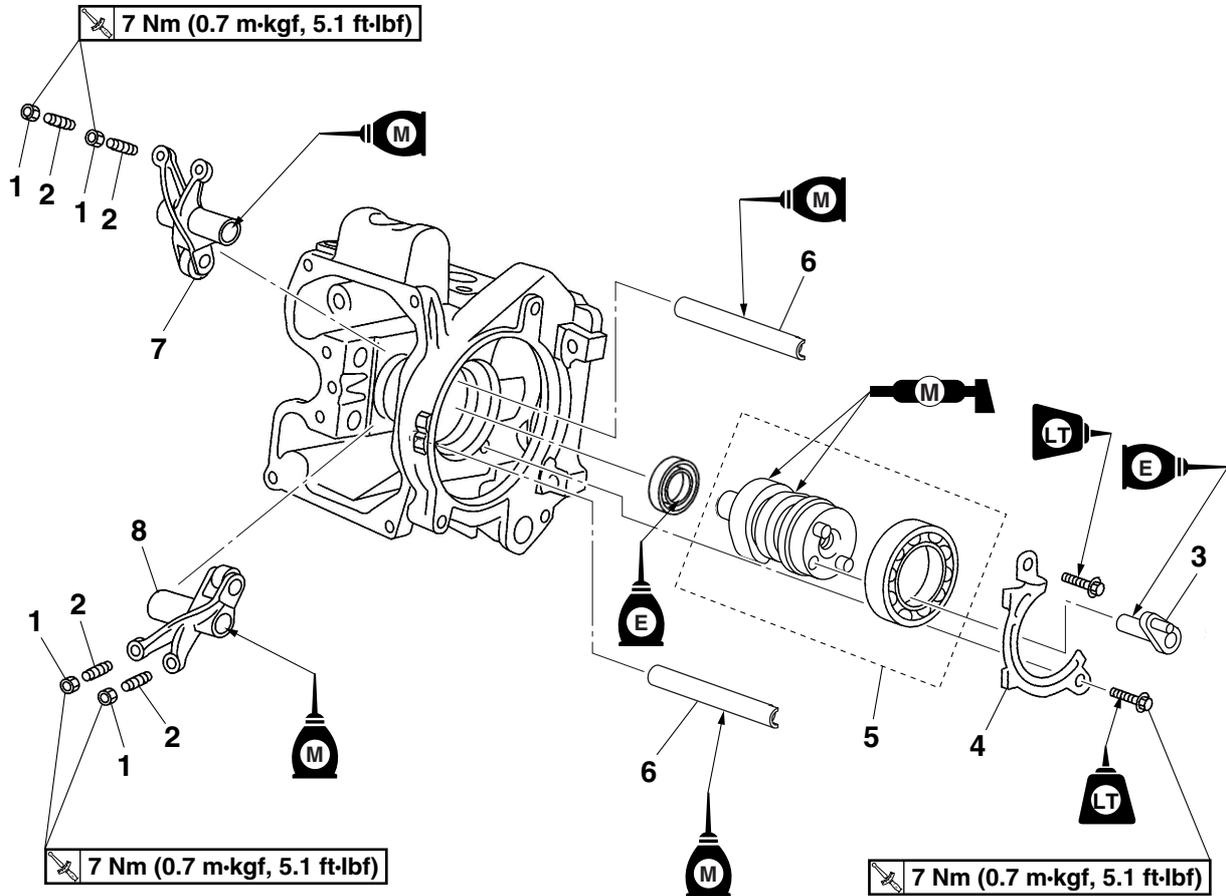
- Valve clearance
Out of specification → Adjust.
Refer to “ADJUSTING THE VALVE CLEARANCE” on page 3-6.

CAMSHAFT (YP125R)

EAS37P1007

CAMSHAFT (YP125R)

Removing the rocker arms and camshaft



Order	Job/Parts to remove	Q'ty	Remarks
	Cylinder head		Refer to "CYLINDER HEAD (YP125R)" on page 5-7.
1	Locknut	4	
2	Adjusting screw	4	
3	Decompression cam	1	
4	Camshaft retainer	1	
5	Camshaft	1	
6	Rocker arm shaft	2	
7	Intake rocker arm	1	
8	Exhaust rocker arm	1	
			For installation, reverse the removal procedure.

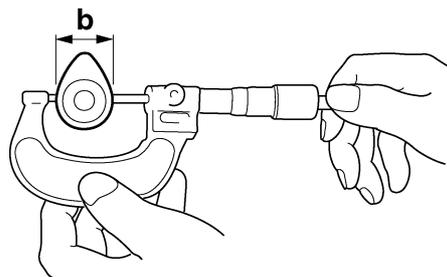
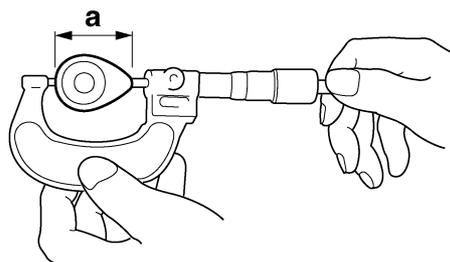
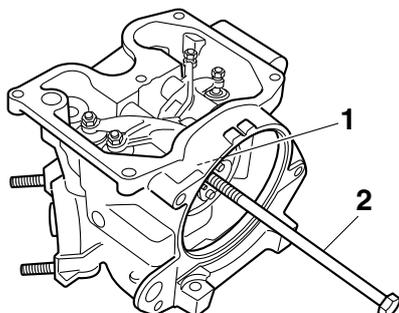
EAS37P1008

REMOVING THE CAMSHAFT

- Remove:
 - Camshaft "1"

TIP

Screw an M8 bolt "2" into the threaded end of the camshaft, and then pull out the camshaft.



EAS37P1009

CHECKING THE CAMSHAFT

- Check:
 - Camshaft lobes
Blue discoloration/pitting/scratches → Replace the camshaft.
- Measure:
 - Camshaft lobe dimensions "a" and "b"
Out of specification → Replace the camshaft.

- Check:
 - Camshaft oil passage
Obstruction → Blow out with compressed air.

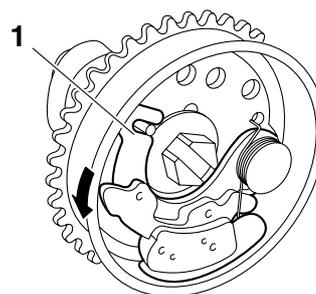
EAS37P1010

CHECKING THE DECOMPRESSION SYSTEM

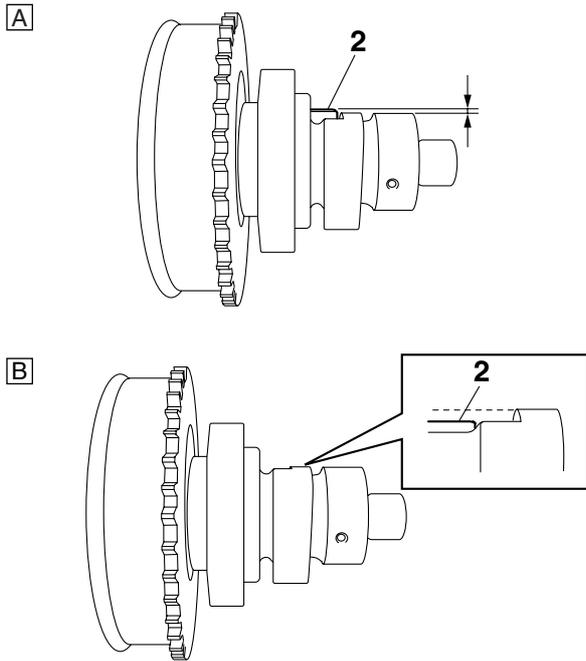
- Check:
 - Decompression system

- Check the decompression system with the camshaft sprocket and the decompression cam installed to the camshaft.
- Check that the decompression lever "1" moves smoothly.
- Without operating the decompression lever, check that the decompression cam "2" projects from the camshaft (exhaust cam) as shown in the illustration "A".
- Move the decompression lever in the direction of the arrow shown and check that the decompression cam does not project from the camshaft (exhaust cam) as shown in the illustration "B".

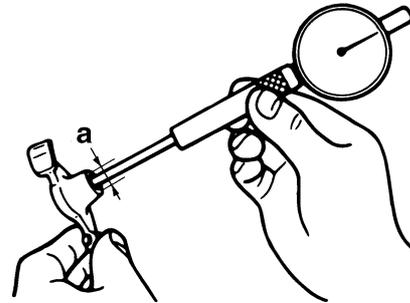
Camshaft lobe dimensions	
Intake A	30.225–30.325 mm (1.1900–1.1939 in)
Limit	30.125 mm (1.1860 in)
Intake B	25.064–25.164 mm (0.9868–0.9907 in)
Limit	24.964 mm (0.9828 in)
Exhaust A	30.261–30.361 mm (1.1914–1.1953 in)
Limit	30.161 mm (1.1874 in)
Exhaust B	25.121–25.221 mm (0.9890–0.9930 in)
Limit	25.021 mm (0.9851 in)



CAMSHAFT (YP125R)



	Rocker arm inside diameter 9.985–10.000 mm (0.3931–0.3937 in)
	Limit 10.015 mm (0.3943 in)



4. Measure:
- Rocker arm shaft outside diameter “a”
Out of specification → Replace.

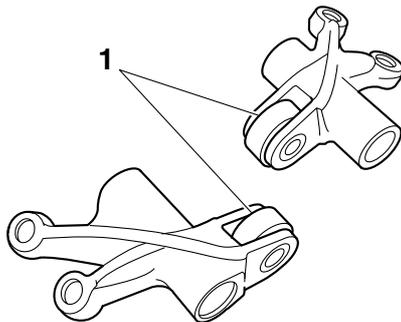
	Rocker arm shaft outside diameter 9.966–9.976 mm (0.3924–0.3928 in)
	Limit 9.940 mm (0.3913 in)

EAS37P1011

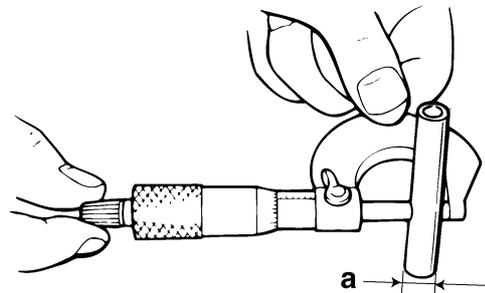
CHECKING THE ROCKER ARMS AND ROCKER ARM SHAFTS

The following procedure applies to all of the rocker arms and rocker arm shafts.

1. Check:
- Rocker arm
 - Rocker arm roller “1”
Damage/wear → Replace.



2. Check:
- Rocker arm shaft
Blue discoloration/excessive wear/pitting/scratches → Replace or check the lubrication system.
3. Measure:
- Rocker arm inside diameter “a”
Out of specification → Replace.



5. Calculate:
- Rocker-arm-to-rocker-arm-shaft clearance

TIP

Calculate the clearance by subtracting the rocker arm shaft outside diameter from the rocker arm inside diameter.

Out of specification → Replace the defective part(s).

	Rocker-arm-to-rocker-arm-shaft clearance 0.009–0.034 mm (0.0004–0.0013 in)
	Limit 0.075 mm (0.0030 in)

CAMSHAFT (YP125R)

EAS37P1012

INSTALLING THE CAMSHAFT AND ROCKER ARMS

1. Lubricate:
 - Camshaft

	Recommended lubricant Camshaft Molybdenum disulfide grease Camshaft bearing Engine oil
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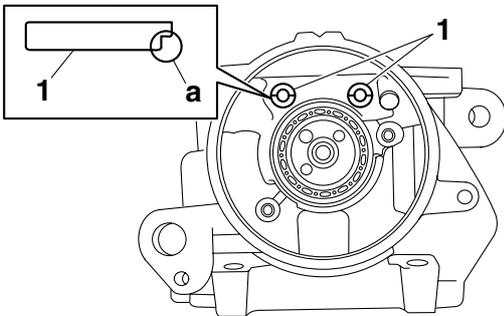
2. Lubricate:
 - Rocker arms
 - Rocker arm shafts

	Recommended lubricant Molybdenum disulfide oil
---	---

3. Install:
 - Rocker arms
 - Rocker arm shafts "1"

TIP

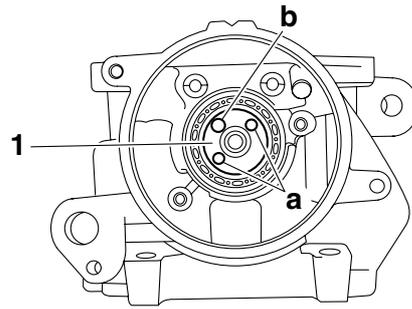
- Make sure that the cutout "a" in each rocker arm shaft is facing downward as shown in the illustration.
- Make sure the rocker arm shafts (intake and exhaust) are completely pushed into the cylinder head.



4. Install:
 - Camshaft "1"

TIP

Make sure that the camshaft projections "a" and hole "b" are positioned as shown in the illustration.



5. Install:
 - Camshaft retainer

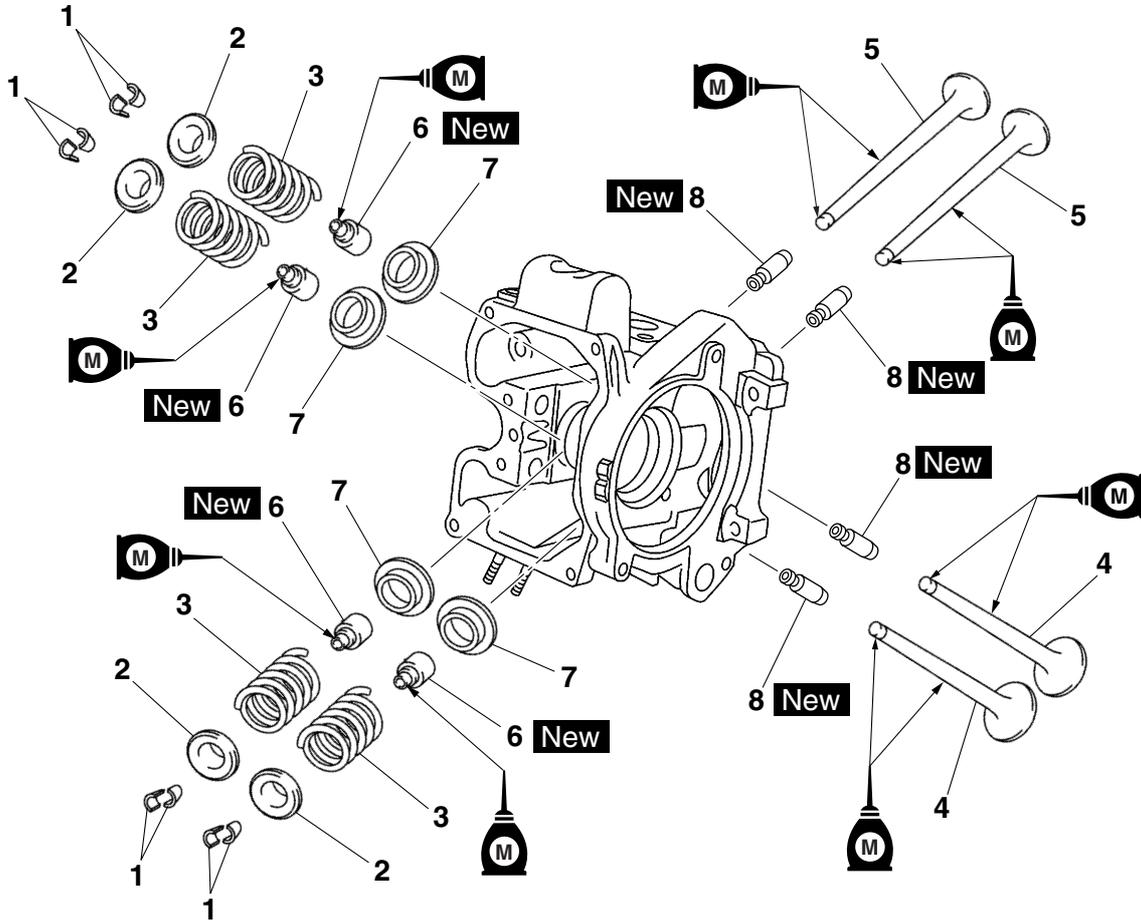
	Camshaft retainer bolt 7 Nm (0.7 m·kgf, 5.1 ft·lbf) LOCTITE®
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VALVES AND VALVE SPRINGS (YP125R)

EAS37P1013

VALVES AND VALVE SPRINGS (YP125R)

Removing the valves and valve springs



Order	Job/Parts to remove	Q'ty	Remarks
	Cylinder head		Refer to "CYLINDER HEAD (YP125R)" on page 5-7.
	Rocker arms/Camshaft		Refer to "CAMSHAFT (YP125R)" on page 5-14.
1	Valve cotter	8	
2	Upper spring seat	4	
3	Valve spring	4	
4	Intake valve	2	
5	Exhaust valve	2	
6	Valve stem seal	4	
7	Lower spring seat	4	
8	Valve guide	4	
			For installation, reverse the removal procedure.

VALVES AND VALVE SPRINGS (YP125R)

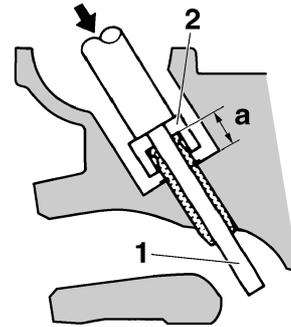
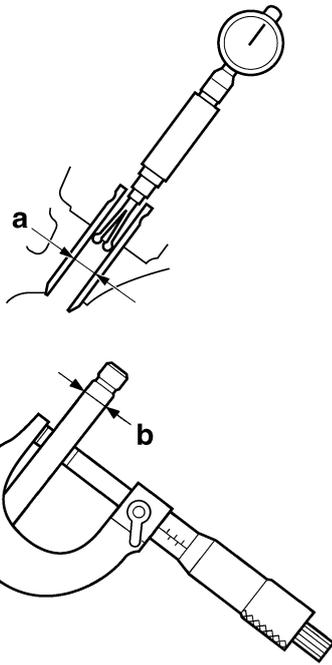


Valve-stem-to-valve-guide clearance (intake)
 0.010–0.037 mm (0.0004–0.0015 in)
Limit
 0.080 mm (0.0031 in)
Valve-stem-to-valve-guide clearance (exhaust)
 0.025–0.052 mm (0.0010–0.0020 in)
Limit
 0.100 mm (0.0039 in)

b. Install the new valve guide with the valve guide installer “2” and valve guide remover “1”.

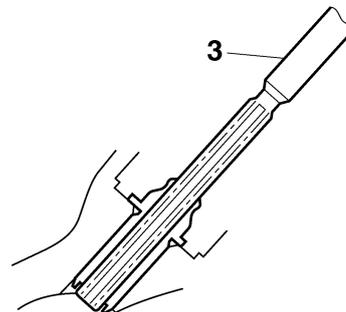


Valve guide position
Intake
 17.0–17.4 mm (0.670–0.685 in)
Exhaust
 14.0–14.4 mm (0.551–0.567 in)



a. Valve guide position

c. After installing the valve guide, bore the valve guide with the valve guide reamer “3” to obtain the proper valve-stem-to-valve-guide clearance.

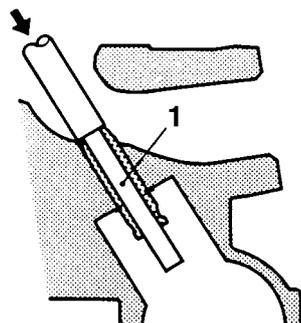


2. Replace:
 • Valve guide

TIP

To ease valve guide removal and installation, and to maintain the correct fit, heat the cylinder head to 100 °C (212 °F) in an oven.

a. Remove the valve guide with the valve guide remover “1”.



TIP

After replacing the valve guide, reface the valve seat.



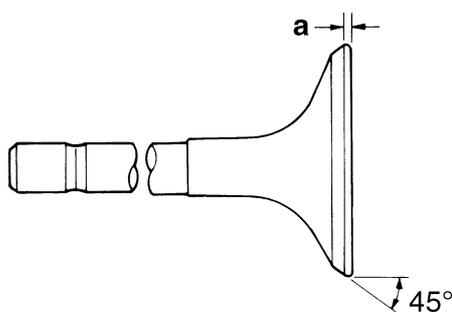
Valve guide remover (ø4.5)
 90890-04116
Valve guide remover (4.5 mm)
 YM-04116
Valve guide installer (ø4.5)
 90890-04117
Valve guide installer (4.5 mm)
 YM-04117
Valve guide reamer (ø4.5)
 90890-04118
Valve guide reamer (4.5 mm)
 YM-04118

VALVES AND VALVE SPRINGS (YP125R)

3. Eliminate:
 - Carbon deposits
(from the valve face and valve seat)
4. Check:
 - Valve face
Pitting/wear → Grind the valve face.
 - Valve stem end
Mushroom shape or diameter larger than the body of the valve stem → Replace the valve.
5. Measure:
 - Valve margin thickness “a”
Out of specification → Replace the valve.



Valve margin thickness D (intake)
0.85–1.15 mm (0.0335–0.0453 in)
Valve margin thickness D (exhaust)
0.85–1.15 mm (0.0335–0.0453 in)



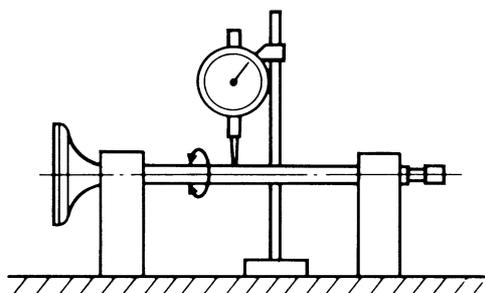
6. Measure:
 - Valve stem runout
Out of specification → Replace the valve.

TIP

- When installing a new valve, always replace the valve guide.
- If the valve is removed or replaced, always replace the valve stem seal.



Valve stem runout
0.010 mm (0.0004 in)



EAS37P1016

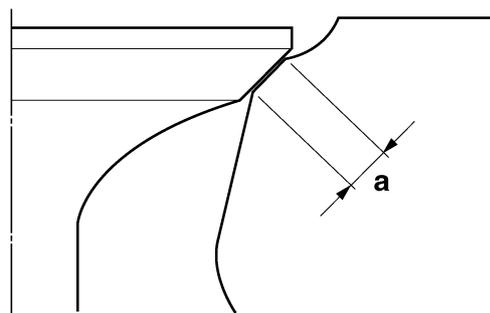
CHECKING THE VALVE SEATS

The following procedure applies to all of the valves and valve seats.

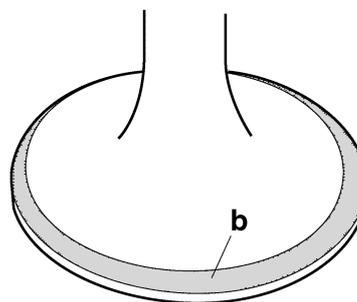
1. Eliminate:
 - Carbon deposits
(from the valve face and valve seat)
2. Check:
 - Valve seat
Pitting/wear → Replace the cylinder head.
3. Measure:
 - Valve seat width “a”
Out of specification → Replace the cylinder head.



Valve seat width C (intake)
0.90–1.10 mm (0.0354–0.0433 in)
Limit
1.6 mm (0.06 in)
Valve seat width C (exhaust)
0.90–1.10 mm (0.0354–0.0433 in)
Limit
1.6 mm (0.06 in)



- a. Apply Mechanic's blueing dye (Dykem) “b” onto the valve face.



- b. Install the valve into the cylinder head.
- c. Press the valve through the valve guide and onto the valve seat to make a clear impression.
- d. Measure the valve seat width.

VALVES AND VALVE SPRINGS (YP125R)

TIP _____
Where the valve seat and valve face contacted one another, the blueing will have been removed.

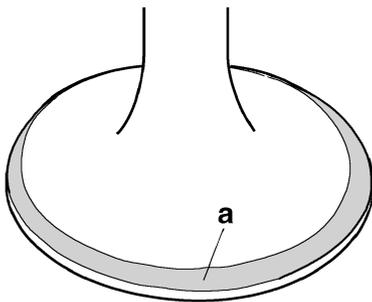
4. Lap:
- Valve face
 - Valve seat

TIP _____
After replacing the cylinder head or replacing the valve and valve guide, the valve seat and valve face should be lapped.

- a. Apply a coarse lapping compound "a" to the valve face.

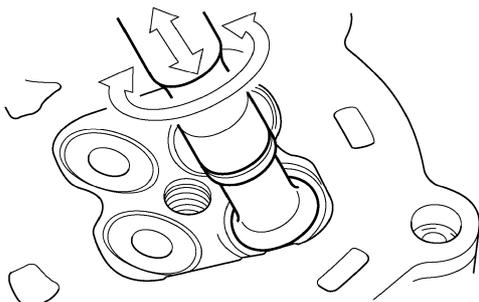
ECA13790

NOTICE _____
Do not let the lapping compound enter the gap between the valve stem and the valve guide.

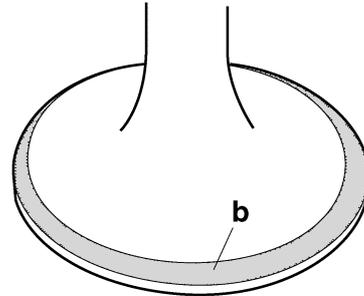


- b. Apply molybdenum disulfide oil onto the valve stem.
c. Install the valve into the cylinder head.
d. Turn the valve until the valve face and valve seat are evenly polished, and then clean off all of the lapping compound.

TIP _____
For the best lapping results, lightly tap the valve seat while rotating the valve back and forth between your hands.



- e. Apply a fine lapping compound to the valve face and repeat the above steps.
f. After every lapping procedure, be sure to clean off all of the lapping compound from the valve face and valve seat.
g. Apply Mechanic's blueing dye (Dykem) "b" onto the valve face.



- h. Install the valve into the cylinder head.
i. Press the valve through the valve guide and onto the valve seat to make a clear impression.
j. Measure the valve seat width again. If the valve seat width is out of specification, reface and lap the valve seat.



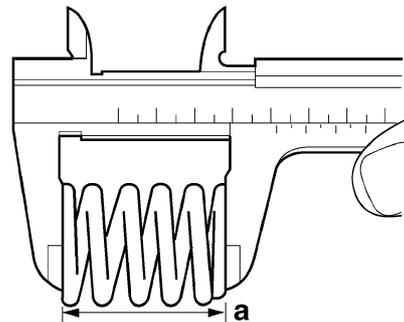
EAS37P1017

CHECKING THE VALVE SPRINGS

The following procedure applies to all of the valve springs.

1. Measure:
- Valve spring free length "a"
- Out of specification → Replace the valve spring.

	Free length (intake)
	41.71 mm (1.64 in)
	Limit
	39.62 mm (1.56 in)
	Free length (exhaust)
	41.71 mm (1.64 in)
	Limit
	39.62 mm (1.56 in)



VALVES AND VALVE SPRINGS (YP125R)

2. Measure:

- Compressed valve spring force "a"
Out of specification → Replace the valve spring.

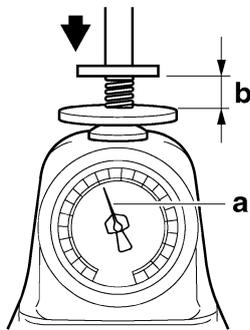


Installed compression spring force (intake)
140–162 N (14.28–16.52 kgf, 31.47–36.42 lbf)

Installed compression spring force (exhaust)
140–162 N (14.28–16.52 kgf, 31.47–36.42 lbf)

Installed length (intake)
35.30 mm (1.39 in)

Installed length (exhaust)
35.30 mm (1.39 in)



b. Installed length

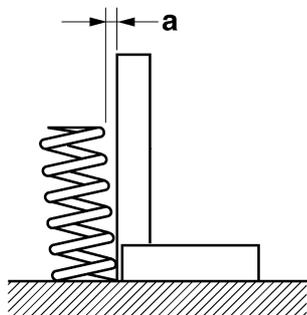
3. Measure:

- Valve spring tilt "a"
Out of specification → Replace the valve spring.



Spring tilt (intake)
2.5°/1.8 mm

Spring tilt (exhaust)
2.5°/1.8 mm



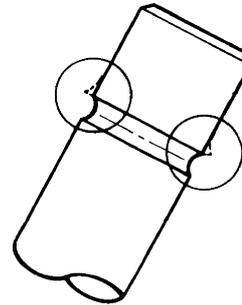
EAS37P1018

INSTALLING THE VALVES

The following procedure applies to all of the valves and related components.

1. Deburr:

- Valve stem end
(with an oil stone)

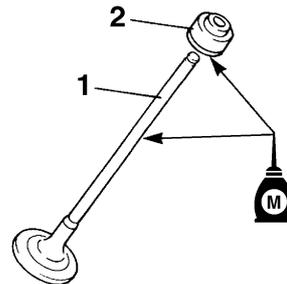


2. Lubricate:

- Valve stem "1"
- Valve stem seal "2"
(with the recommended lubricant)



Recommended lubricant
Molybdenum disulfide oil

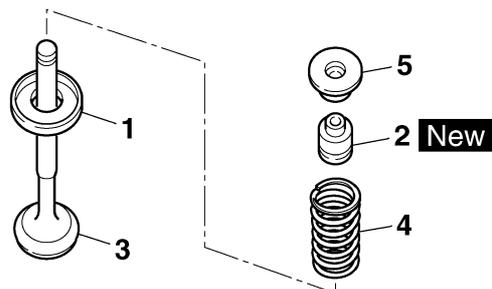


3. Install:

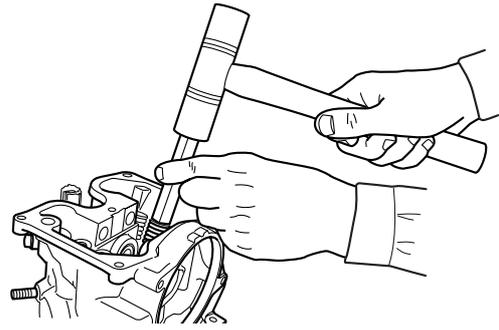
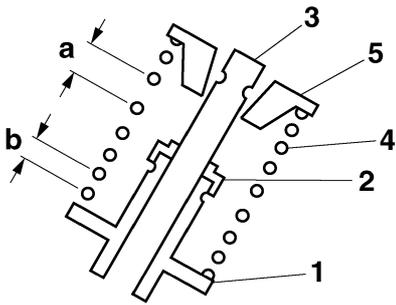
- Lower spring seat "1"
- Valve stem seal "2" **New**
- Valve "3"
- Valve spring "4"
- Upper spring seat "5"
(into the cylinder head)

TIP

- Make sure each valve is installed in its original place.
- Install the valve springs with the larger pitch "a" facing up.



VALVES AND VALVE SPRINGS (YP125R)



b. Smaller pitch

4. Install:

- Valve cotters "1"

TIP

Install the valve cotters by compressing the valve spring with the valve spring compressor and the valve spring compressor attachment "2".



Valve spring compressor

90890-04019

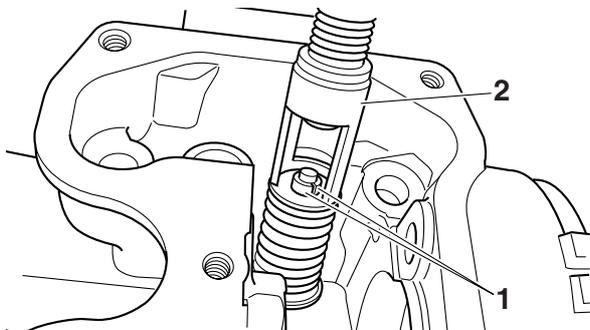
YM-04019

Valve spring compressor attachment

90890-04108

Valve spring compressor adapter 22 mm

YM-04108



5. To secure the valve cotters onto the valve stem, lightly tap the valve tip with a soft-face hammer.

ECA13800

NOTICE

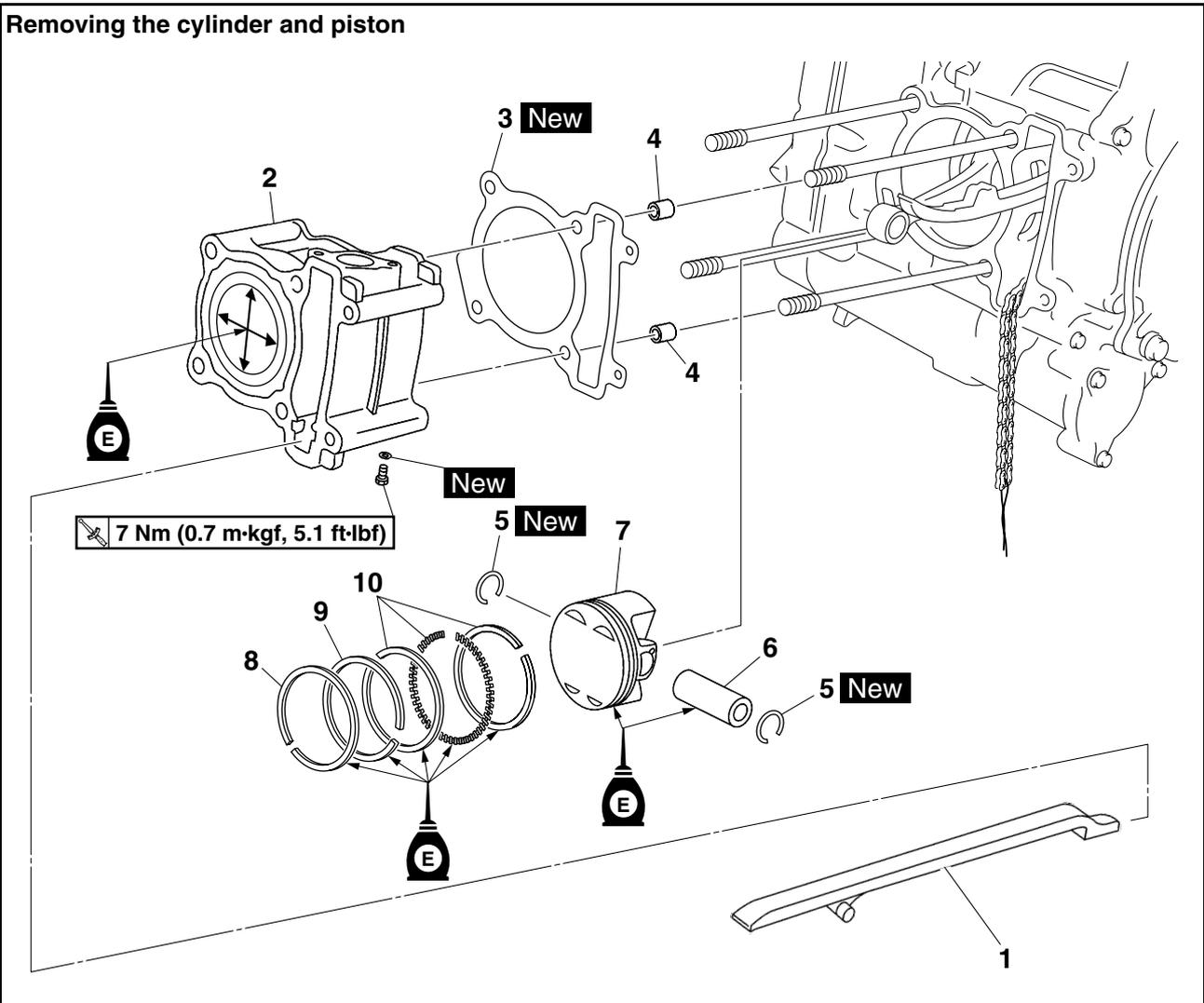
Hitting the valve tip with excessive force could damage the valve.

CYLINDER AND PISTON (YP125R)

EAS37P1019

CYLINDER AND PISTON (YP125R)

Removing the cylinder and piston



Order	Job/Parts to remove	Q'ty	Remarks
	Cylinder head		Refer to "CYLINDER HEAD (YP125R)" on page 5-7.
1	Timing chain guide (exhaust side)	1	
2	Cylinder	1	
3	Cylinder gasket	1	
4	Dowel pin	2	
5	Clip	2	
6	Piston pin	1	
7	Piston	1	
8	Top ring	1	
9	2nd ring	1	
10	Oil ring	1	
			For installation, reverse the removal procedure.

CYLINDER AND PISTON (YP125R)

EAS37P1020

REMOVING THE PISTON

- Remove:
 - Piston pin clips "1"
 - Piston pin "2"
 - Piston "3"

ECA13810

NOTICE

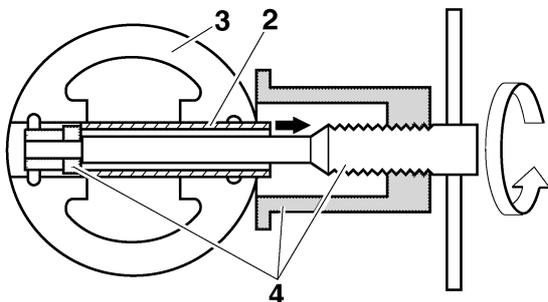
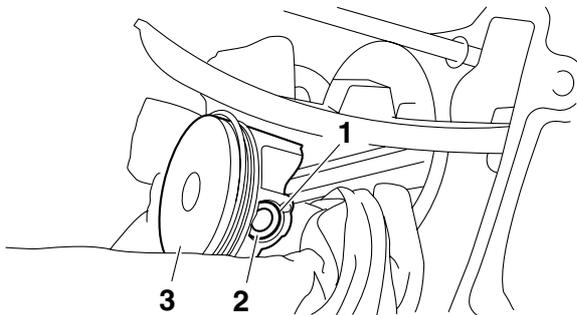
Do not use a hammer to drive the piston pin out.

TIP

- Before removing the piston pin clips, cover the crankcase opening with a clean rag to prevent them from falling into the crankcase.
- Before removing the piston pin, deburr the piston pin clip groove and the piston pin bore area. If both areas are deburred and the piston pin is still difficult to remove, remove it with the piston pin puller set "4".



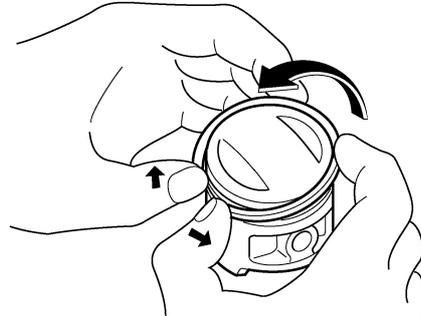
Piston pin puller set
90890-01304
Piston pin puller
YU-01304



- Remove:
 - Top ring
 - 2nd ring
 - Oil ring

TIP

When removing a piston ring, open the end gap with your fingers and lift the other side of the ring over the piston crown.



EAS37P1021

CHECKING THE CYLINDER AND PISTON

- Check:

- Piston wall
- Cylinder wall

Vertical scratches → Rebore or replace the cylinder, and replace the piston and piston rings as a set.

- Measure:

- Piston-to-cylinder clearance

- Measure cylinder bore "C" with the cylinder bore gauge.

TIP

Measure cylinder bore "C" by taking side-to-side and front-to-back measurements of the cylinder. Then, find the average of the measurements.



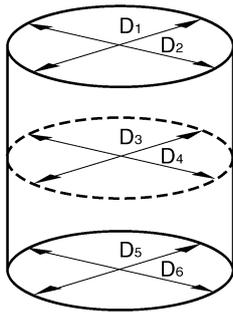
Bore
52.000–52.010 mm (2.0472–2.0476 in)
Taper limit
0.050 mm (0.0020 in)
Out of round limit
0.005 mm (0.0002 in)

"C" = maximum of D_1 – D_2

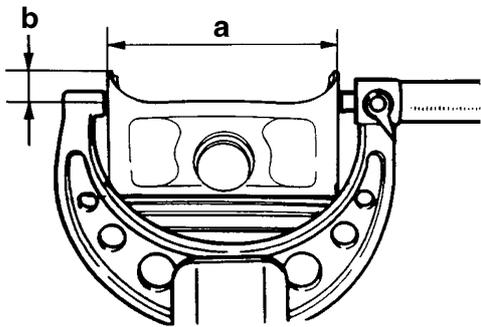
"T" = maximum of D_1 or D_2 - maximum of D_5 or D_6

"R" = maximum of D_1 , D_3 or D_5 - minimum of D_2 , D_4 or D_6

CYLINDER AND PISTON (YP125R)



- b. If out of specification, rebores or replace the cylinder, and replace the piston and piston rings as a set.
- c. Measure piston skirt diameter D "a" with the micrometer.



- b. 5 mm (0.20 in) from the bottom edge of the piston

Piston Diameter D
51.962–51.985 mm (2.0457–2.0466 in)

- d. If out of specification, replace the piston and piston rings as a set.
- e. Calculate the piston-to-cylinder clearance with the following formula.

- Piston-to-cylinder clearance =
Cylinder bore "C" -
Piston skirt diameter "D"

Piston-to-cylinder clearance
0.015–0.048 mm (0.0006–0.0019 in)
Limit
0.15 mm (0.0059 in)

- f. If out of specification, rebores or replace the cylinder, and replace the piston and piston rings as a set.



EAS37P1081

CHECKING THE PISTON RINGS

1. Measure:

- Piston ring side clearance
Out of specification → Replace the piston and piston rings as a set.

TIP

Before measuring the piston ring side clearance, eliminate any carbon deposits from the piston ring grooves and piston rings.



Piston ring

Top ring

Ring side clearance
0.040–0.080 mm (0.0016–0.0031 in)

Limit

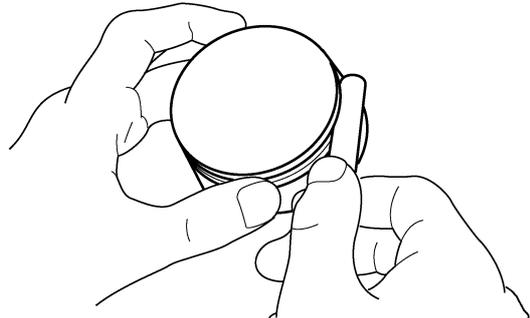
0.120 mm (0.0047 in)

2nd ring

Ring side clearance
0.030–0.070 mm (0.0012–0.0028 in)

Limit

0.120 mm (0.0047 in)

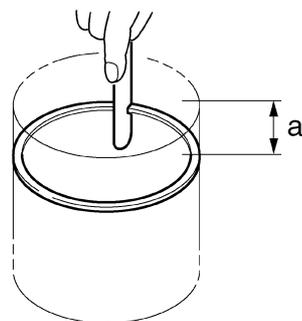


2. Install:

- Piston ring
(into the cylinder)

TIP

Level the piston ring into the cylinder with the piston crown.



- a. 10 mm (0.39 in)

CYLINDER AND PISTON (YP125R)

3. Measure:

- Piston ring end gap
Out of specification → Replace the piston ring.

TIP

The oil ring expander spacer end gap cannot be measured. If the oil ring rail gap is excessive, replace all three piston rings.



Piston ring

Top ring

End gap (installed)
0.10–0.25 mm (0.0039–0.0098 in)

Limit
0.50 mm (0.0197 in)

2nd ring

End gap (installed)
0.10–0.25 mm (0.0039–0.0098 in)

Limit
0.60 mm (0.0236 in)

Oil ring

End gap (installed)
0.20–0.70 mm (0.0079–0.0276 in)

EAS37P1022

CHECKING THE PISTON PIN

1. Check:

- Piston pin
Blue discoloration/grooves → Replace the piston pin, and then check the lubrication system.

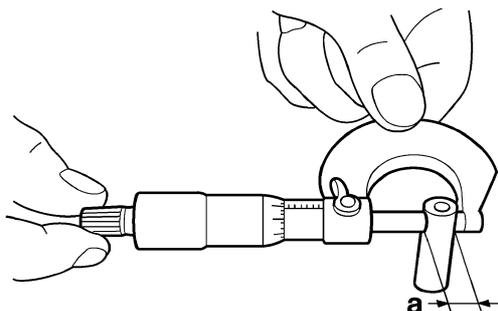
2. Measure:

- Piston pin outside diameter “a”
Out of specification → Replace the piston pin.



Piston pin outside diameter
13.995–14.000 mm (0.5510–0.5512 in)

Limit
13.975 mm (0.5502 in)



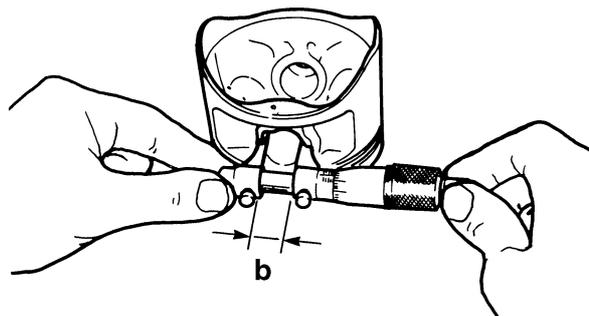
3. Measure:

- Piston pin bore diameter “b”
Out of specification → Replace the piston.



Piston pin bore inside diameter
14.002–14.013 mm (0.5513–0.5517 in)

Limit
14.043 mm (0.5529 in)



4. Calculate:

- Piston-pin-to-piston-pin-bore clearance
Out of specification → Replace the piston pin and piston as a set.

• Piston-pin-to-piston-pin-bore clearance =
Piston pin bore diameter “b” -
Piston pin outside diameter “a”



Piston-pin-to-piston-pin-bore clearance

0.002–0.018 mm (0.0001–0.0007 in)

EAS37P1023

CHECKING THE TIMING CHAIN GUIDE

1. Check:

- Timing chain guide (exhaust side)
Damage/wear → Replace.

EAS37P1024

INSTALLING THE PISTON AND CYLINDER

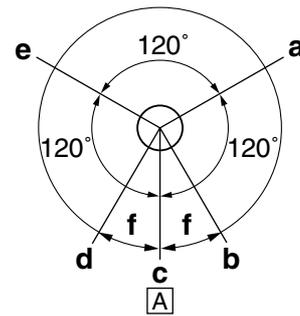
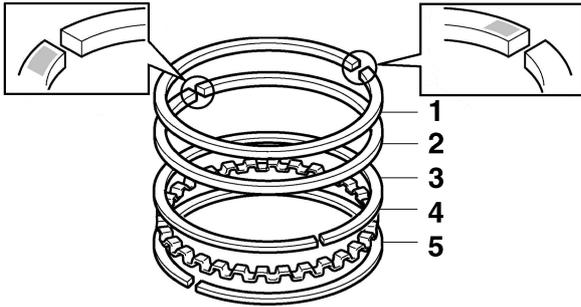
1. Install:

- Top ring “1”
- 2nd ring “2”
- Upper oil ring rail “3”
- Oil ring expander “4”
- Lower oil ring rail “5”

TIP

Be sure to install the piston rings so that the manufacturer marks or numbers face up.

CYLINDER AND PISTON (YP125R)



2. Install:

- Piston "1"
- Piston pin "2"
- Piston pin clips "3" **New**

TIP

- Apply engine oil to the piston pin.
- Make sure the punch mark "a" on the piston points towards the exhaust side of the cylinder.
- Before installing the piston pin clips, cover the crankcase opening with a clean rag to prevent the clips from falling into the crankcase.

a. Top ring

b. Upper oil ring rail

c. Oil ring expander

d. Lower oil ring rail

e. 2nd ring

f. 20 mm (0.79 in)

A. Intake side

5. Install:

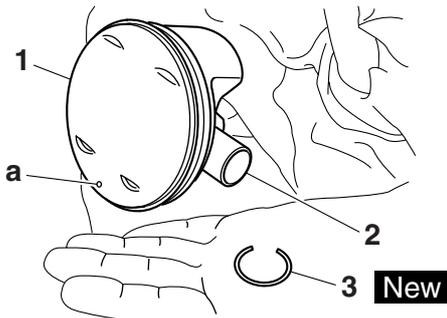
- Dowel pins

- Cylinder gasket **New**

- Cylinder "1"

TIP

- While compressing the piston rings with one hand, install the cylinder with the other hand.
- Pass the timing chain and timing chain guide (intake side) through the timing chain cavity.



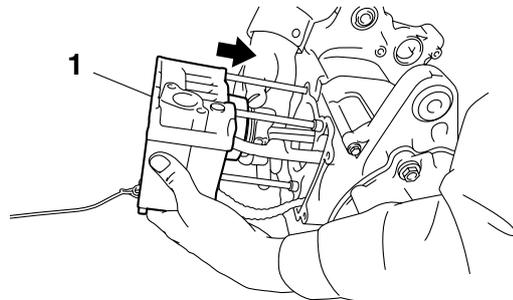
3. Lubricate:

- Piston
- Piston rings
- Cylinder
(with the recommended lubricant)



4. Offset:

- Piston ring end gaps

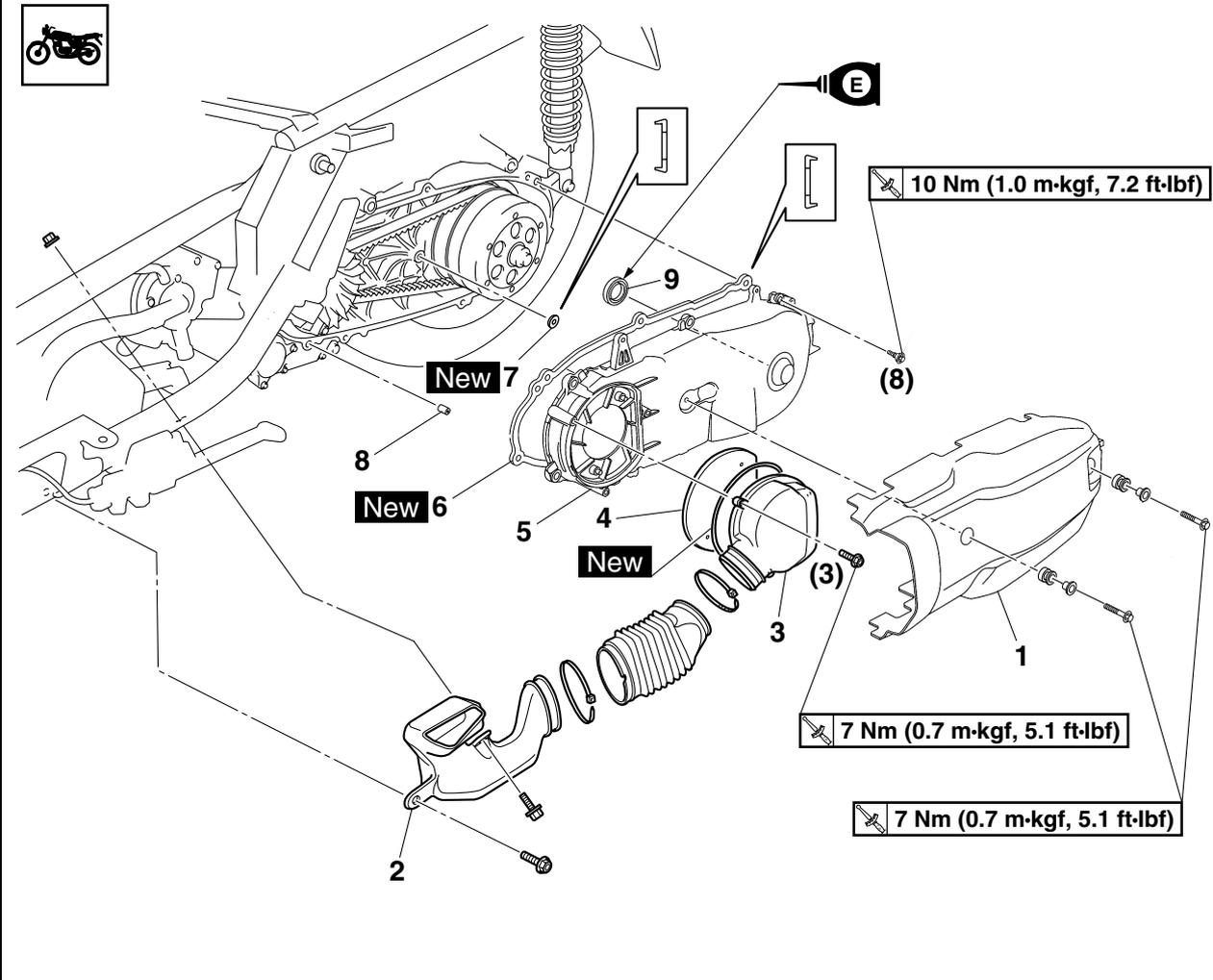


V-BELT AUTOMATIC TRANSMISSION (YP125R)

EAS37P1137

V-BELT AUTOMATIC TRANSMISSION (YP125R)

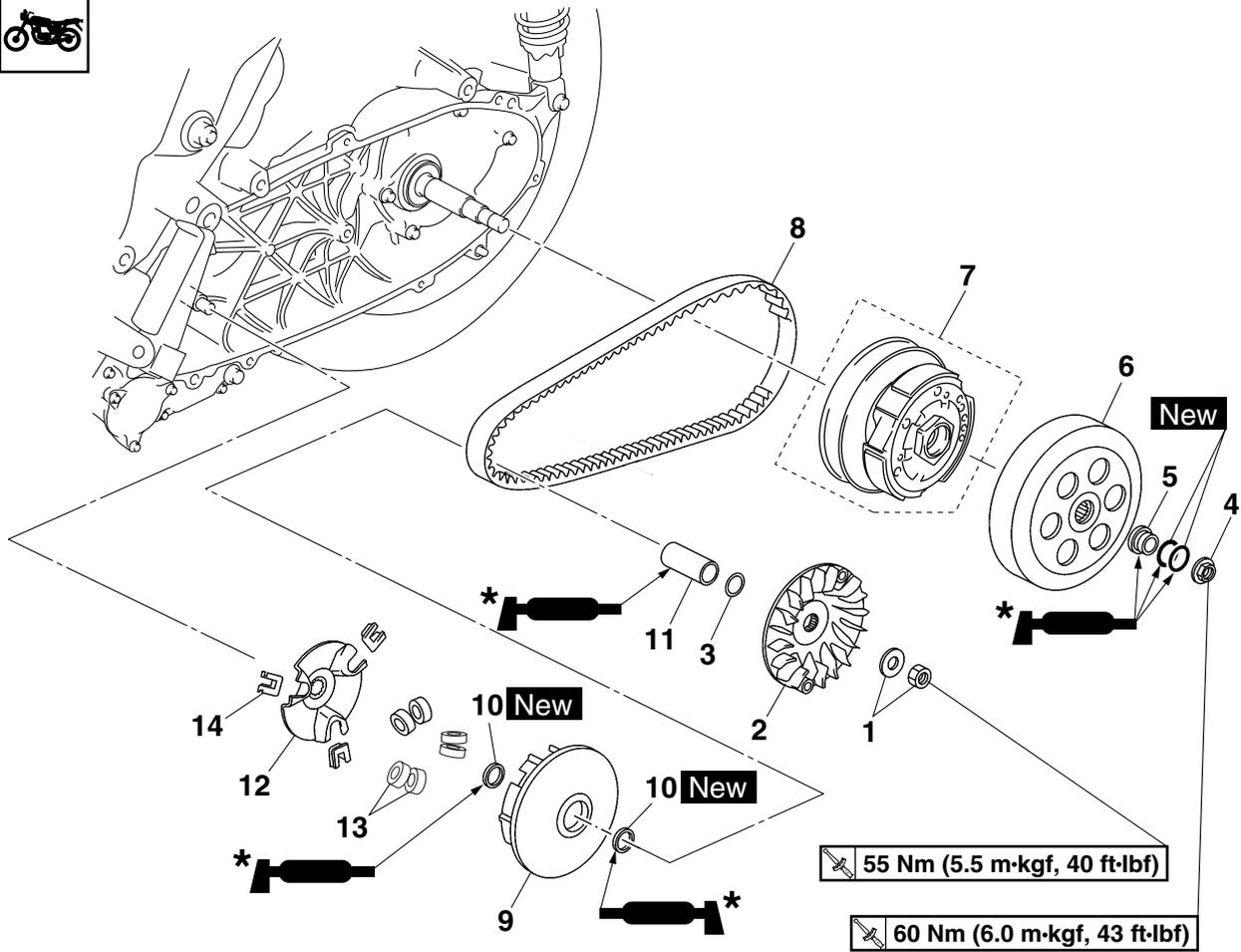
Removing the V-belt case cover



Order	Job/Parts to remove	Q'ty	Remarks
	Bottom cover/Air filter case		Refer to "GENERAL CHASSIS" on page 4-1.
1	V-belt case cover	1	
2	V-belt case air duct joint	1	
3	V-belt case air duct	1	
4	V-belt case air filter element	1	
5	V-belt case	1	
6	V-belt case gasket 1	1	
7	V-belt case gasket 2	1	
8	Dowel pin	1	
9	Bearing	1	
			For installation, reverse the removal procedure.

V-BELT AUTOMATIC TRANSMISSION (YP125R)

Removing the V-belt, primary sheave and secondary sheave

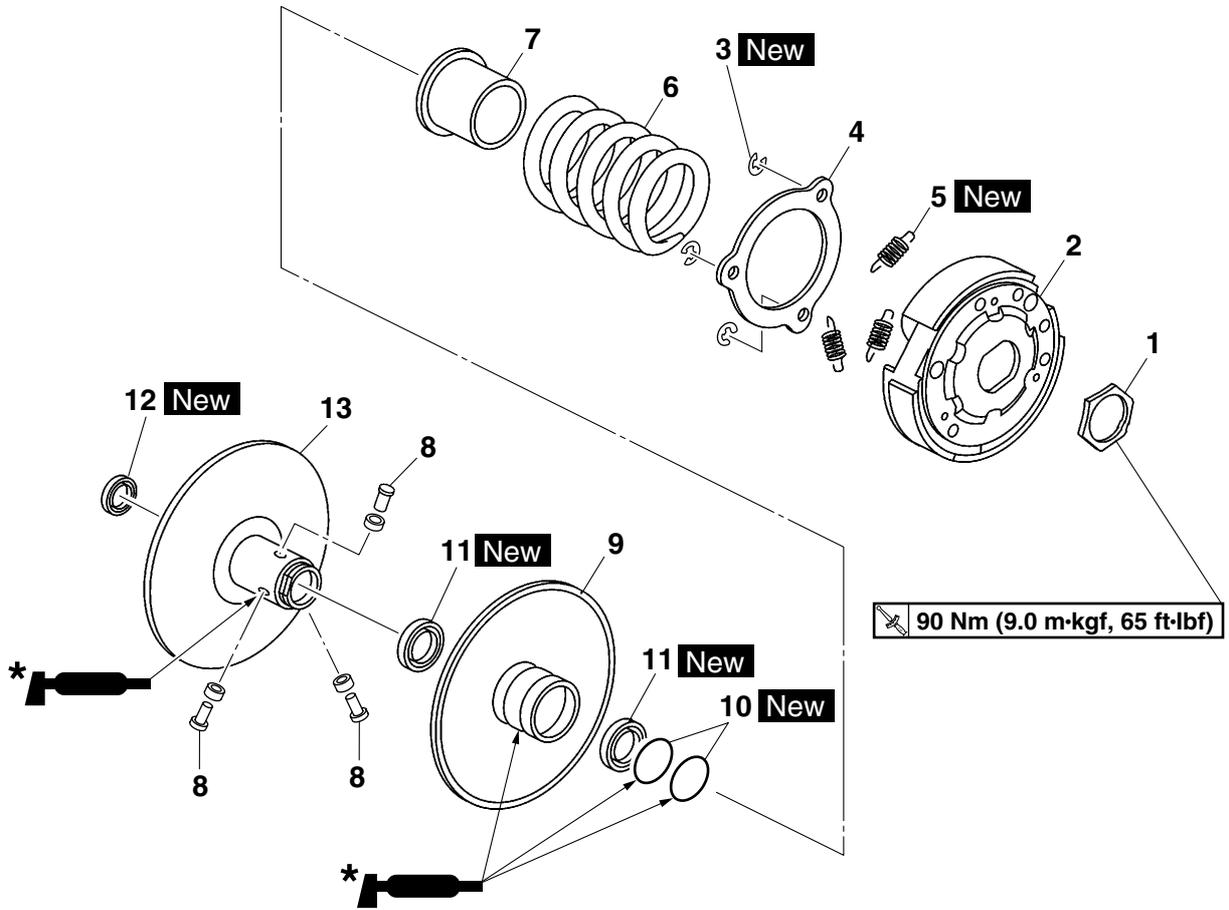


Order	Job/Parts to remove	Q'ty	Remarks
1	Primary sheave nut/Washer	1/1	
2	Primary fixed sheave	1	
3	Washer	1	
4	Secondary sheave nut	1	
5	Spacer	1	
6	Clutch housing	1	
7	Secondary sheave assembly	1	
8	V-belt	1	
9	Primary sliding sheave	1	
10	Oil seal	2	
11	Spacer	1	
12	Cam	1	
13	Primary sheave weight	6	
14	Slider	3	
			For installation, reverse the removal procedure.

* Apply BEL-RAY assembly lube®.

V-BELT AUTOMATIC TRANSMISSION (YP125R)

Disassembling the secondary sheave



Order	Job/Parts to remove	Q'ty	Remarks
1	Clutch carrier nut	1	
2	Clutch carrier	1	
3	Clip	3	
4	Clutch carrier plate	1	
5	Clutch shoe spring	3	
6	Compression spring	1	
7	Spring seat	1	
8	Guide pin	3	
9	Secondary sliding sheave	1	
10	O-ring	2	
11	Oil seal	2	
12	Oil seal	1	
13	Secondary fixed sheave	1	
			For assembly, reverse the disassembly procedure.

* Apply BEL-RAY assembly lube®.

V-BELT AUTOMATIC TRANSMISSION (YP125R)

EAS37P1025

REMOVING THE PRIMARY SHEAVE

1. Remove:
 - V-belt case

TIP

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

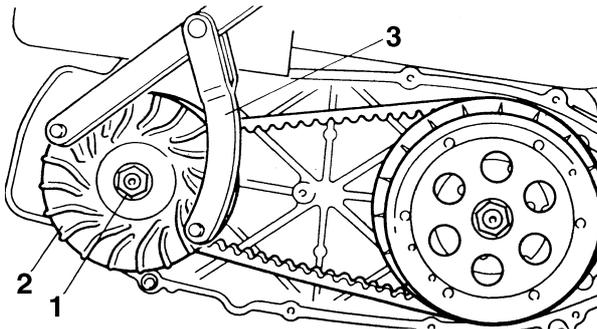
2. Remove:
 - Primary sheave nut "1"
 - Washer
 - Primary fixed sheave "2"

TIP

While holding the primary fixed sheave with the rotor holding tool "3", loosen the primary sheave nut.



Rotor holding tool
90890-01235
Universal magneto & rotor holder
YU-01235



EAS37P1026

REMOVING THE SECONDARY SHEAVE

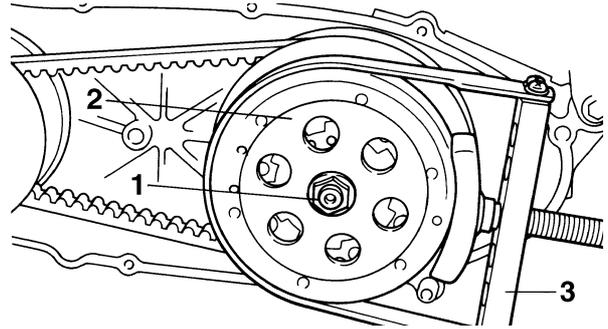
1. Remove:
 - Secondary sheave nut "1"
 - Spacer
 - Clutch housing "2"

TIP

While holding the clutch housing with the sheave holder "3", loosen the secondary sheave nut.



Sheave holder
90890-01701
Primary clutch holder
YS-01880-A



2. Loosen:
 - Clutch carrier nut "1"

ECA13860

NOTICE

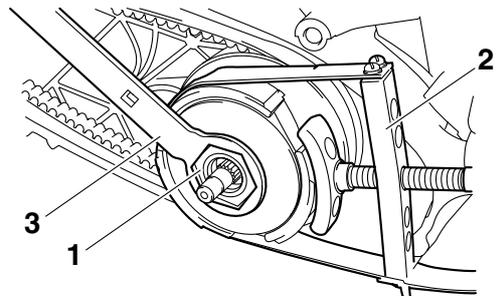
Do not remove the clutch carrier nut at this stage.

TIP

While holding the clutch carrier with the sheave holder "2", loosen the clutch carrier nut one full turn with the locknut wrench "3".



Sheave holder
90890-01701
Primary clutch holder
YS-01880-A
Locknut wrench
90890-01348
YM-01348

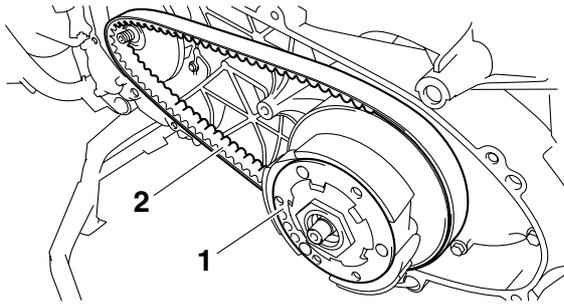


3. Remove:
 - Secondary sheave assembly "1"
 - V-belt "2"

TIP

Remove the V-belt and secondary sheave assembly from the primary sheave side.

V-BELT AUTOMATIC TRANSMISSION (YP125R)



EAS37P1027

DISASSEMBLING THE SECONDARY SHEAVE

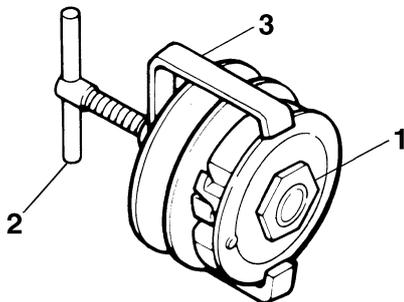
1. Remove:
 - Clutch carrier nut "1"

TIP

While compressing the compression spring with the clutch spring holder "2" and clutch spring holder arm "3", remove the clutch carrier nut.



Clutch spring holder
90890-01337
Clutch spring holder arm
90890-01464



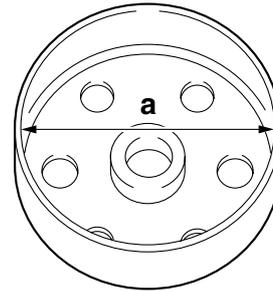
EAS37P1028

CHECKING THE CLUTCH HOUSING

1. Check:
 - Clutch housing
Damage/wear → Replace.
2. Measure:
 - Clutch housing inside diameter "a"
Out of specification → Replace the clutch housing.



Clutch housing inside diameter
135.0 mm (5.31 in)
Limit
135.5 mm (5.33 in)



EAS37P1029

CHECKING THE CLUTCH SHOES

The following procedure applies to all of the clutch shoes.

1. Check:
 - Clutch shoe
Damage/wear → Replace the clutch shoes and springs as a set.
Glazed areas → Sand with coarse sandpaper.

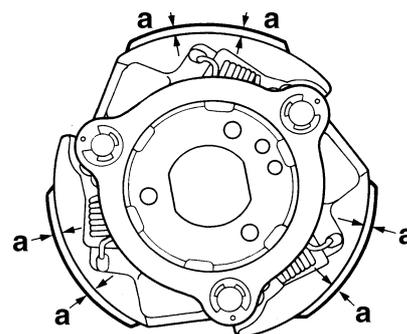
TIP

After sanding the glazed areas, clean the clutch with a cloth.

2. Measure:
 - Clutch shoe thickness "a"
Out of specification → Replace the clutch shoes and springs as a set.



Clutch shoe thickness
2.0 mm (0.08 in)
Wear limit
1.0 mm (0.04 in)



EAS37P1030

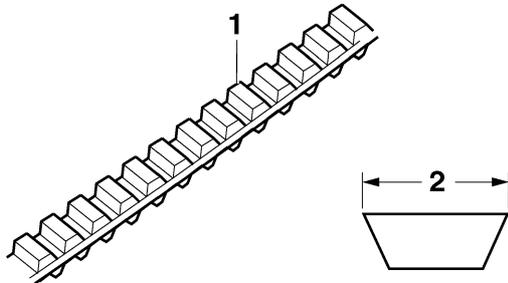
CHECKING THE V-BELT

1. Check:
 - V-belt "1"
Cracks/damage/wear → Replace.
Grease/oil → Clean the primary and secondary sheave.
2. Measure:
 - V-belt width "2"
Out of specification → Replace.

V-BELT AUTOMATIC TRANSMISSION (YP125R)



V-belt width
22.0 mm (0.87 in)
Limit
19.8 mm (0.78 in)



EAS37P1031

CHECKING THE PRIMARY SHEAVE

- Check:
 - Primary sliding sheave
 - Primary fixed sheave
 - Spacer

Cracks/damage/wear → Replace the primary sliding sheave and primary fixed sheave as a set.

EAS37P1032

CHECKING THE PRIMARY SHEAVE WEIGHTS

The following procedure applies to all of the primary sheave weights.

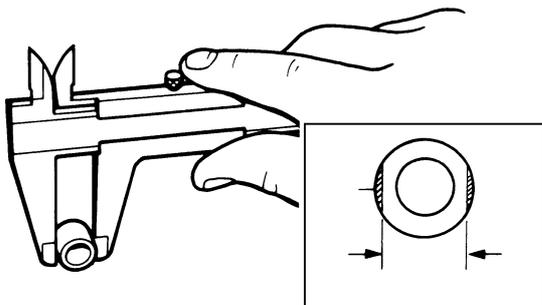
- Check:
 - Primary sheave weight

Cracks/damage/wear → Replace.
- Measure:
 - Primary sheave weight outside diameter

Out of specification → Replace.



Weight outside diameter
20.0 mm (0.79 in)
Limit
19.5 mm (0.77 in)



EAS37P1033

CHECKING THE PRIMARY SHEAVE SLIDERS

- Check:
 - Primary sheave slider

Cracks/damage/wear → Replace.

EAS37P1034

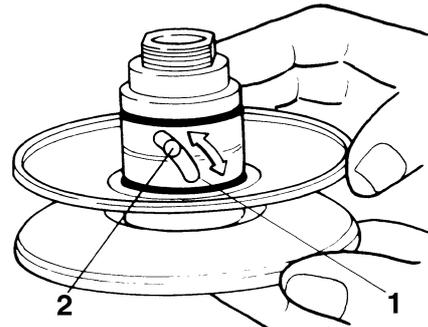
CHECKING THE SECONDARY SHEAVE

- Check:
 - Secondary fixed sheave
 - Secondary sliding sheave

Cracks/damage/wear → Replace the secondary fixed and sliding sheaves as a set.
- Check:
 - Torque cam groove "1"

Damage/wear → Replace the secondary fixed and sliding sheaves as a set.
- Check:
 - Guide pin "2"

Damage/wear → Replace the secondary fixed and sliding sheaves as a set.

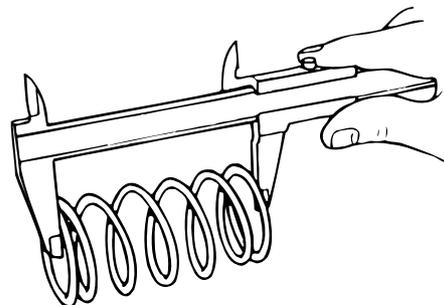


- Check:
 - Spring free length

Out of specification → Replace the spring.



Compression spring free length
112.0 mm (4.41 in)
Limit
106.4 mm (4.19 in)



EAS37P1035

ASSEMBLING THE PRIMARY SHEAVE

- Clean:
 - Primary fixed sheave

V-BELT AUTOMATIC TRANSMISSION (YP125R)

- Primary sliding sheave
- Spacer
- Primary sheave weights
- Cam

2. Lubricate:

- Oil seal
- Primary sliding sheave
- Spacer

	Recommended lubricant BEL-RAY assembly lube®
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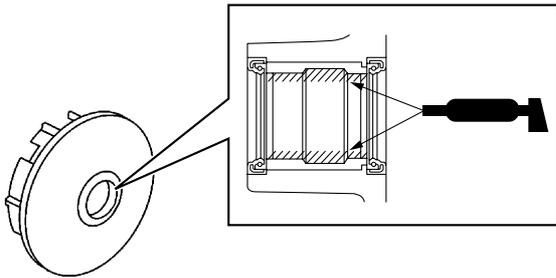
TIP

Fill the notches of the primary sliding sheave with grease. Apply grease to the inner surface of the primary sliding sheave as shown.

ECA37P1003

NOTICE

Do not get any grease on the surfaces of the sheaves. If any grease gets on the sheaves, be sure to wipe it off with alcohol, etc.



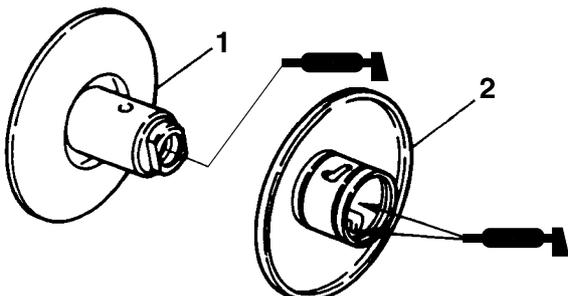
EAS37P1036

ASSEMBLING THE SECONDARY SHEAVE

1. Lubricate:

- Secondary fixed sheave inner surface "1"
- Secondary sliding sheave inner surface "2"
- Oil seals
- Bearing
(with the recommended lubricant)

	Recommended lubricant BEL-RAY assembly lube®
---	---



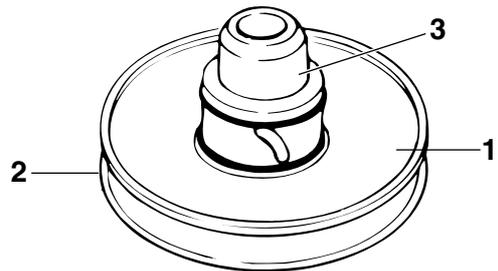
2. Install:

- Oil seal **New**
- Secondary sliding sheave "1"

TIP

Install the secondary sliding sheave onto the secondary fixed sheave "2" with the oil seal guide "3".

	Oil seal guide (ø41) 90890-01396
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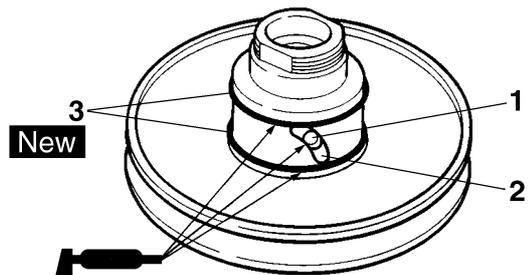
3. Install:

- Guide pins "1"

4. Lubricate:

- Guide pin grooves "2"
- O-rings "3" **New**
(with the recommended lubricant)

	Recommended lubricant BEL-RAY assembly lube®
---	---



5. Install:

- Spring seat
- Compression spring
- Clutch carrier "1"
- Clutch carrier nut "2"

TIP

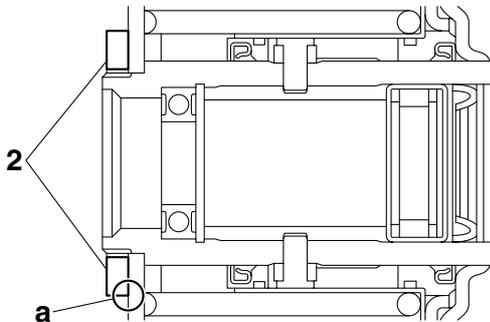
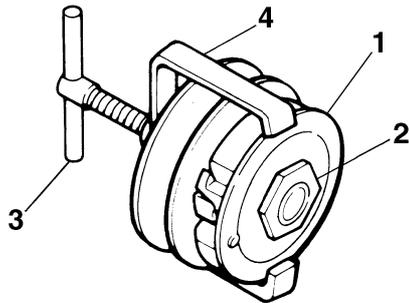
• While compressing the compression spring with the clutch spring holder "3" and clutch spring holder arm "4", install the clutch carrier nut.

V-BELT AUTOMATIC TRANSMISSION (YP125R)

- Install the clutch carrier nut “2” with its tapered side “a” facing the clutch carrier.



Clutch spring holder
90890-01337
Clutch spring holder arm
90890-01464



EAS37P1037

INSTALLING THE V-BELT

1. Install:
 - V-belt “1”
 - Secondary sheave assembly “2”

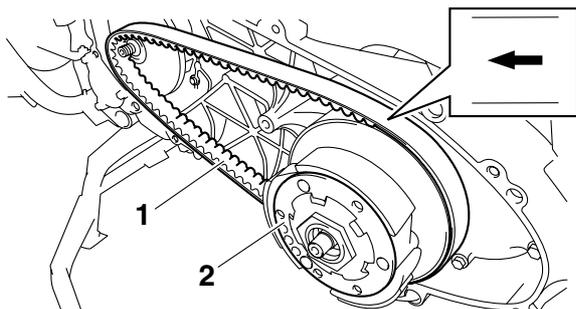
ECA37P1004

NOTICE

Do not allow grease to come in contact with the V-belt or secondary sheave assembly.

TIP

- Install the V-belt with the printed arrow mark on the V-belt facing in the direction shown in the illustration.
- Install the V-belt onto the primary sheave side.



2. Tighten:
 - Clutch carrier nut “1”



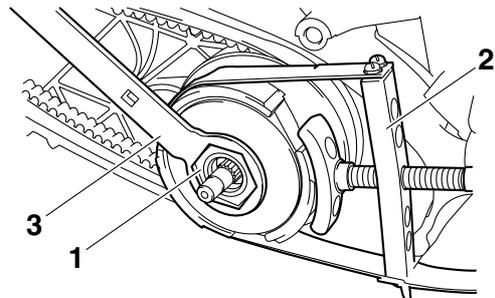
Clutch carrier nut
90 Nm (9.0 m·kgf, 65 ft·lbf)

TIP

While holding the clutch carrier with the sheave holder “2”, tighten the clutch carrier nut with the locknut wrench “3”.



Sheave holder
90890-01701
Primary clutch holder
YS-01880-A
Locknut wrench
90890-01348
YM-01348



3. Install:
 - Clutch housing “1”
 - Spacer
 - Secondary sheave nut “2”



Secondary sheave nut
60 Nm (6.0 m·kgf, 43 ft·lbf)

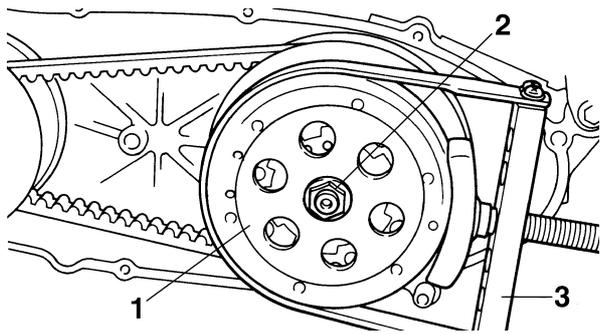
TIP

While holding the clutch housing with the sheave holder “3”, tighten the secondary sheave nut.



Sheave holder
90890-01701
Primary clutch holder
YS-01880-A

V-BELT AUTOMATIC TRANSMISSION (YP125R)



4. Install:
- V-belt "1"
 - Primary fixed sheave "2"
 - Washer
 - Primary sheave nut "3"

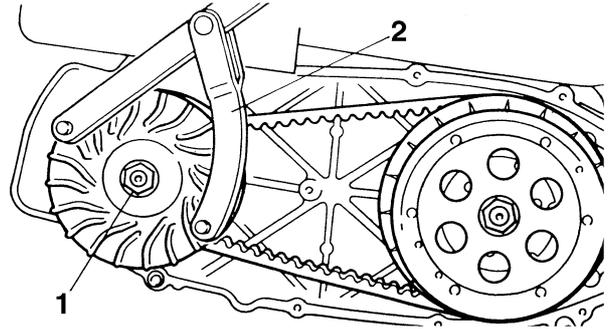
TIP

Install the V-belt in the primary sheave (when the pulley is at its widest position) and in the secondary sheave (when the pulley is at its narrowest position), and make sure the V-belt is tight.

ECA37P1014

NOTICE

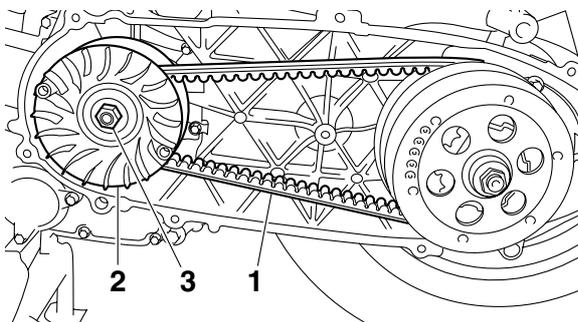
Do not allow grease to contact the primary sheave assembly.



6. Install:
- V-belt case

TIP

- Make sure that the V-belt case gasket lip fits properly around the V-belt case.
- Tighten the V-belt case bolts in stages and in a crisscross pattern.



5. Tighten:
- Primary sheave nut "1"



Primary sheave nut
55 Nm (5.5 m-kgf, 40 ft-lbf)

TIP

While holding the primary fixed sheave with the rotor holding tool "2", tighten the primary sheave nut.



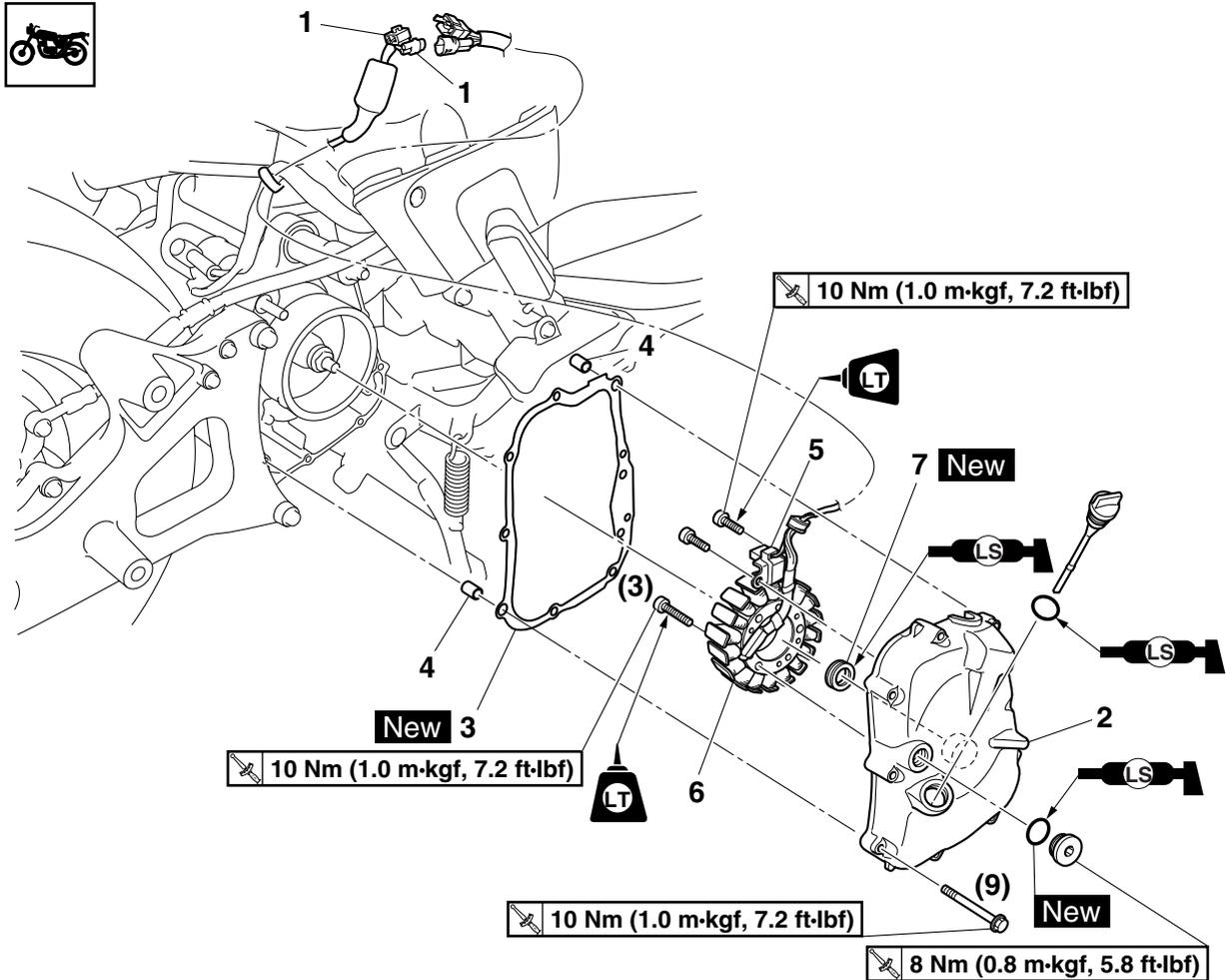
Rotor holding tool
90890-01235
Universal magneto & rotor holder
YU-01235

STARTER CLUTCH AND GENERATOR (YP125R)

EAS37P1038

STARTER CLUTCH AND GENERATOR (YP125R)

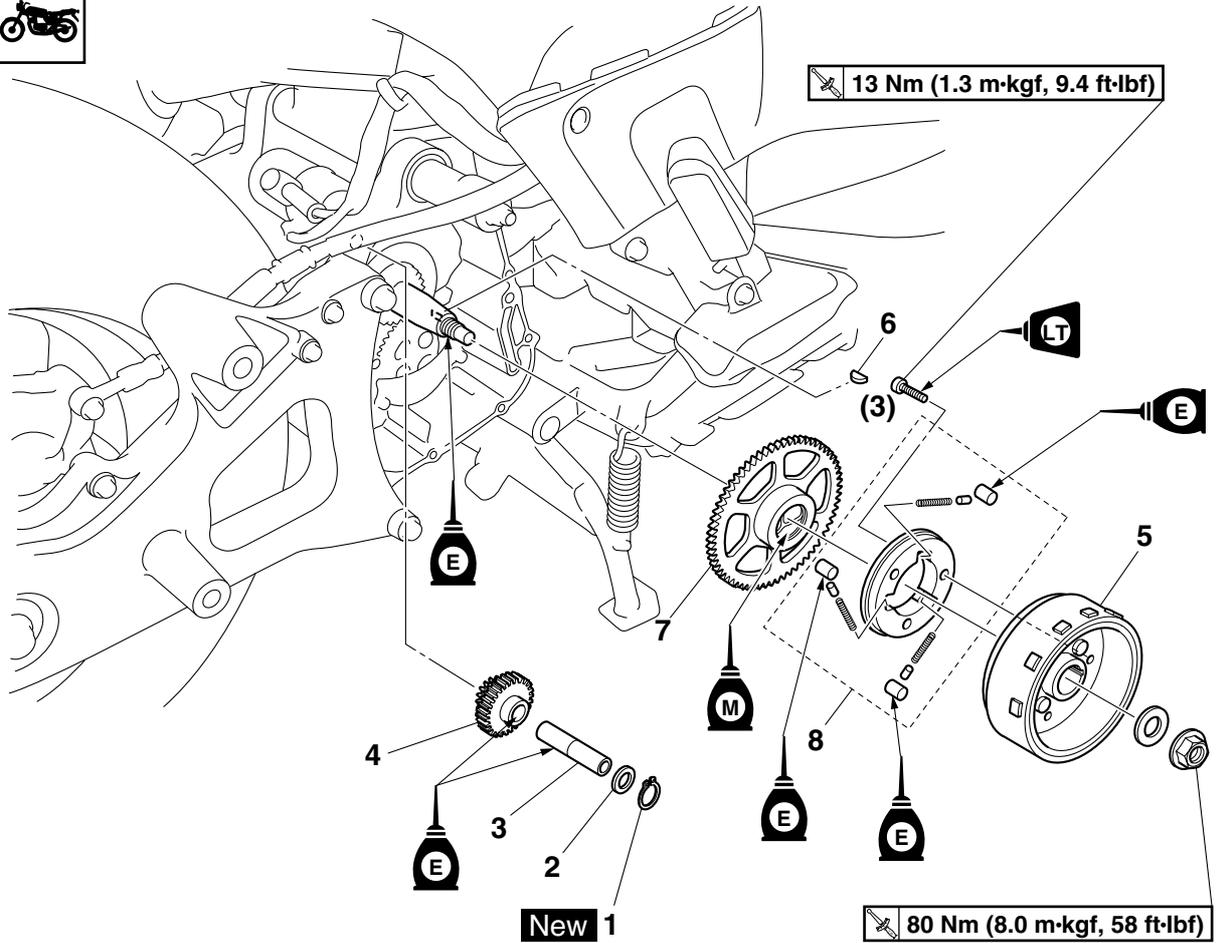
Removing the generator cover and stator coil



Order	Job/Parts to remove	Q'ty	Remarks
	Engine oil		Drain. Refer to "CHANGING THE ENGINE OIL" on page 3-12.
	Muffler/Exhaust pipe		Refer to "ENGINE REMOVAL (YP125R)" on page 5-1.
1	Crankshaft position sensor coupler/Stator assembly coupler	1/1	Disconnect.
2	Generator cover	1	
3	Generator cover gasket	1	
4	Dowel pin	2	
5	Crankshaft position sensor	1	
6	Stator coil	1	
7	Oil seal	1	
			For installation, reverse the removal procedure.

STARTER CLUTCH AND GENERATOR (YP125R)

Removing the generator rotor and starter clutch



Order	Job/Parts to remove	Q'ty	Remarks
1	Circlip	1	
2	Washer	1	
3	Starter clutch idle gear shaft	1	
4	Starter clutch idle gear	1	
5	Generator rotor	1	
6	Woodruff key	1	
7	Starter clutch gear	1	
8	Starter clutch	1	
			For installation, reverse the removal procedure.

STARTER CLUTCH AND GENERATOR (YP125R)

EAS37P1039

REMOVING THE GENERATOR

1. Remove:
 - Generator cover

TIP

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

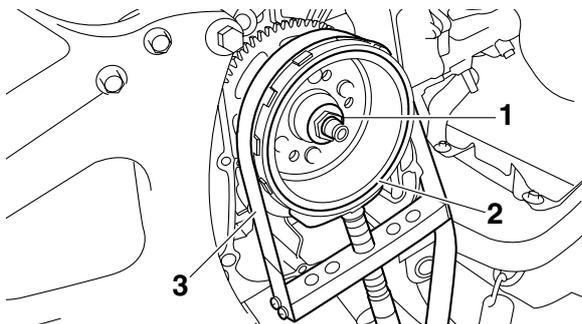
2. Remove:
 - Generator rotor nut "1"
 - Washer

TIP

- While holding the generator rotor "2" with the sheave holder "3", loosen the generator rotor nut.
- Do not allow the sheave holder to touch the projection on the generator rotor.



Sheave holder
90890-01701
Primary clutch holder
YS-01880-A



3. Remove:
 - Generator rotor "1"
(with the flywheel puller "2")
 - Woodruff key

ECA37P1005

NOTICE

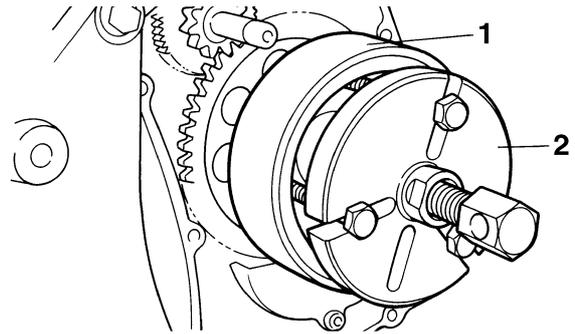
To protect the end of the crankshaft, place an appropriate sized socket between the flywheel puller set center bolt and the crankshaft.

TIP

Make sure the flywheel puller is centered over the generator rotor.



Flywheel puller
90890-01362
Heavy duty puller
YU-33270-B



EAS37P1040

REMOVING THE STARTER CLUTCH

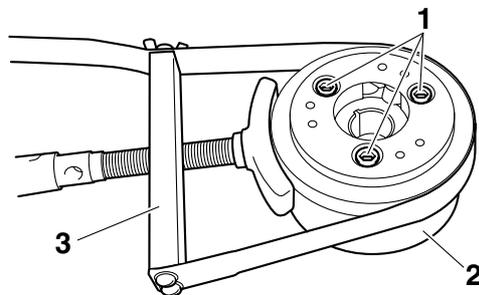
1. Remove:
 - Starter clutch bolts "1"
 - Starter clutch

TIP

- While holding the generator rotor "2" with the sheave holder "3", remove the starter clutch bolts.
- Do not allow the sheave holder to touch the projection on the generator rotor.



Sheave holder
90890-01701
Primary clutch holder
YS-01880-A



EAS37P1041

CHECKING THE STARTER CLUTCH

1. Check:
 - Starter clutch rollers "1"
 - Starter clutch spring caps "2"
 - Starter clutch springs "3"Damage/wear → Replace.

STARTER CLUTCH AND GENERATOR (YP125R)



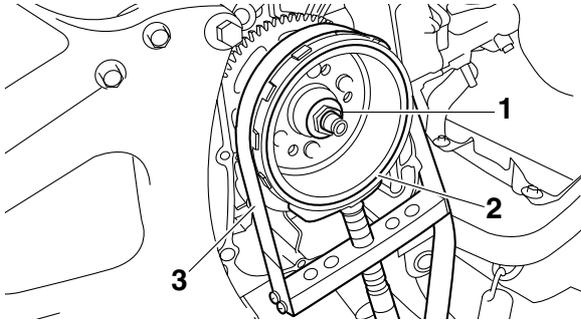
Sheave holder
90890-01701
Primary clutch holder
YS-01880-A



Generator cover bolt
10 Nm (1.0 m·kgf, 7.2 ft·lbf)

TIP _____

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

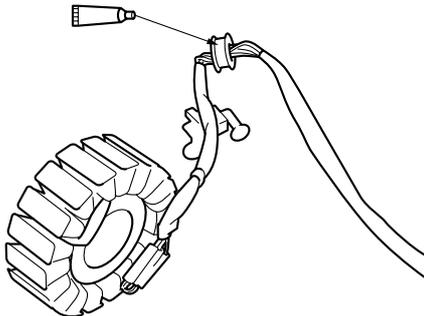


3. Apply:

- Sealant
(onto the crankshaft position sensor/stator assembly lead grommet)



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

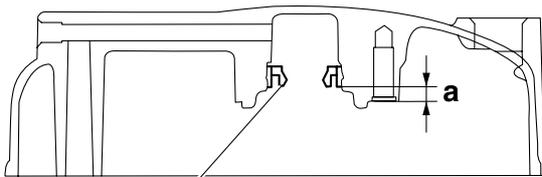


4. Install:

- Oil seal "1" **New**



Oil seal installed depth
4.5–5.4 mm (0.18–0.21 in)



New 1

a. Oil seal installed depth

5. Install:

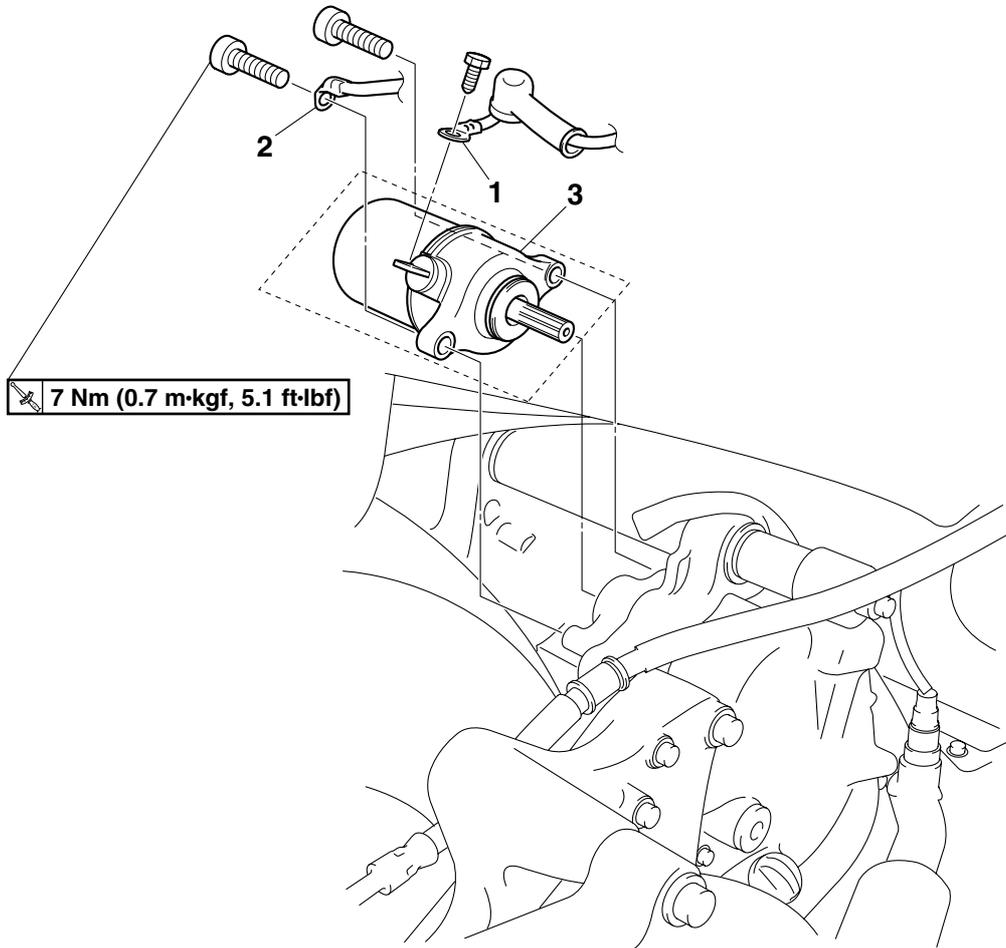
- Generator cover

ELECTRIC STARTER (YP125R)

EAS37P1044

ELECTRIC STARTER (YP125R)

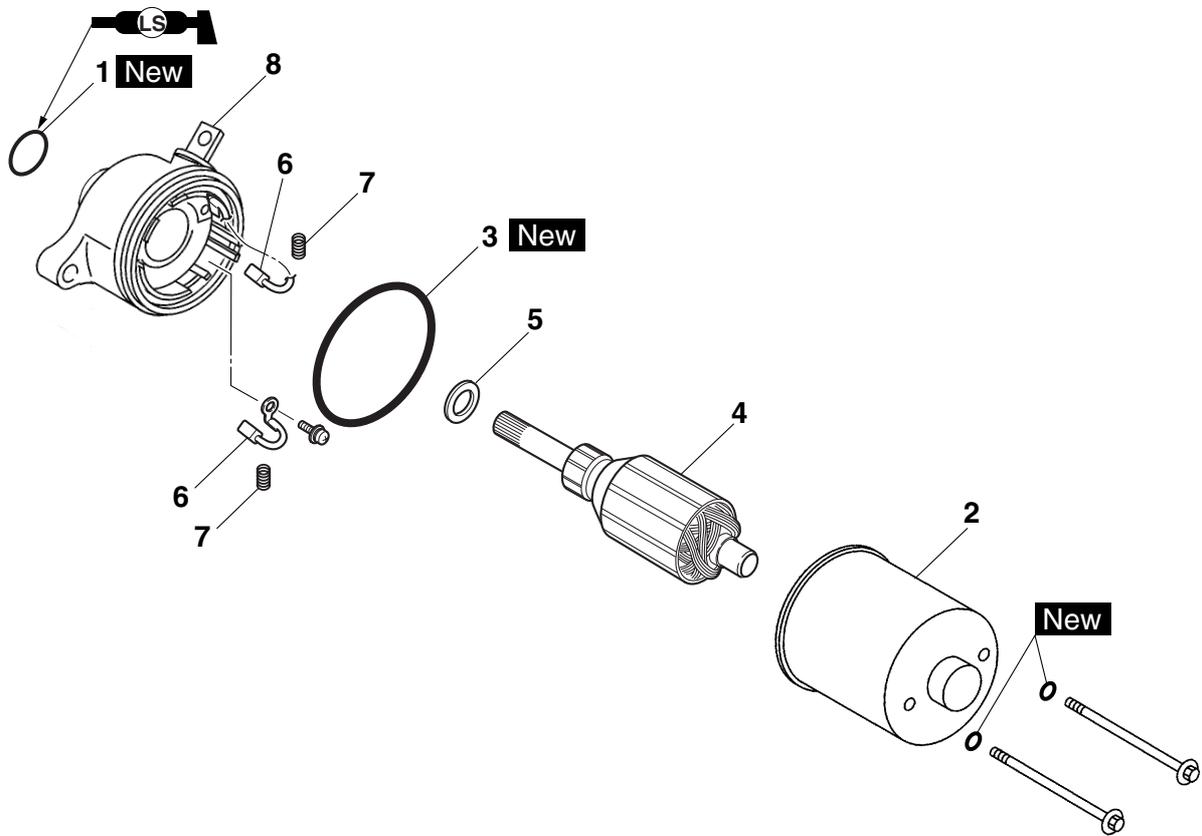
Removing the starter motor



Order	Job/Parts to remove	Q'ty	Remarks
	Storage box/Air filter case		Refer to "GENERAL CHASSIS" on page 4-1.
1	Starter motor lead	1	Disconnect.
2	Ground lead	1	Disconnect.
3	Starter motor	1	
			For installation, reverse the removal procedure.

ELECTRIC STARTER (YP125R)

Disassembling the starter motor



Order	Job/Parts to remove	Q'ty	Remarks
1	O-ring	1	
2	Starter motor yoke	1	
3	O-ring	1	
4	Armature assembly	1	
5	Shim	*	
6	Brush	2	
7	Spring	2	
8	Front bracket/brush holder set	1	
			For assembly, reverse the disassembly procedure.

ELECTRIC STARTER (YP125R)

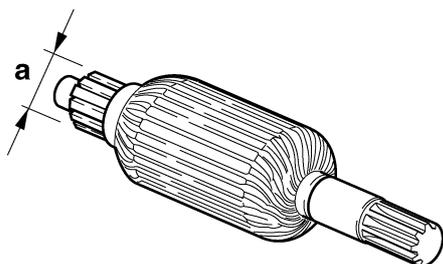
EAS37P1045

CHECKING THE STARTER MOTOR

1. Check:
 - Commutator
Dirt → Clean with 600 grit sandpaper.
2. Measure:
 - Commutator diameter “a”
Out of specification → Replace the starter motor.



Limit
16.6 mm (0.65 in)



3. Measure:
 - Mica undercut “a”
Out of specification → Scrape the mica to the proper measurement with a hacksaw blade that has been grounded to fit the commutator.



Mica undercut (depth)
1.35 mm (0.05 in)

TIP

The mica of the commutator must be undercut to ensure proper operation of the commutator.



4. Measure:
 - Armature assembly resistances (commutator and insulation)
Out of specification → Replace the starter motor.

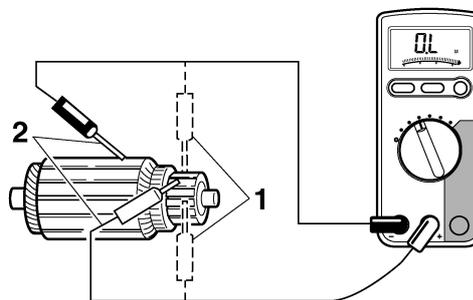
- a. Measure the armature assembly resistances with the digital circuit tester.



Digital circuit tester
90890-03174
Model 88 Multimeter with tachometer
YU-A1927



Armature coil
Commutator resistance “1”
Continuity (0.0378–0.0462 Ω at 20 °C (68 °F))
Insulation resistance “2”
No continuity (Above 1 M Ω at 20 °C (68 °F))



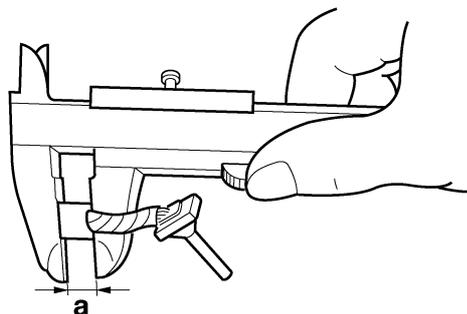
- b. If any resistance is out of specification, replace the starter motor.

5. Measure:

- Brush length “a”
Out of specification → Replace the brushes as a set.



Limit
3.50 mm (0.14 in)



6. Measure:
 - Brush spring force
Out of specification → Replace the brush springs as a set.



Brush spring force
3.92–5.88 N (400–600 gf, 14.11–21.17 oz)

ELECTRIC STARTER (YP125R)

7. Check:

- Gear teeth
Damage/wear → Replace the gear.

8. Check:

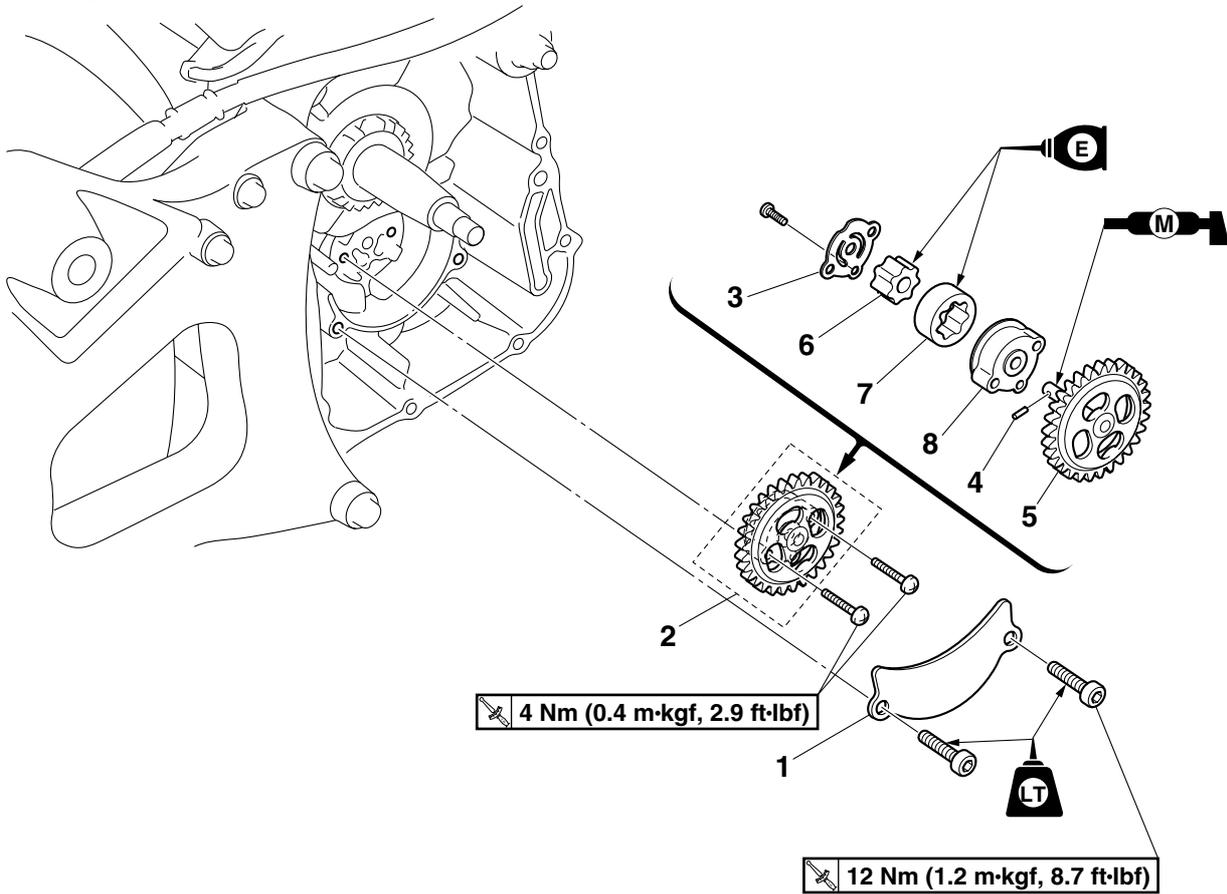
- Bearing
- Oil seal
- Bushing
Damage/wear → Replace the defective part(s).

OIL PUMP (YP125R)

EAS37P1046

OIL PUMP (YP125R)

Removing the oil pump



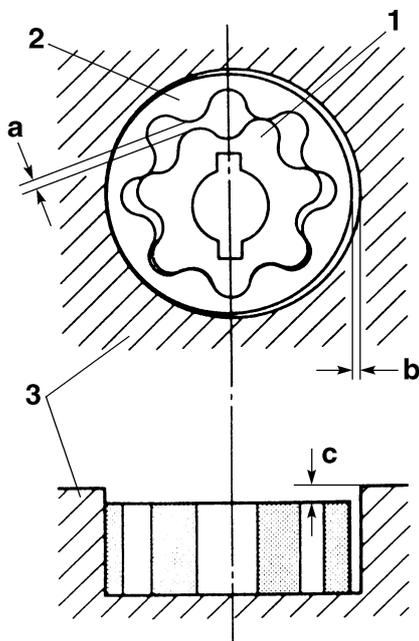
Order	Job/Parts to remove	Q'ty	Remarks
	Starter clutch gear		Refer to "STARTER CLUTCH AND GENERATOR (YP125R)" on page 5-39.
1	Oil pump plate	1	
2	Oil pump assembly	1	
3	Oil pump housing cover	1	
4	Pin	1	
5	Oil pump driven gear	1	
6	Oil pump inner rotor	1	
7	Oil pump outer rotor	1	
8	Oil pump housing	1	
			For installation, reverse the removal procedure.

OIL PUMP (YP125R)

EAS37P1047

CHECKING THE OIL PUMP

1. Check:
 - Oil pump drive gear
 - Oil pump driven gear
 - Oil pump housing
 - Oil pump housing cover
 Cracks/damage/wear → Replace the defective part(s).
2. Measure:
 - Inner-rotor-to-outer-rotor-tip clearance “a”
 - Outer-rotor-to-oil-pump-housing clearance “b”
 - Oil-pump-housing-to-inner-rotor-and-outer-rotor clearance “c”
 Out of specification → Replace the oil pump.

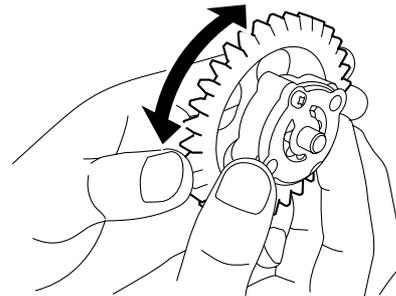


1. Inner rotor
2. Outer rotor
3. Oil pump housing



<p>Inner-rotor-to-outer-rotor-tip clearance Less than 0.15 mm (0.0059 in) Limit 0.23 mm (0.0091 in)</p> <p>Outer-rotor-to-oil-pump-housing clearance 0.013–0.018 mm (0.0005–0.0007 in) Limit 0.25 mm (0.0098 in)</p> <p>Oil-pump-housing-to-inner-and-outer-rotor clearance 0.06–0.11 mm (0.0024–0.0043 in) Limit 0.18 mm (0.0071 in)</p>

3. Check:
 - Oil pump operation
 Rough movement → Repeat steps (1) and (2) or replace the defective part(s).



EAS37P1048

ASSEMBLING THE OIL PUMP

1. Lubricate:
 - Inner rotor
 - Outer rotor



Recommended lubricant
Engine oil

2. Lubricate:
 - Oil pump shaft
 (with the recommended lubricant)

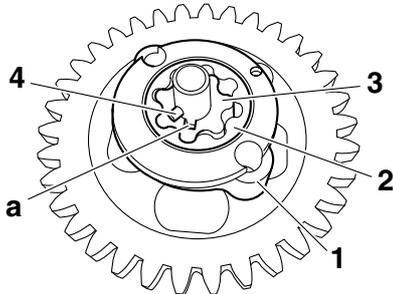


Recommended lubricant
Molybdenum disulfide grease

3. Install:
 - Oil pump driven gear
 - Oil pump housing “1”
 - Oil pump outer rotor “2”
 - Oil pump inner rotor “3”
 - Pin “4”
 - Oil pump housing cover

TIP

When installing the inner rotor, align the pin “4” in the oil pump driven gear with the groove “a” in the inner rotor.



4. Check:

- Oil pump operation
Refer to “CHECKING THE OIL PUMP” on page 5-49.

EAS37P1049

INSTALLING THE OIL PUMP

1. Install:

- Oil pump assembly



Oil pump assembly screw
4 Nm (0.4 m·kgf, 2.9 ft·lbf)

ECA37P1006

NOTICE

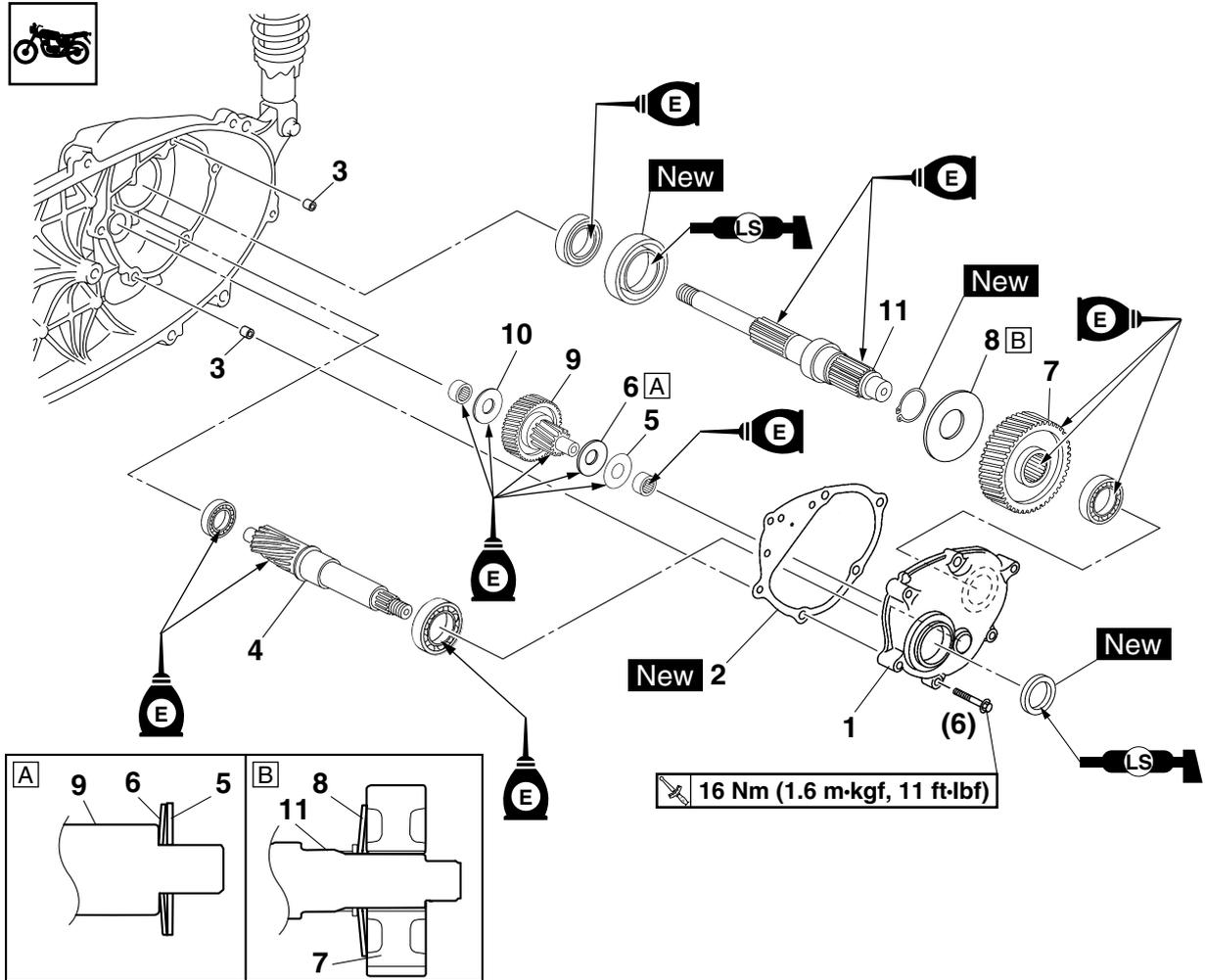
After tightening the screws, make sure the oil pump turns smoothly.

TRANSMISSION (YP125R)

EAS37P1050

TRANSMISSION (YP125R)

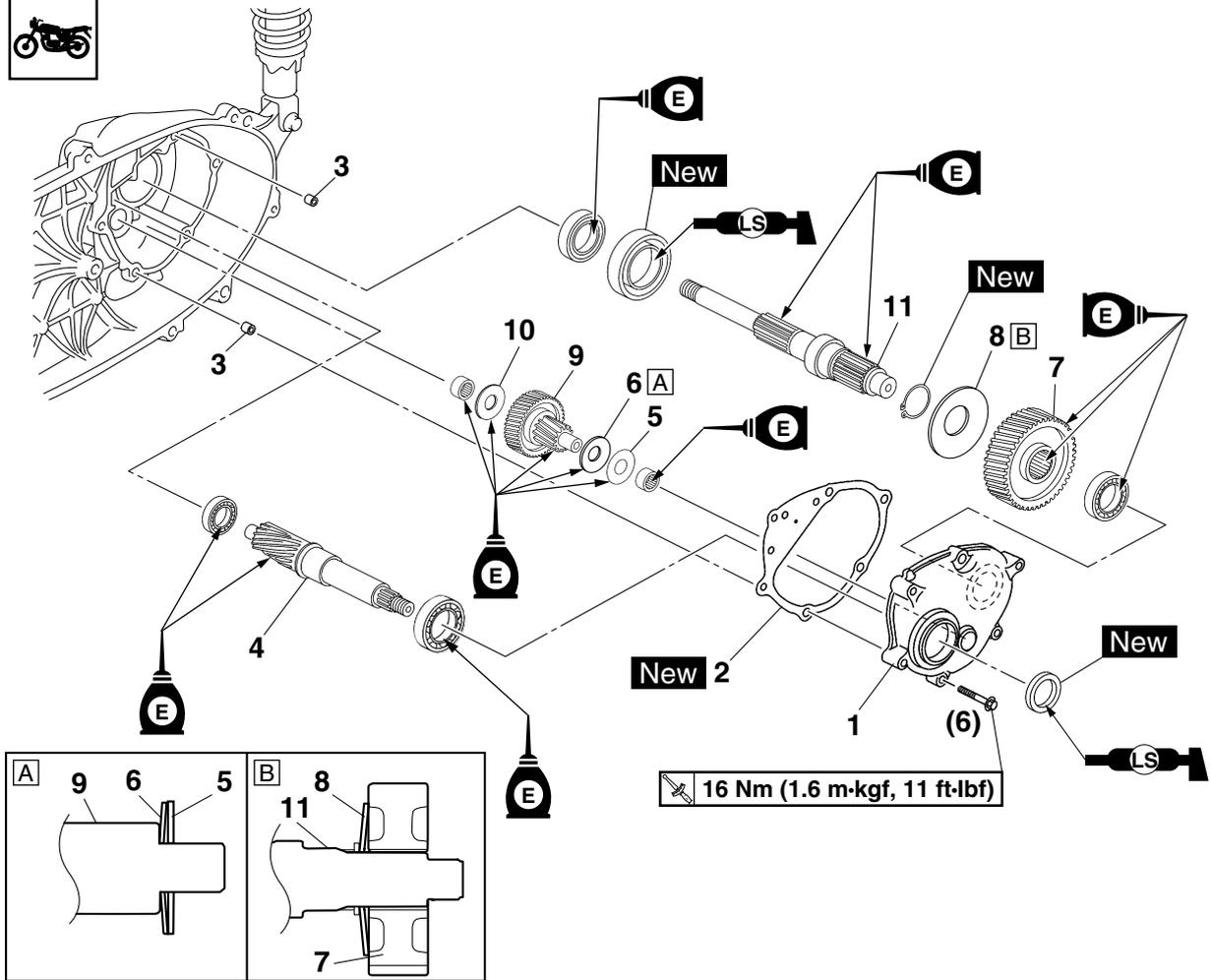
Removing the transmission



Order	Job/Parts to remove	Q'ty	Remarks
	Rear wheel		Refer to "REAR WHEEL" on page 4-15.
	Final transmission oil		Drain. Refer to "CHANGING THE FINAL TRANSMISSION OIL" on page 3-14.
	Secondary sheave assembly		Refer to "V-BELT AUTOMATIC TRANSMISSION (YP125R)" on page 5-30.
1	Transmission case cover	1	
2	Gasket	1	
3	Dowel pin	2	
4	Primary drive gear	1	
5	Washer	1	
6	Conical spring washer	1	
7	1st wheel gear	1	
8	Conical spring washer	1	
9	Main axle/primary driven gear	1	
10	Washer	1	

TRANSMISSION (YP125R)

Removing the transmission



Order	Job/Parts to remove	Q'ty	Remarks
11	Drive axle	1	
			For installation, reverse the removal procedure.

EAS37P1051

REMOVING THE TRANSMISSION

1. Remove:

- Transmission case cover

TIP

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

EAS37P1052

CHECKING THE TRANSMISSION

1. Check:

- Transmission gears
Blue discoloration/pitting/wear → Replace the defective gear(s).
- Transmission gear dogs
Cracks/damage/rounded edges → Replace the defective gear(s).

2. Check:

- Transmission gear engagement
(each pinion gear to its respective wheel gear)
Incorrect → Reassemble the transmission axle assemblies.

3. Check:

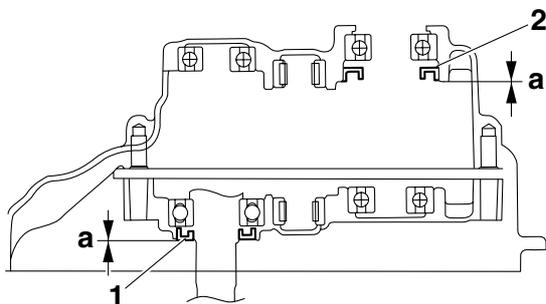
- Transmission gear movement
Rough movement → Replace the defective part(s).

EAS37P1053

INSTALLING THE TRANSMISSION

1. Install:

- Oil seal "1"
- Oil seal "2"



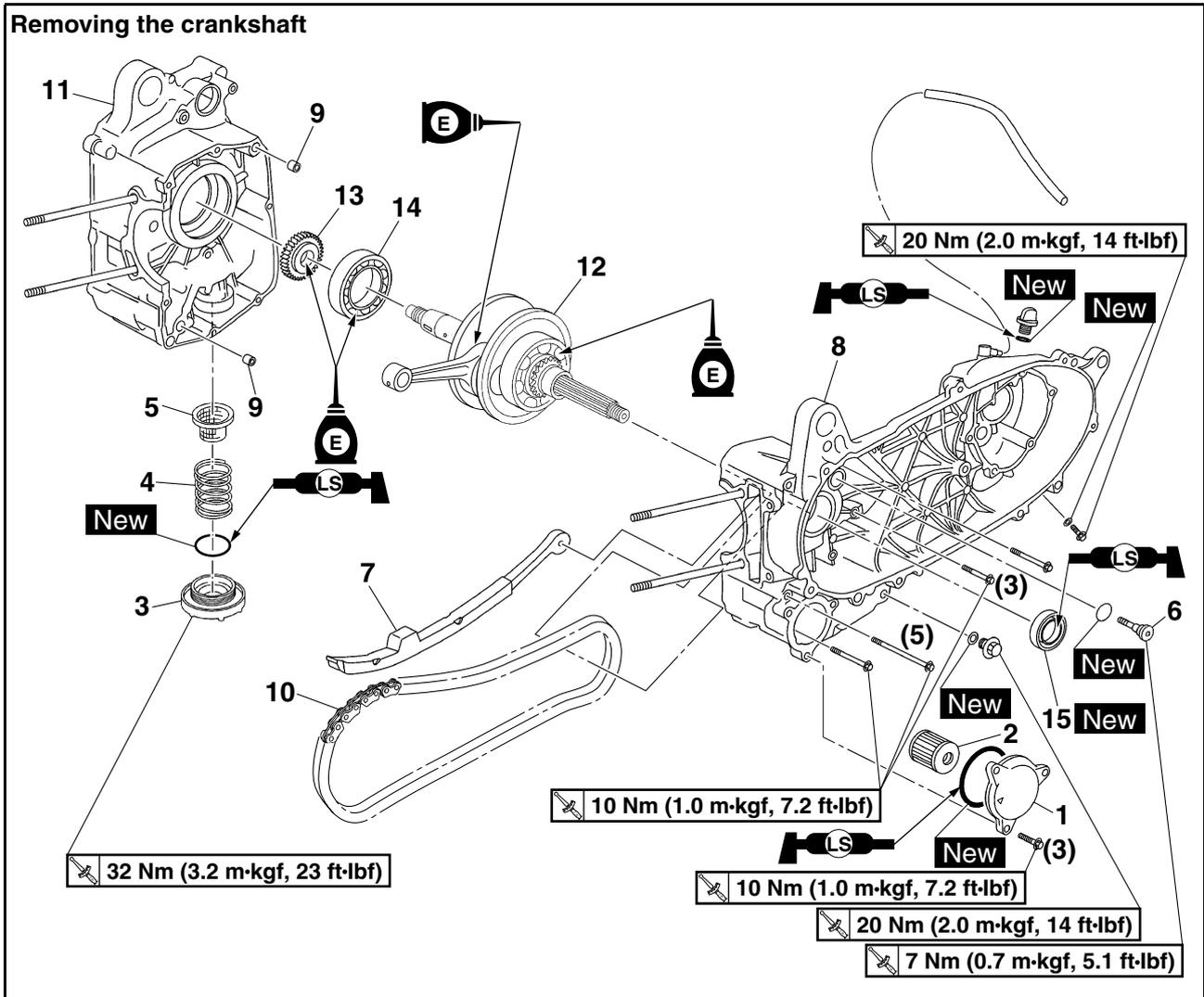
a. Oil seal installed depth

CRANKSHAFT (YP125R)

EAS37P1054

CRANKSHAFT (YP125R)

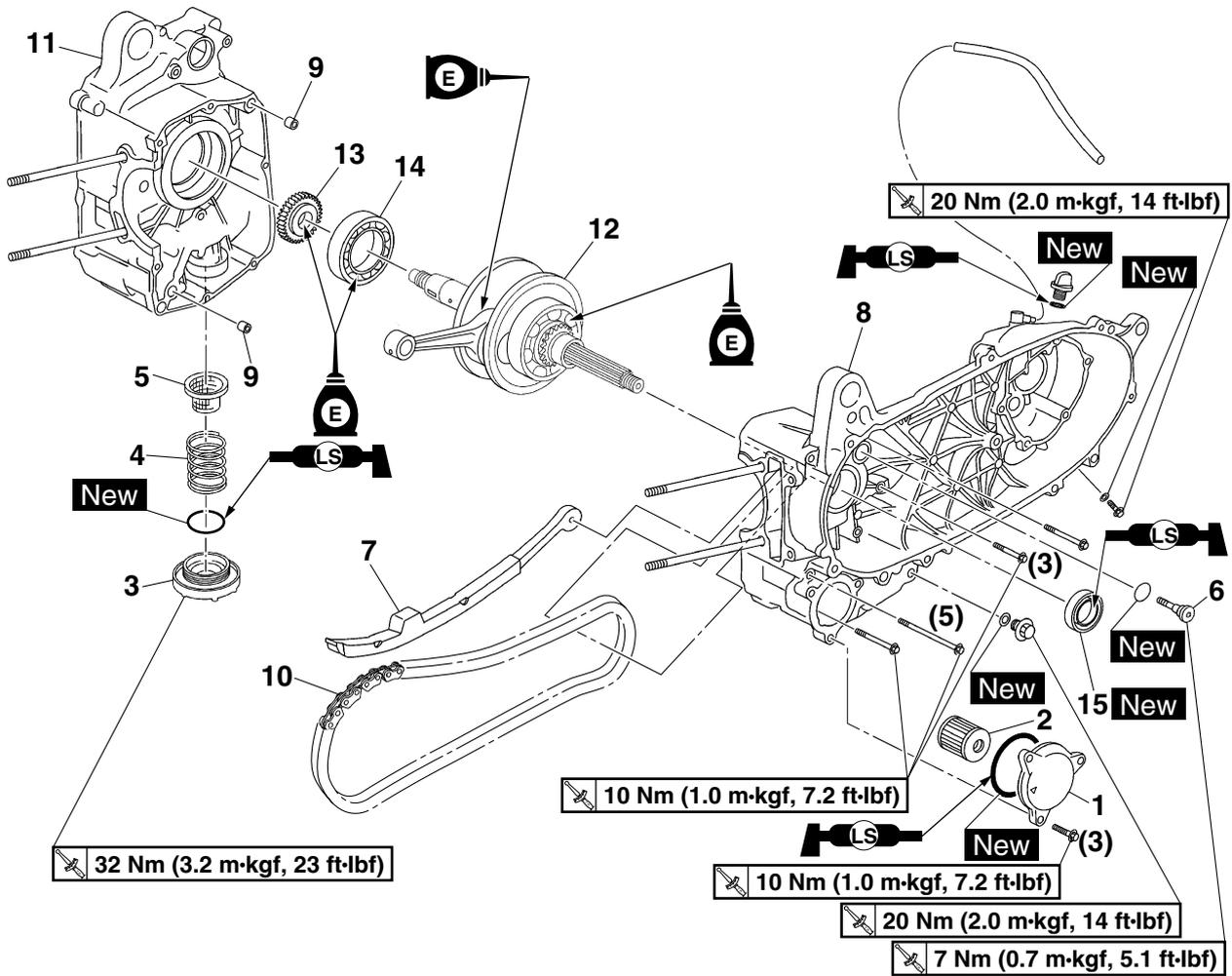
Removing the crankshaft



Order	Job/Parts to remove	Q'ty	Remarks
	Engine		Refer to "ENGINE REMOVAL (YP125R)" on page 5-1.
	Cylinder head		Refer to "CYLINDER HEAD (YP125R)" on page 5-7.
	Piston		Refer to "CYLINDER AND PISTON (YP125R)" on page 5-25.
	Belt drive		Refer to "V-BELT AUTOMATIC TRANSMISSION (YP125R)" on page 5-30.
	Oil pump assembly		Refer to "OIL PUMP (YP125R)" on page 5-48.
	Transmission		Refer to "TRANSMISSION (YP125R)" on page 5-51.
1	Oil filter element cover	1	
2	Oil filter element	1	
3	Oil strainer cover	1	
4	Spring	1	
5	Oil strainer	1	
6	Timing chain guide retaining bolt	1	

CRANKSHAFT (YP125R)

Removing the crankshaft



Order	Job/Parts to remove	Q'ty	Remarks
7	Timing chain guide (intake side)	1	
8	Left crankcase	1	
9	Dowel pin	2	
10	Timing chain	1	
11	Right crankcase	1	
12	Crankshaft assembly	1	
13	Oil pump drive gear	1	
14	Bearing	1	
15	Oil seal	1	
			For installation, reverse the removal procedure.

CRANKSHAFT (YP125R)

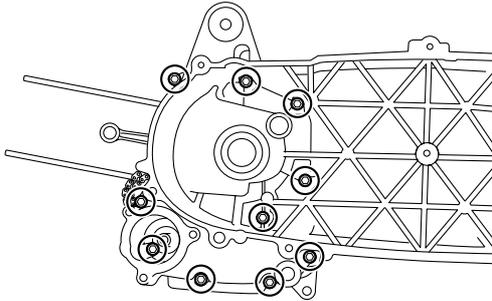
EAS37P1055

DISASSEMBLING THE CRANKCASE

1. Remove:
 - Crankcase bolts

TIP

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

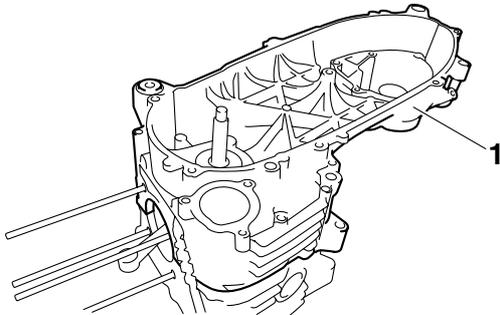


2. Remove:
 - Left crankcase "1"

ECA37P1007

NOTICE

Tap on one side of the crankcase with a soft-face hammer. Tap only on the reinforced portions of the crankcase, not on the crankcase mating surfaces. Work slowly and carefully, and make sure the crankcase halves separate evenly.



EAS37P1056

REMOVING THE CRANKSHAFT ASSEMBLY

1. Remove:
 - Crankshaft assembly "1"

TIP

- Remove the crankshaft assembly with the crankcase separating tool "2" and M6 bolts "3".
- Make sure that the crankcase separating tool is centered over the crankshaft assembly.

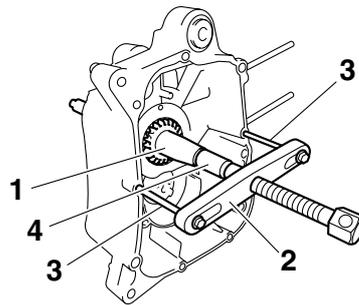
ECA37P1008

NOTICE

- To protect the end of the crankshaft, place an appropriate sized socket "4" between the crankcase separating tool bolt and the crankshaft.
- Do not tap on the crankshaft.



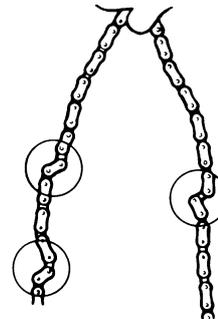
Crankcase separating tool
90890-01135
Crankcase separator
YU-01135-B



EAS37P1057

CHECKING THE TIMING CHAIN AND TIMING CHAIN GUIDE

1. Check:
 - Timing chain
Damage/stiffness → Replace the timing chain and camshaft sprocket as a set.



2. Check:
 - Timing chain guide (intake side)
Damage/wear → Replace.

EAS37P1058

CHECKING THE CRANKSHAFT AND CONNECTING ROD

1. Measure:
 - Crankshaft runout
Out of specification → Replace the crankshaft.

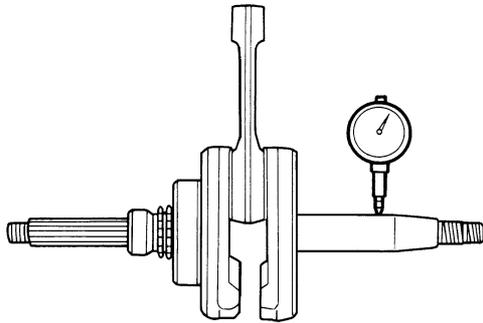
TIP

Turn the crankshaft slowly.

CRANKSHAFT (YP125R)



Runout limit C
0.030 mm (0.0012 in)

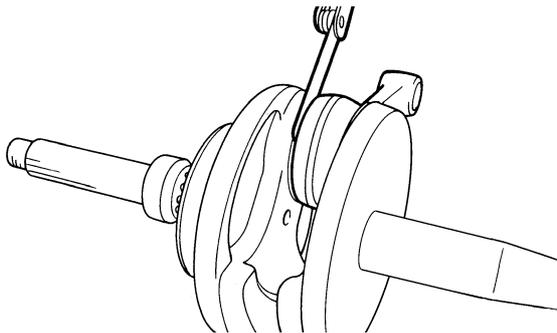


2. Measure:

- Big end side clearance
Out of specification → Replace the crankshaft.



Big end side clearance D
0.150–0.450 mm (0.0059–0.0177 in)

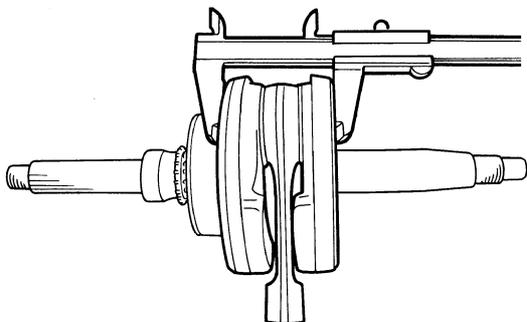


3. Measure:

- Crankshaft width
Out of specification → Replace the crankshaft.



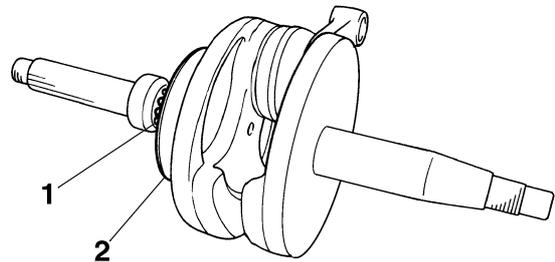
Width A
45.95–46.00 mm (1.809–1.811 in)



4. Check:

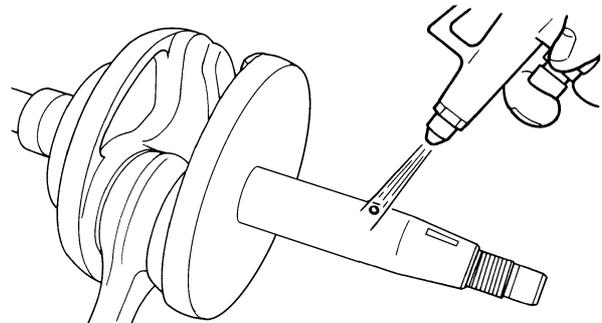
- Crankshaft sprocket “1”
Damage/wear → Replace the crankshaft.

- Bearing “2”
Cracks/damage/wear → Replace the crankshaft.



5. Check:

- Crankshaft journal
Scratches/wear → Replace the crankshaft.
- Crankshaft journal oil passage
Obstruction → Blow out with compressed air.



EAS37P1059

CHECKING THE CRANKCASE

1. Thoroughly wash the crankcase halves in a mild solvent.
2. Thoroughly clean all the gasket surfaces and crankcase mating surfaces.
3. Check:
 - Crankcase
Cracks/damage → Replace.
 - Oil delivery passages
Obstruction → Blow out with compressed air.

EAS37P1060

CHECKING THE BEARING AND OIL SEAL

1. Check:
 - Bearing
Clean and lubricate the bearings, and then rotate the inner race with your finger.
Rough movement → Replace.

EAS37P1061

CHECKING THE OIL PUMP DRIVE GEAR

1. Check:
 - Oil pump drive gear
Damage/wear → Replace.

CRANKSHAFT (YP125R)

EAS37P1062

CHECKING THE OIL STRAINERS

1. Check:
 - Oil strainers
Damage → Replace.
Contaminants → Clean with solvent.

EAS37P1063

INSTALLING THE CRANKSHAFT

1. Lubricate:
 - Oil seals
 - Bearings
 - Oil pump drive gear

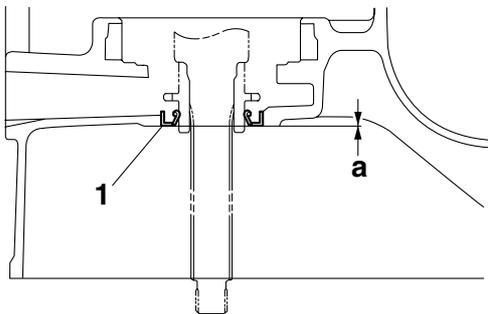


Recommended lubricant
Oil seal
Lithium-soap-based grease
Bearing, oil pump drive gear
Engine oil

2. Install:
 - Oil seal "1"
(to the left crankcase)



Oil seal installed depth
0–0.5 mm (0–0.020 in)



a. Oil seal installed depth

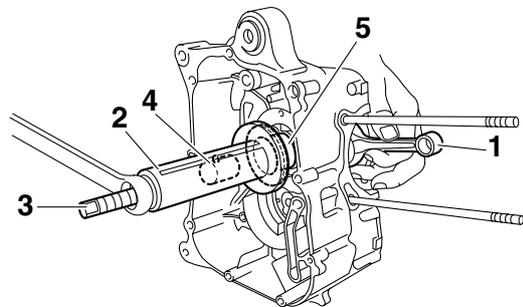
3. Install:
 - Bearing
(to the right crankcase)
4. Install:
 - Crankshaft assembly "1"

TIP

- Install the crankshaft assembly with the crankshaft installer pot "2", crankshaft installer bolt "3", adapter "4", and fork seal driver attachment "5".
- The fork seal driver attachment should only contact the inner race of the bearing.



Crankshaft installer pot
90890-01274
Installing pot
YU-90058
Crankshaft installer bolt
90890-01275
Bolt
YU-90060
Adapter (M14)
90890-01478
Adapter #6
YM-90066
Fork seal driver attachment
90890-01186
Replacement 27 mm
YM-A9409-1



ECA13970

NOTICE

To avoid scratching the crankshaft and to ease the installation procedure, lubricate the oil seal lips with lithium-soap-based grease and each bearing with engine oil.

TIP

Hold the connecting rod at top dead center (TDC) with one hand while turning the nut of the crankshaft installer bolt with the other. Turn the crankshaft installer bolt until the crankshaft assembly bottoms against the bearing.

5. Install:
 - Oil pump drive gear "1"

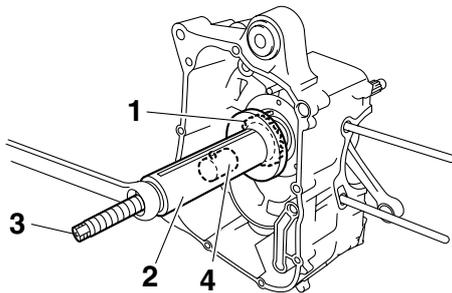
TIP

Install the oil pump drive gear with the crankshaft installer pot "2", crankshaft installer bolt "3", and adapter "4".

CRANKSHAFT (YP125R)



Crankshaft installer pot
90890-01274
Installing pot
YU-90058
Crankshaft installer bolt
90890-01275
Bolt
YU-90060
Adapter (M14)
90890-01478
Adapter #6
YM-90066



EAS37P1064

ASSEMBLING THE CRANKCASE

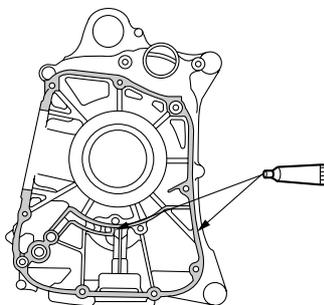
1. Thoroughly clean all the gasket mating surfaces and crankcase mating surfaces.
2. Apply:
 - Sealant
(onto the crankcase mating surfaces)



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

TIP

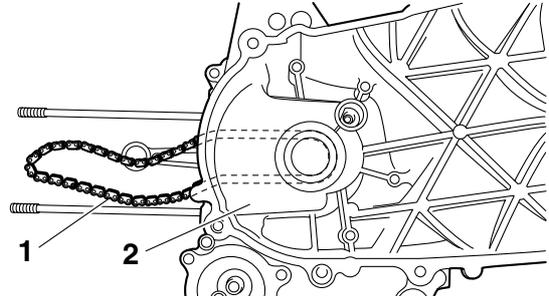
Do not allow any sealant to come into contact with the oil gallery.



3. Install:
 - Timing chain "1"
 - Left crankcase "2"

TIP

After installing the left crankcase, make sure that the timing chain is securely meshed with the crankshaft sprocket.



4. Install:
 - Crankcase bolts

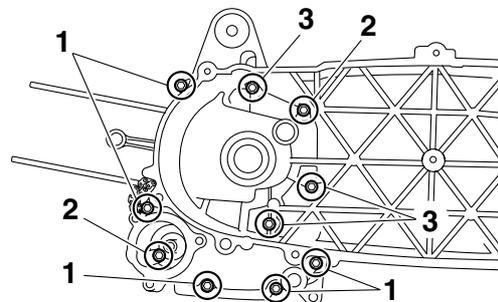


Crankcase bolt
10 Nm (1.0 m·kgf, 7.2 ft·lbf)

TIP

Tighten the crankcase bolts in stages and in a crisscross pattern.

- M6 × 110 mm (4.33 in) bolts: "1"
- M6 × 80 mm (3.15 in) bolts: "2"
- M6 × 70 mm (2.76 in) bolts: "3"



5. Install:
 - Oil filter element cover "1"

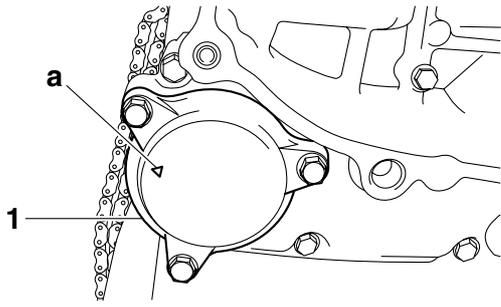


Oil filter element cover
10 Nm (1.0 m·kgf, 7.2 ft·lbf)

TIP

Be sure to face the "△" mark "a" on the oil filter element cover in the direction shown in the illustration.

CRANKSHAFT (YP125R)

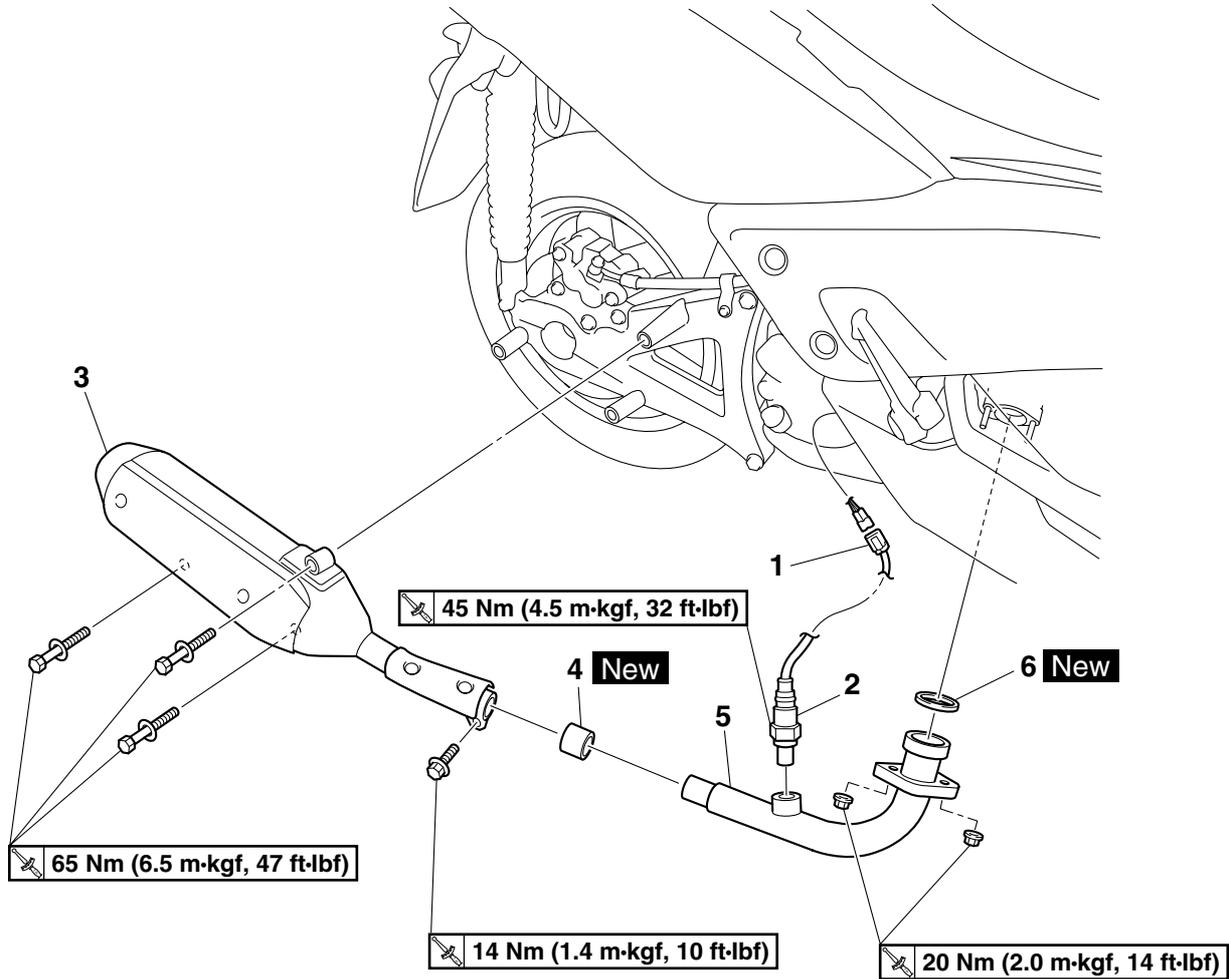


ENGINE REMOVAL (YP250R)

EAS23710

ENGINE REMOVAL (YP250R)

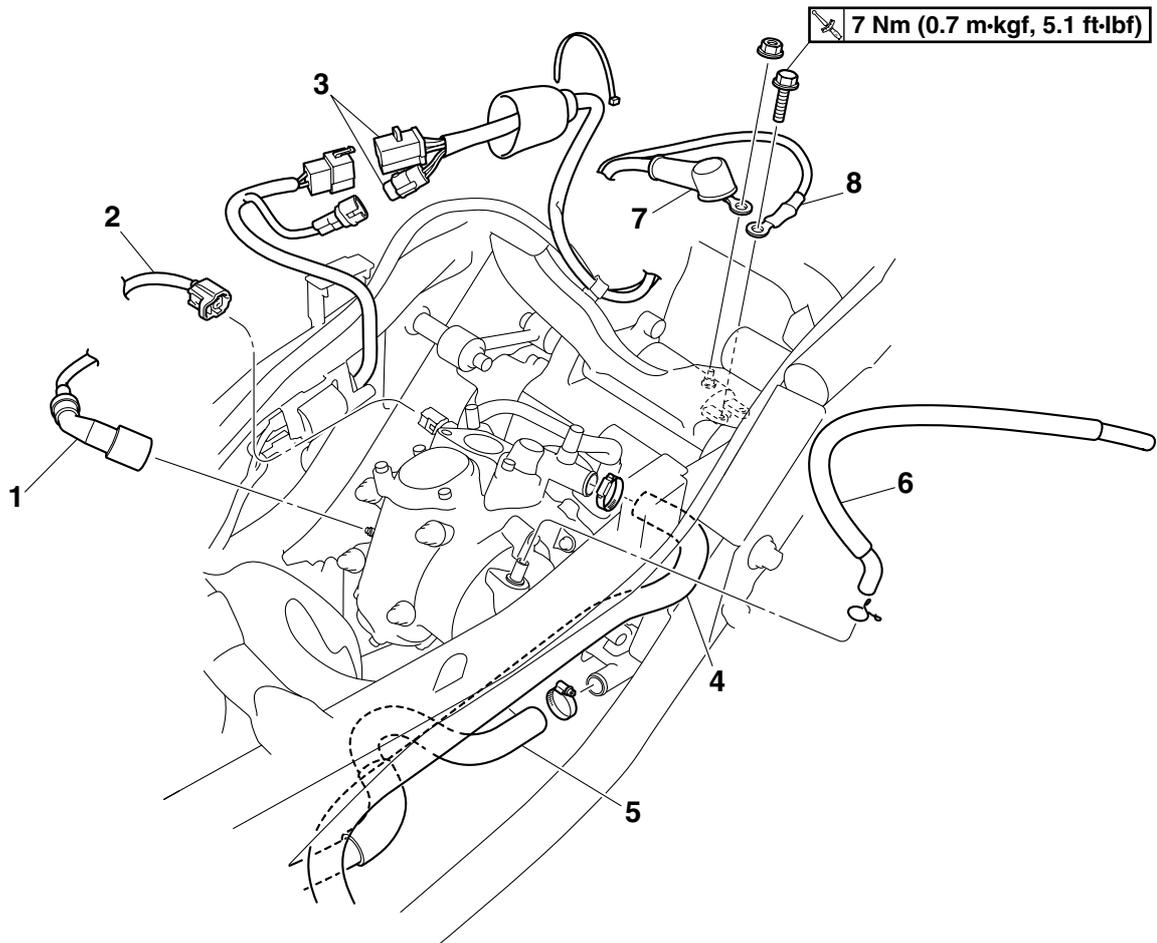
Removing the muffler and exhaust pipe



Order	Job/Parts to remove	Q'ty	Remarks
1	O ₂ sensor coupler	1	Disconnect.
2	O ₂ sensor	1	
3	Muffler	1	
4	Gasket	1	
5	Exhaust pipe	1	
6	Gasket	1	
			For installation, reverse the removal procedure.

ENGINE REMOVAL (YP250R)

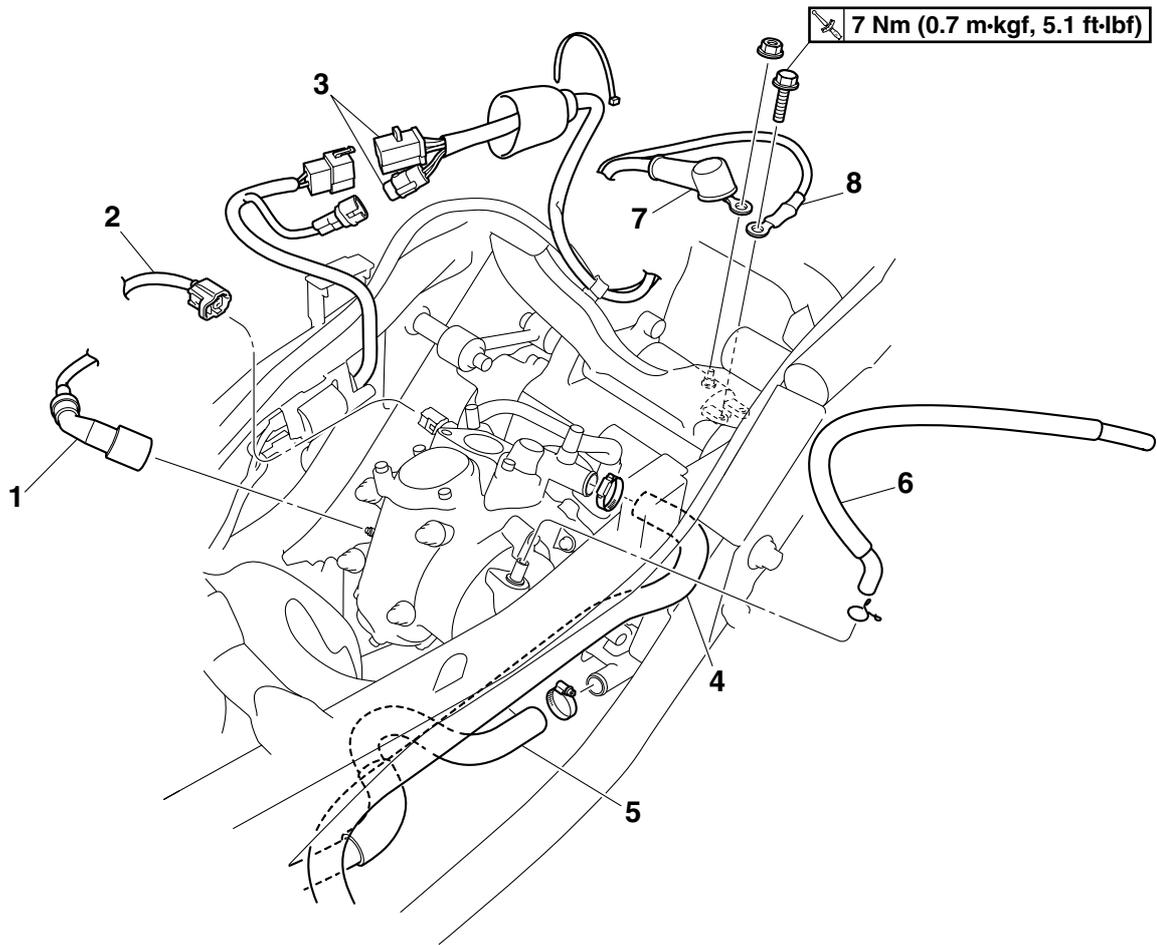
Disconnecting the leads and hoses



Order	Job/Parts to remove	Q'ty	Remarks
	Engine oil		Drain. Refer to "CHANGING THE ENGINE OIL" on page 3-27.
	Coolant		Drain. Refer to "CHANGING THE COOLANT" on page 3-32.
	Air filter case		Refer to "GENERAL CHASSIS" on page 4-1.
	Fuel injector assembly/Throttle body/Intake manifold		Refer to "THROTTLE BODY" on page 7-5.
1	Spark plug cap	1	Disconnect.
2	Coolant temperature sensor coupler	1	Disconnect.
3	Crankshaft position sensor/stator assembly coupler	2	Disconnect.
4	Radiator inlet hose	1	Disconnect.
5	Radiator outlet hose	1	Disconnect.
6	Cylinder head breather hose	1	
7	Starter motor lead	1	Disconnect.

ENGINE REMOVAL (YP250R)

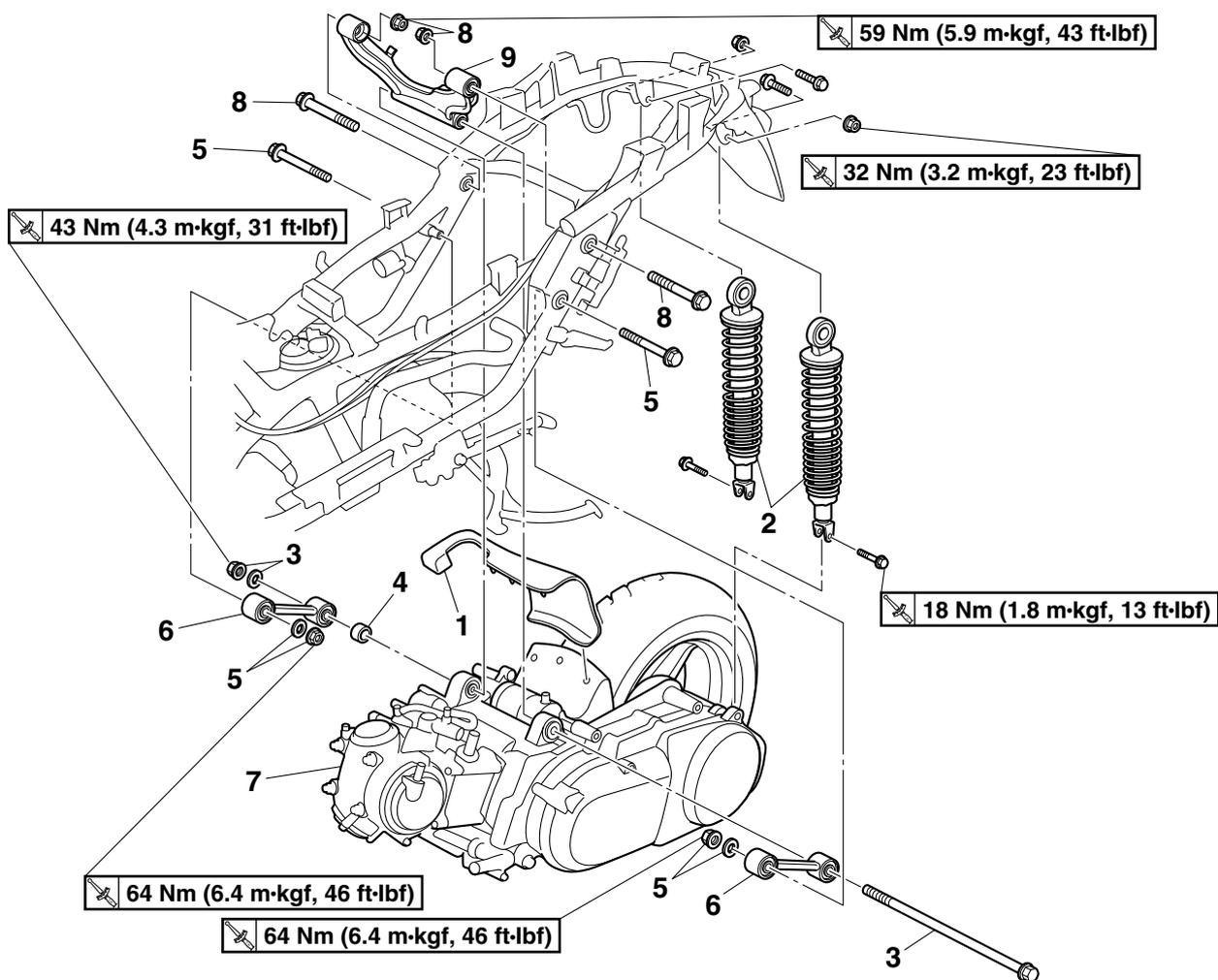
Disconnecting the leads and hoses



Order	Job/Parts to remove	Q'ty	Remarks
8	Ground lead	1	Disconnect.
			For installation, reverse the removal procedure.

ENGINE REMOVAL (YP250R)

Removing the engine



Order	Job/Parts to remove	Q'ty	Remarks
	Rear brake caliper		Refer to "REAR SHOCK ABSORBER ASSEMBLIES AND SWINGARM" on page 4-61.
			TIP Place a suitable stand under the engine.
1	Mudguard	1	
2	Rear shock absorber	2	
3	Engine mounting nut/washer/bolt	1/1/1	
4	Spacer	1	
5	Engine bracket rod nut/washer/bolt	2/2/2	
6	Engine bracket rod	2	
7	Engine	1	
8	Engine bracket nut/bolt	2/2	
9	Engine bracket	1	
			For installation, reverse the removal procedure.

ENGINE REMOVAL (YP250R)

EAS23720

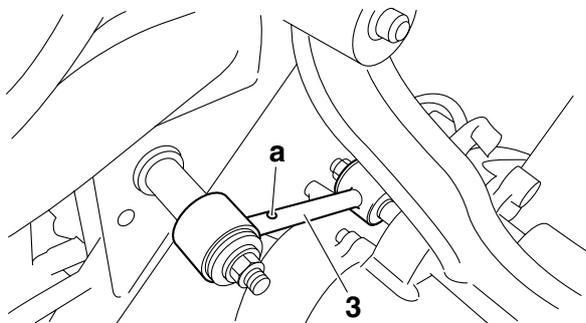
INSTALLING THE ENGINE

1. Install:

- Engine "1"
- Engine bracket "2"
- Engine bracket rods "3"
- Spacer "4"
- Engine mounting nut/washer/bolt "5"
- Engine bracket rod bolts/washers/nuts "6"
- Engine bracket nuts/bolts "7"
- Rear shock absorber assemblies "8"

TIP

- Do not fully tighten the bolts and nuts.
- Be sure to install each engine bracket rod "3" with the white mark "a" on the rod facing forward.

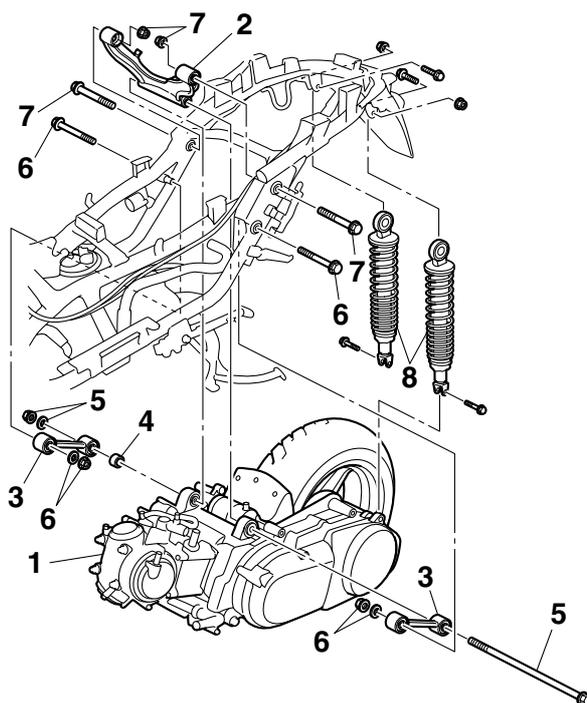


2. Tighten:

- Engine bracket rod nuts "6"
- Engine mounting nut "5"
- Engine bracket nuts "7"



Engine bracket rod nut
64 Nm (6.4 m·kgf, 46 ft·lbf)
Engine mounting nut
43 Nm (4.3 m·kgf, 31 ft·lbf)
Engine bracket nut
59 Nm (5.9 m·kgf, 43 ft·lbf)



3. Tighten:

- Rear shock absorber assembly upper nuts
- Rear shock absorber assembly lower bolts



Rear shock absorber assembly upper nut
32 Nm (3.2 m·kgf, 23 ft·lbf)
Rear shock absorber assembly lower bolt
18 Nm (1.8 m·kgf, 13 ft·lbf)

4. Install:

- Gasket **New**
- Exhaust pipe
- Exhaust pipe nuts (temporarily tighten)

5. Install:

- Muffler
- Muffler mounting bolts (temporarily tighten)

TIP

Install the muffler mounting bolts in the proper installing sequence as shown.

6. Tighten:

- Muffler mounting bolts

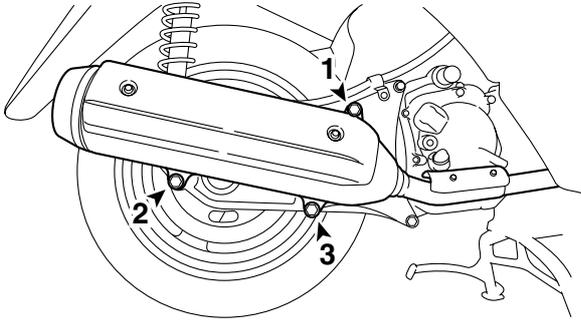


Muffler mounting bolt
65 Nm (6.5 m·kgf, 47 ft·lbf)

ENGINE REMOVAL (YP250R)

TIP

Tighten the muffler mounting bolts in the proper tightening sequence as shown.



7. Tighten:

- Exhaust pipe nuts



Exhaust pipe nut
20 Nm (2.0 m·kgf, 14 ft·lbf)

8. Tighten:

- Muffler joint bolt
- O₂ sensor



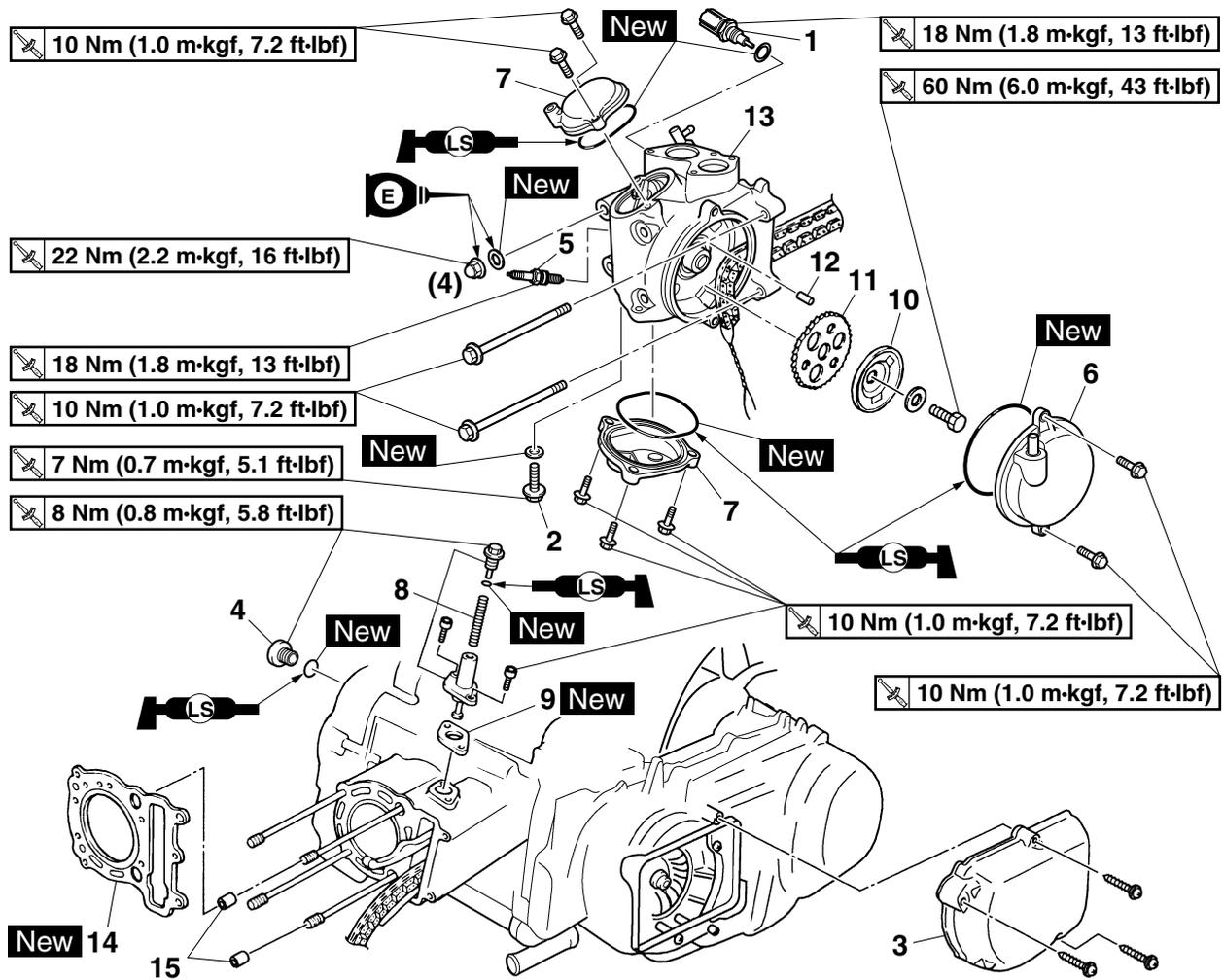
Muffler joint bolt
14 Nm (1.4 m·kgf, 10 ft·lbf)
O₂ sensor
45 Nm (4.5 m·kgf, 32 ft·lbf)

CYLINDER HEAD (YP250R)

EAS24100

CYLINDER HEAD (YP250R)

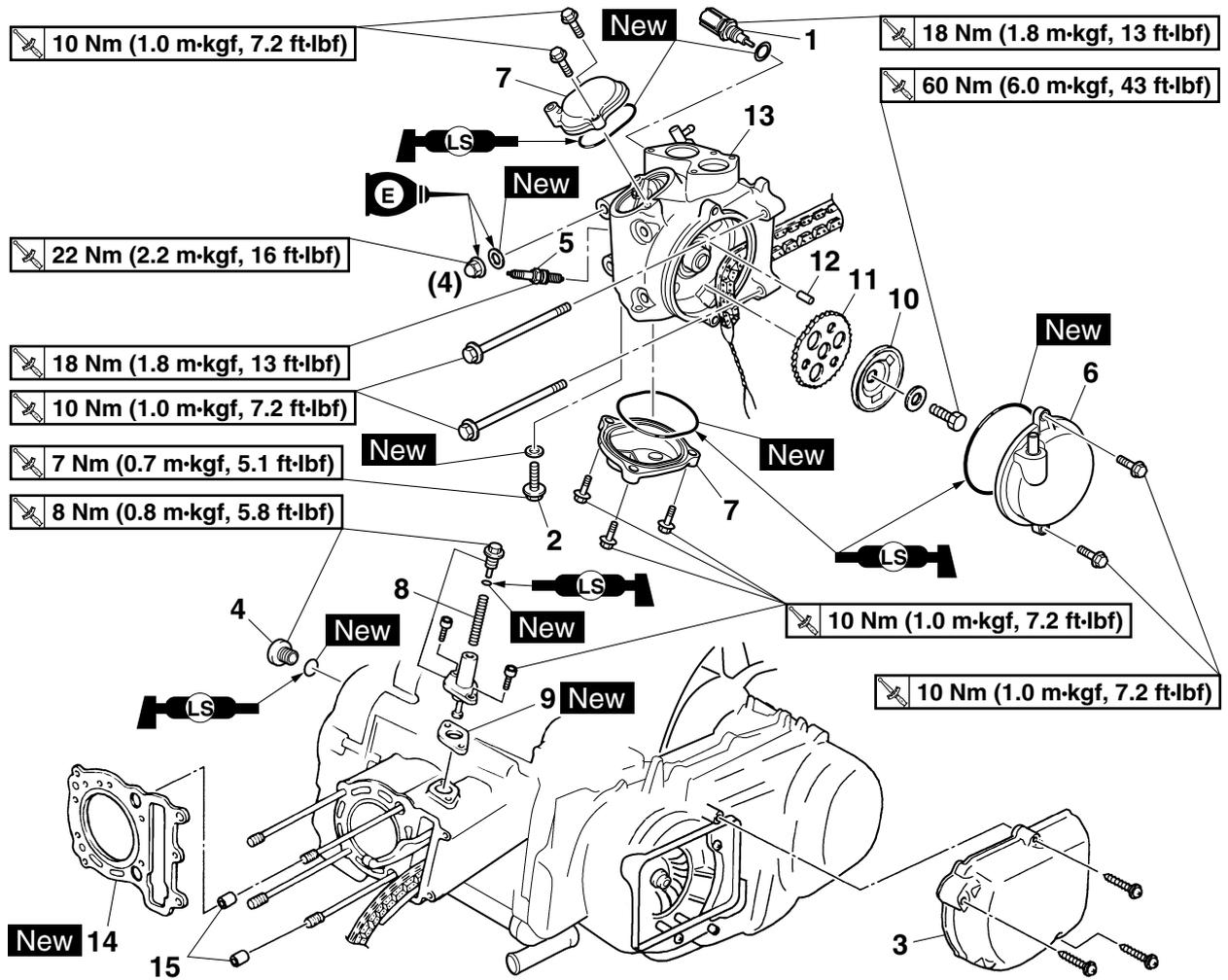
Removing the cylinder head



Order	Job/Parts to remove	Q'ty	Remarks
	Thermostat		Refer to "THERMOSTAT (YP250R)" on page 6-10.
	Engine		Refer to "ENGINE REMOVAL (YP250R)" on page 5-61.
1	Coolant temperature sensor	1	
2	Oil check bolt	1	
3	V-belt case air filter cover	1	
4	Timing mark accessing plug	1	
5	Spark plug	1	
6	Camshaft sprocket cover	1	
7	Tappet cover	2	
8	Timing chain tensioner	1	
9	Timing chain tensioner gasket	1	
10	Camshaft sprocket plate	1	
11	Camshaft sprocket	1	
12	Dowel pin	1	
13	Cylinder head	1	

CYLINDER HEAD (YP250R)

Removing the cylinder head



Order	Job/Parts to remove	Q'ty	Remarks
14	Cylinder head gasket	1	
15	Dowel pin	2	
			For installation, reverse the removal procedure.

CYLINDER HEAD (YP250R)

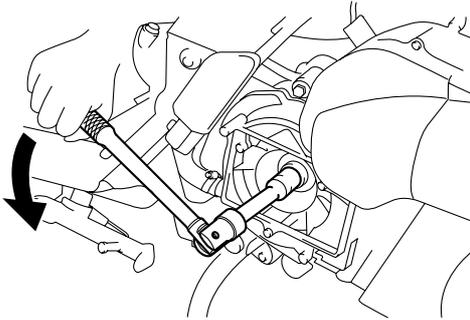
EAS24130

REMOVING THE CYLINDER HEAD

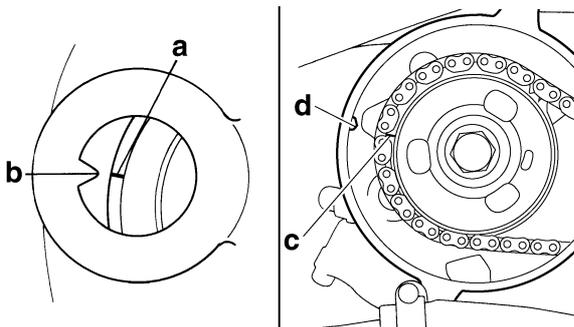
1. Align:

- "I" mark "a" on the generator rotor (with the stationary pointer "b" on the generator cover)

-
- a. Turn the primary sheave nut on the left side of the crankshaft counterclockwise to turn the crankshaft.



- b. When the piston is at TDC on the compression stroke, align the "I" mark "c" on the camshaft sprocket with the stationary pointer "d" on the cylinder head.

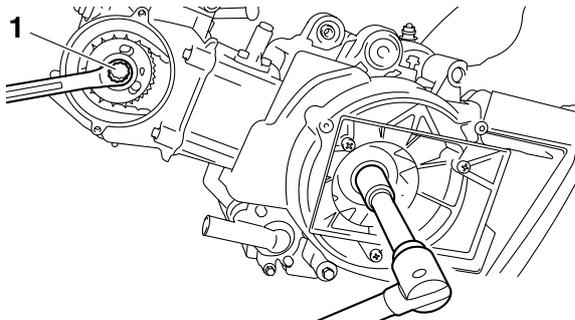


2. Loosen:

- Camshaft sprocket bolt "1"

TIP

While holding the primary sheave nut with a wrench, remove the camshaft sprocket bolt.



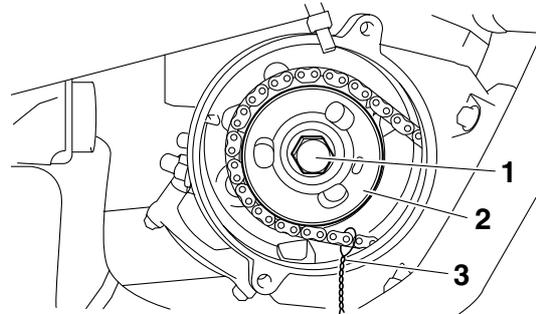
3. Remove:

- Timing chain tensioner (along with the gasket)

- Camshaft sprocket bolt "1"
- Camshaft sprocket plate "2"
- Camshaft sprocket

TIP

To prevent the timing chain from falling into the crankcase, fasten it with a wire "3".

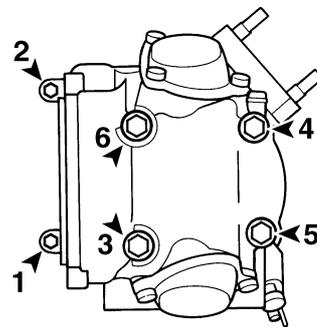


4. Remove:

- Cylinder head

TIP

- Loosen the bolts and nuts in the proper sequence as shown.
- Loosen each bolt and nut 1/2 of a turn at a time. After all of the bolts and nuts are fully loosened, remove them.



EAS24160

CHECKING THE CYLINDER HEAD

1. Eliminate:

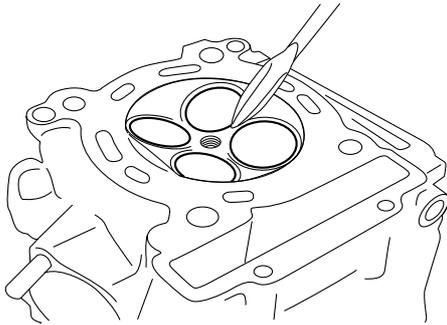
- Combustion chamber carbon deposits (with a rounded scraper)

TIP

Do not use a sharp instrument to avoid damaging or scratching:

- Spark plug bore threads
- Valve seats

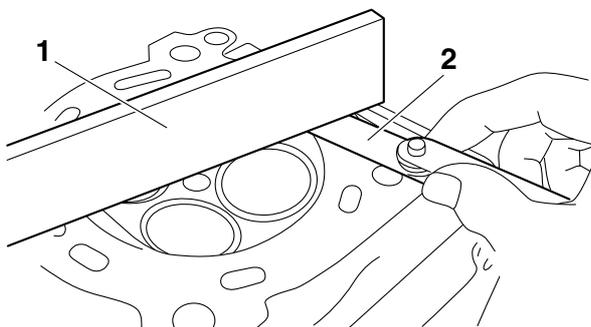
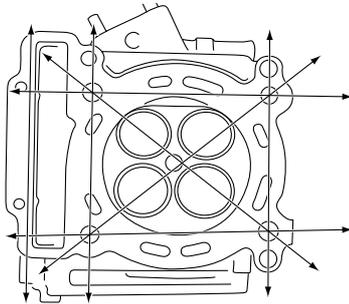
CYLINDER HEAD (YP250R)



2. Check:
 - Cylinder head
Damage/scratches → Replace.
 - Cylinder head water jacket
Mineral deposits/rust → Eliminate.
3. Measure:
 - Cylinder head warpage
Out of specification → Resurface the cylinder head.

	Warpage limit 0.05 mm (0.0020 in)
---	--

- a. Place a straightedge "1" and a thickness gauge "2" across the cylinder head.



- b. Measure the warpage.
- c. If the limit is exceeded, resurface the cylinder head as follows.
- d. Place 400–600 grit wet sandpaper on the surface plate and resurface the cylinder head using a figure-eight sanding pattern.

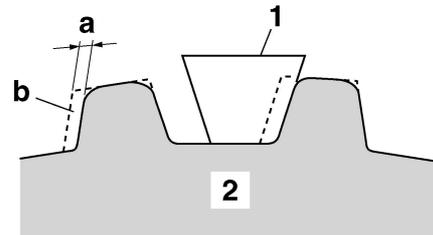
TIP

To ensure an even surface, rotate the cylinder head several times.

EAS23870

CHECKING THE CAMSHAFT SPROCKET

1. Check:
 - Camshaft sprocket
More than 1/4 tooth wear "a" → Replace the camshaft sprocket, timing chain and crankshaft as a set.

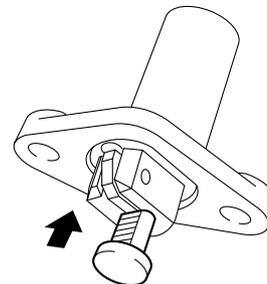


- a. 1/4 tooth
- b. Correct
1. Timing chain roller
2. Camshaft sprocket

EAS24190

CHECKING THE TIMING CHAIN TENSIONER

1. Check:
 - Timing chain tensioner
Cracks/damage → Replace.
2. Check:
 - One-way cam operation
Rough movement → Replace the timing chain tensioner housing.



3. Check:
 - Cap bolt
 - Spring
 - One-way cam
 - Timing chain tensioner rod
Damage/wear → Replace the defective part(s).

CYLINDER HEAD (YP250R)

- c. Install the timing chain tensioner and gasket "5" onto the cylinder.

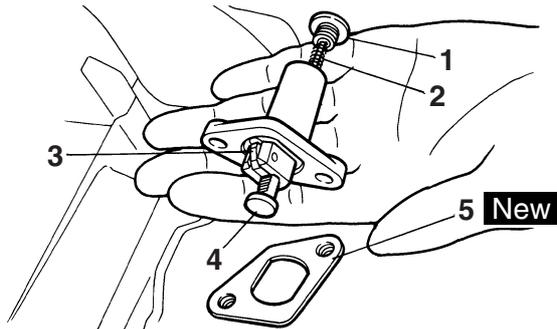


Timing chain tensioner bolt
10 Nm (1.0 m·kgf, 7.2 ft·lbf)

- d. Install the spring and timing chain tensioner cap bolt.



Timing chain tensioner cap bolt
8 Nm (0.8 m·kgf, 5.8 ft·lbf)

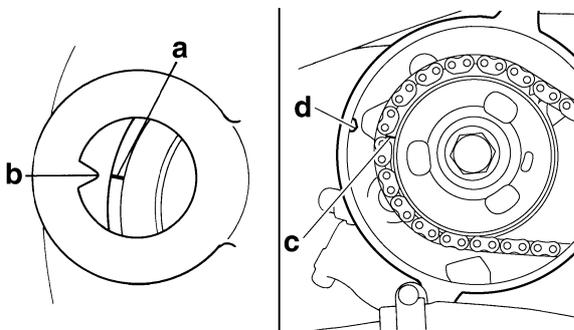


4. Turn:

- Crankshaft
(turn the primary sheave nut on the left side of the crankshaft several turns counterclockwise)

5. Check:

- "I" mark "a"
Make sure the "I" mark "a" on the generator rotor is aligned with the stationary pointer "b" on the generator cover.
- "I" mark "c"
Make sure the "I" mark "c" on the camshaft sprocket is aligned with the stationary pointer "d" on the cylinder head.
Out of alignment → Correct.
Refer to the installation steps above.



6. Tighten:

- Camshaft sprocket bolt



Camshaft sprocket bolt
60 Nm (6.0 m·kgf, 43 ft·lbf)

ECA37P1010

NOTICE

Be sure to tighten the camshaft sprocket bolt to the specified torque to avoid the possibility of the bolt coming loose and damaging the engine.

7. Measure:

- Valve clearance

Out of specification → Adjust.

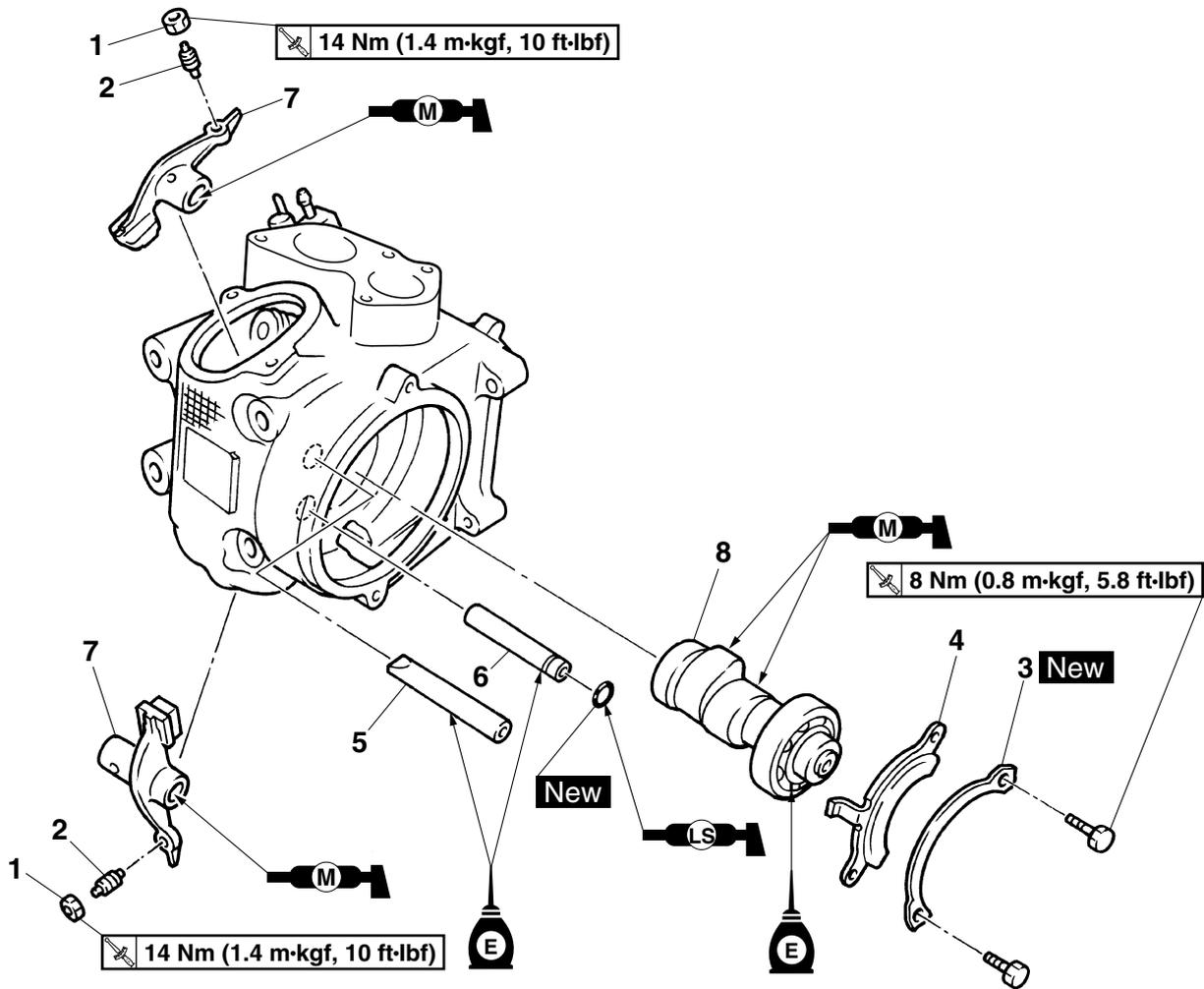
Refer to "ADJUSTING THE VALVE CLEARANCE" on page 3-21.

CAMSHAFT (YP250R)

EAS23730

CAMSHAFT (YP250R)

Removing the rocker arms and camshaft



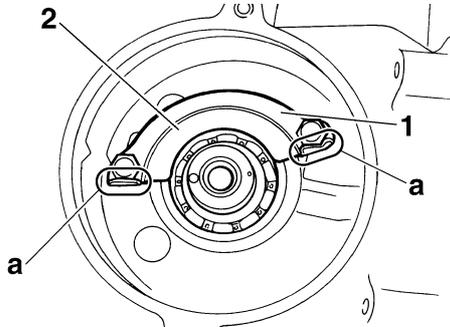
Order	Job/Parts to remove	Q'ty	Remarks
	Cylinder head		Refer to "CYLINDER HEAD (YP250R)" on page 5-67.
1	Locknut	2	Loosen.
2	Adjusting screw	2	Loosen.
3	Lock plate	1	
4	Camshaft retainer	1	
5	Intake rocker arm shaft	1	
6	Exhaust rocker arm shaft	1	
7	Rocker arm	2	
8	Camshaft	1	
			For installation, reverse the removal procedure.

CAMSHAFT (YP250R)

EAS23770

REMOVING THE ROCKER ARMS AND CAMSHAFT

1. Straighten the lock plate tabs "a".
2. Remove:
 - Lock plate "1"
 - Camshaft retainer "2"



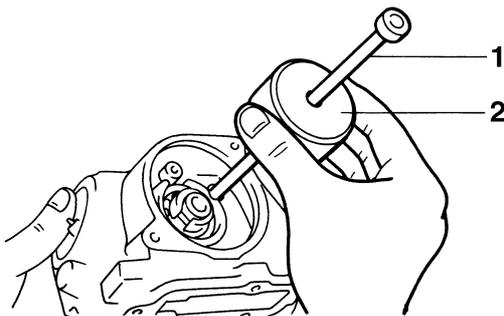
3. Remove:
 - Rocker arm shafts
 - Rocker arms

TIP

Remove the rocker arm shafts with the slide hammer bolt "1" and weight "2".



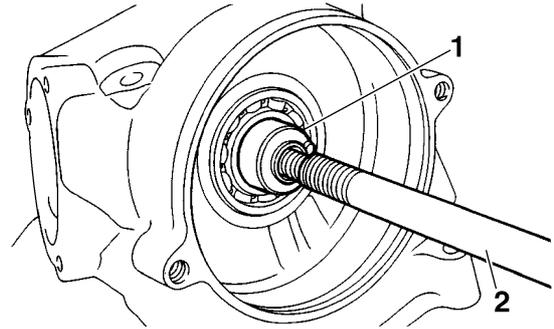
Slide hammer bolt
90890-01083
Slide hammer bolt 6 mm
YU-01083-1
Weight
90890-01084
YU-01083-3



4. Remove:
 - Camshaft "1"

TIP

Screw a M10 bolt "2" into the threaded end of the camshaft, and then pull out the camshaft.



EAS23840

CHECKING THE CAMSHAFT

1. Check:
 - Camshaft lobes
Blue discoloration/pitting/scratches → Replace the camshaft.
2. Measure:
 - Camshaft lobe dimensions "a" and "b"
Out of specification → Replace the camshaft.



Camshaft lobe dimensions

Intake A

37.051–37.151 mm (1.4587–1.4626 in)

Limit

36.950 mm (1.4547 in)

Intake B

30.074–30.174 mm (1.1840–1.1880 in)

Limit

29.974 mm (1.1801 in)

Exhaust A

37.053–37.153 mm (1.4588–1.4627 in)

Limit

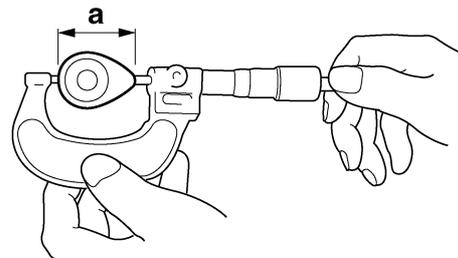
36.953 mm (1.4548 in)

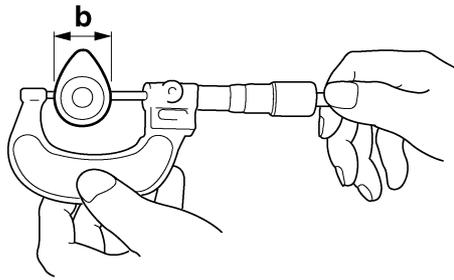
Exhaust B

30.091–30.191 mm (1.1847–1.1886 in)

Limit

29.991 mm (1.1807 in)





3. Check:

- Camshaft oil passage
Obstruction → Blow out with compressed air.

EAS23880

CHECKING THE ROCKER ARMS AND ROCKER ARM SHAFTS

The following procedure applies to all of the rocker arms and rocker arm shafts.

1. Check:

- Rocker arm
Damage/wear → Replace.

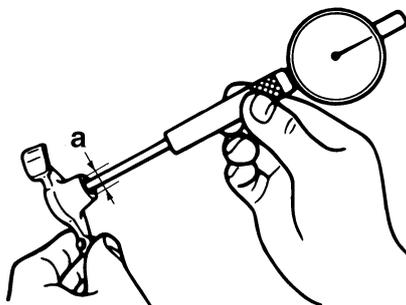
2. Check:

- Rocker arm shaft
Blue discoloration/excessive wear/pitting/scratches → Replace or check the lubrication system.

3. Measure:

- Rocker arm inside diameter "a"
Out of specification → Replace.

	<p>Rocker arm inside diameter 12.000–12.018 mm (0.4724–0.4731 in) Limit 12.030 mm (0.4736 in)</p>
---	---



4. Measure:

- Rocker arm shaft outside diameter "a"
Out of specification → Replace.

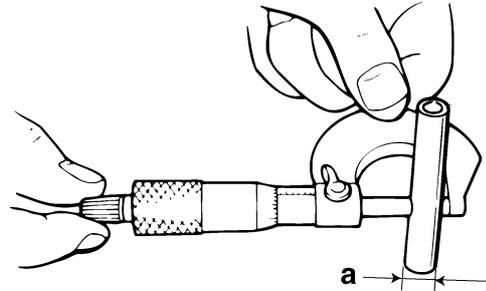


Rocker arm shaft outside diameter

11.981–11.991 mm (0.4717–0.4721 in)

Limit

11.950 mm (0.4705 in)



5. Calculate:

- Rocker-arm-to-rocker-arm-shaft clearance

TIP

Calculate the clearance by subtracting the rocker arm shaft outside diameter from the rocker arm inside diameter.

Out of specification → Replace the defective part(s).



Rocker-arm-to-rocker-arm-shaft clearance

0.009–0.037 mm (0.0004–0.0015 in)

Limit

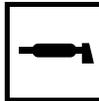
0.080 mm (0.0031 in)

EAS24040

INSTALLING THE CAMSHAFT AND ROCKER ARMS

1. Lubricate:

- Camshaft

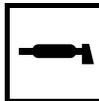


Recommended lubricant

Camshaft
Molybdenum disulfide grease
Camshaft bearing
Engine oil

2. Lubricate:

- Rocker arms
- Rocker arm shafts



Recommended lubricant

Rocker arm inner surface
Molybdenum disulfide grease
Rocker arm shaft
Engine oil

CAMSHAFT (YP250R)

3. Install:

- Exhaust rocker arm
- Exhaust rocker arm shaft

TIP

Make sure the exhaust rocker arm shaft is completely pushed into the cylinder head.

4. Install:

- Intake rocker arm
- Intake rocker arm shaft "1"

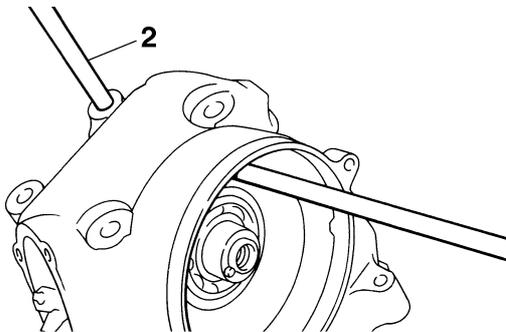
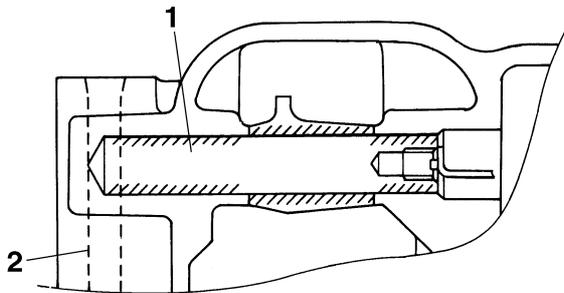
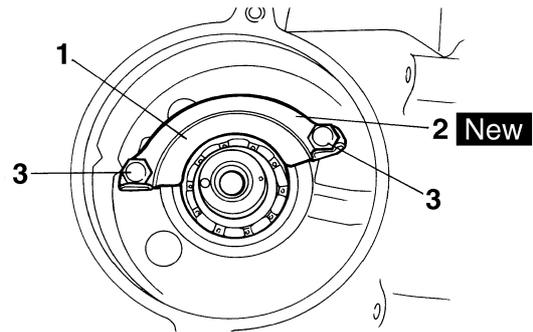
TIP

Insert a guide stud (8 mm) "2" into the stud-bolt hole in the cylinder head and install the intake rocker arm shaft as shown.

ECA13780

NOTICE

Make sure the threaded part of the rocker arm shaft faces out.



5. Install:

- Camshaft retainer "1"
- Lock plate "2" **New**



Camshaft retainer bolt
8 Nm (0.8 m·kgf, 5.8 ft·lbf)

TIP

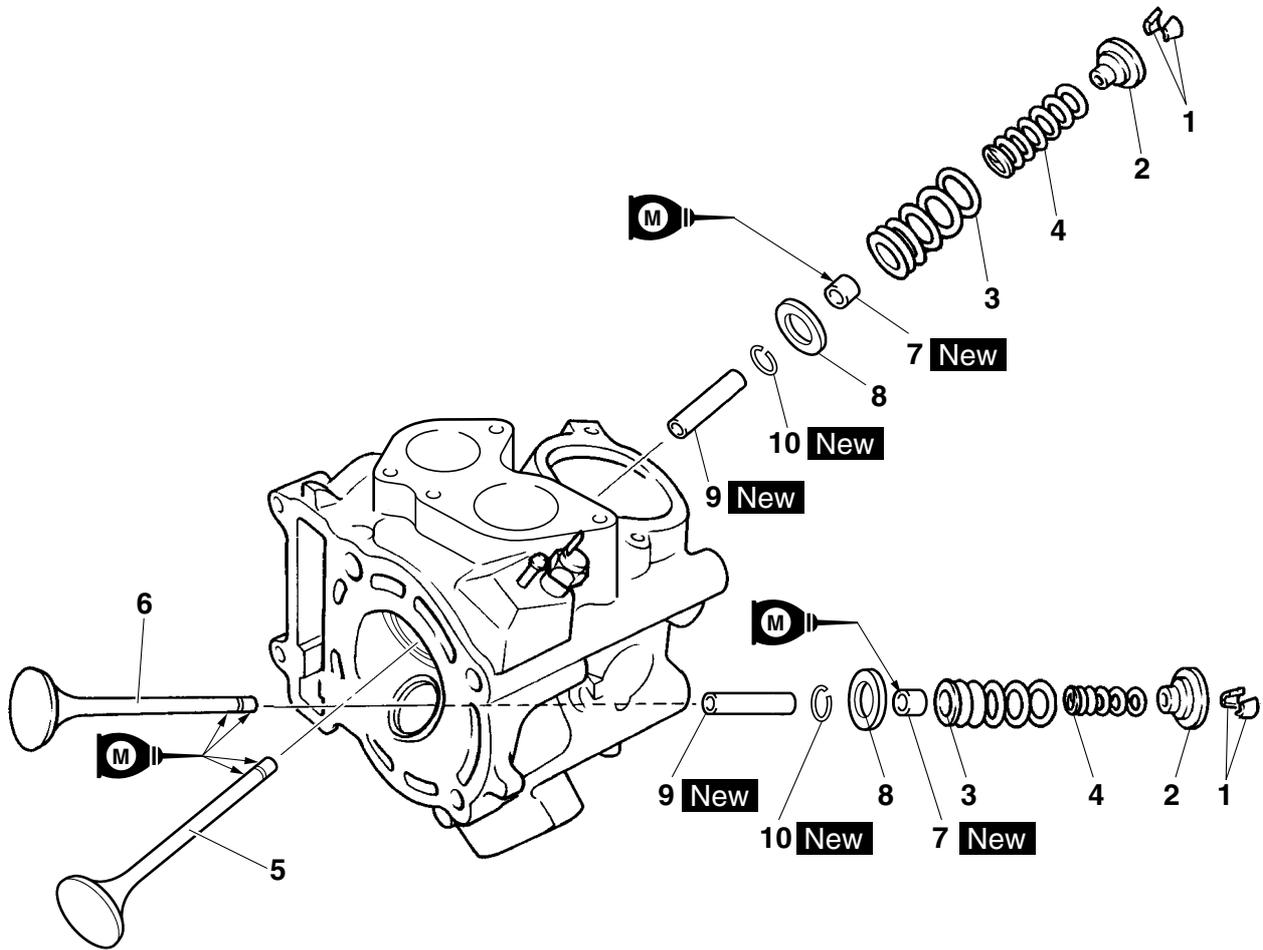
Bend the lock plate tabs along a flat side of the bolts "3".

VALVES AND VALVE SPRINGS (YP250R)

EAS24270

VALVES AND VALVE SPRINGS (YP250R)

Removing the valves and valve springs



Order	Job/Parts to remove	Q'ty	Remarks
	Cylinder head		Refer to "CYLINDER HEAD (YP250R)" on page 5-67.
	Rocker arms/Camshaft		Refer to "CAMSHAFT (YP250R)" on page 5-73.
1	Valve cotter	4	
2	Upper spring seat	2	
3	Outer valve spring	2	
4	Inner valve spring	2	
5	Intake valve	1	
6	Exhaust valve	1	
7	Valve stem seal	2	
8	Lower spring seat	2	
9	Valve guide	2	
10	Clip	2	
			For installation, reverse the removal procedure.

VALVES AND VALVE SPRINGS (YP250R)

EAS24280

REMOVING THE VALVES

The following procedure applies to all of the valves and related components.

TIP

Before removing the internal parts of the cylinder head (e.g., valves, valve springs, valve seats), make sure the valves properly seal.

1. Check:

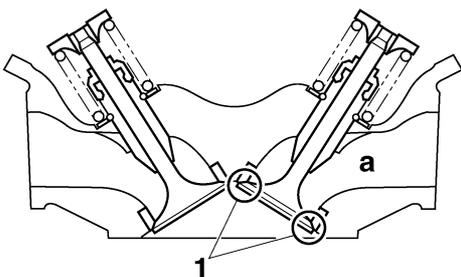
- Valve sealing
Leakage at the valve seat → Check the valve face, valve seat, and valve seat width.
Refer to “CHECKING THE VALVE SEATS” on page 5-80.

a. Pour a clean solvent “a” into the intake and exhaust ports.

b. Check that the valves properly seal.

TIP

There should be no leakage at the valve seat “1”.



2. Remove:

- Valve cotters “1”

TIP

Remove the valve cotters by compressing the valve spring with the valve spring compressor and the valve spring compressor attachment “2”.



Valve spring compressor

90890-04019

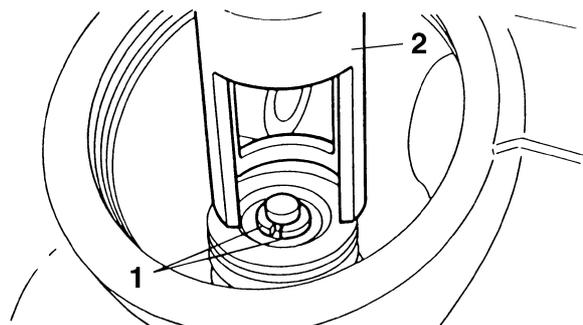
YM-04019

Valve spring compressor attachment

90890-04108

Valve spring compressor adapter 22 mm

YM-04108

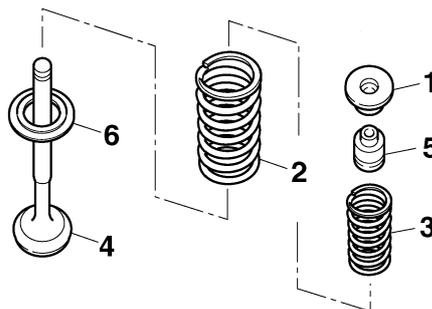


3. Remove:

- Upper spring seat “1”
- Outer valve spring “2”
- Inner valve spring “3”
- Valve “4”
- Valve stem seal “5”
- Lower spring seat “6”

TIP

Identify the position of each part very carefully so that it can be reinstalled in its original place.



EAS24290

CHECKING THE VALVES AND VALVE GUIDES

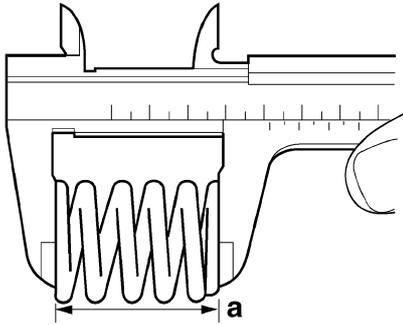
The following procedure applies to all of the valves and valve guides.

1. Measure:

- Valve-stem-to-valve-guide clearance
Out of specification → Replace the valve guide.

$$\begin{aligned} &\bullet \text{ Valve-stem-to-valve-guide clearance} = \\ &\text{Valve guide inside diameter "a"} - \\ &\text{Valve stem diameter "b"} \end{aligned}$$

VALVES AND VALVE SPRINGS (YP250R)

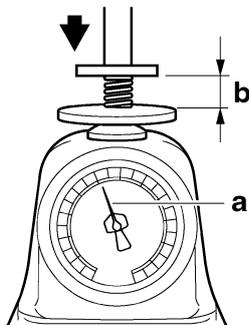


2. Measure:
- Compressed valve spring force "a"
Out of specification → Replace the valve spring.



Inner spring
Installed compression spring force (intake)
 76–88 N (7.75–8.97 kgf, 17.08–19.78 lbf)
Installed compression spring force (exhaust)
 76–88 N (7.75–8.97 kgf, 17.08–19.78 lbf)
Installed length (intake)
 30.10 mm (1.19 in)
Installed length (exhaust)
 30.10 mm (1.19 in)

Outer spring
Installed compression spring force (intake)
 115–133 N (11.73–13.56 kgf, 25.85–29.90 lbf)
Installed compression spring force (exhaust)
 115–133 N (11.73–13.56 kgf, 25.85–29.90 lbf)
Installed length (intake)
 31.60 mm (1.24 in)
Installed length (exhaust)
 31.60 mm (1.24 in)



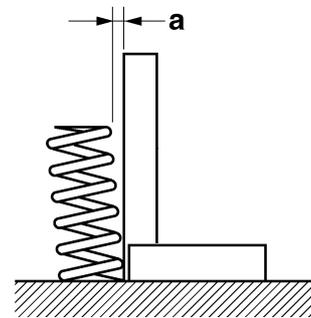
b. Installed length

3. Measure:
- Valve spring tilt "a"
Out of specification → Replace the valve spring.



Inner spring
Spring tilt (intake)
 2.5°/1.7 mm
Spring tilt (exhaust)
 2.5°/1.7 mm

Outer spring
Spring tilt (intake)
 2.5°/1.6 mm
Spring tilt (exhaust)
 2.5°/1.6 mm

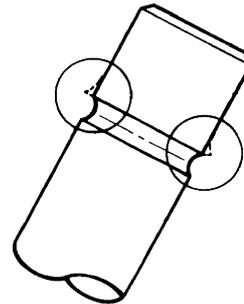


EAS24340

INSTALLING THE VALVES

The following procedure applies to all of the valves and related components.

1. Deburr:
- Valve stem end
(with an oil stone)

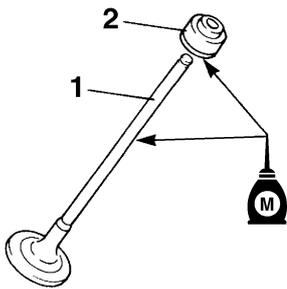


2. Lubricate:
- Valve stem "1"
 - Valve stem seal "2"
(with the recommended lubricant)



Recommended lubricant
Molybdenum disulfide oil

VALVES AND VALVE SPRINGS (YP250R)



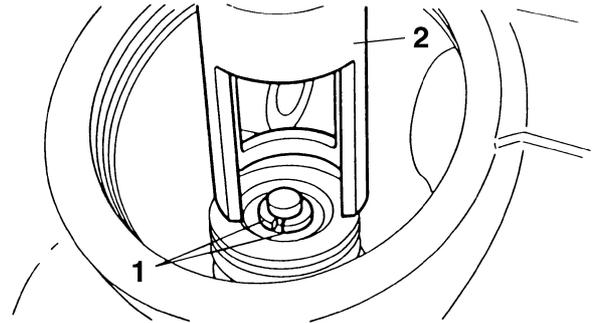
Valve spring compressor
90890-04019
YM-04019
Valve spring compressor attachment
90890-04108
Valve spring compressor adapter 22 mm
YM-04108

3. Install:

- Lower spring seat "1"
- Valve stem seal "2" **New**
- Valve "3"
- Inner valve spring "4"
- Outer valve spring "5"
- Upper spring seat "6"
(into the cylinder head)

TIP

- Make sure each valve is installed in its original place.
- Install the valve springs with the larger pitch "a" facing up.

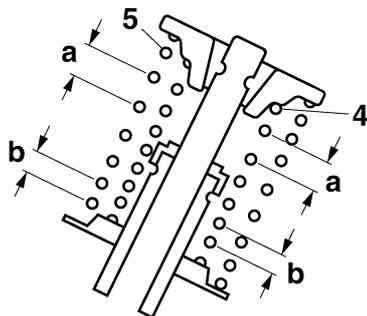
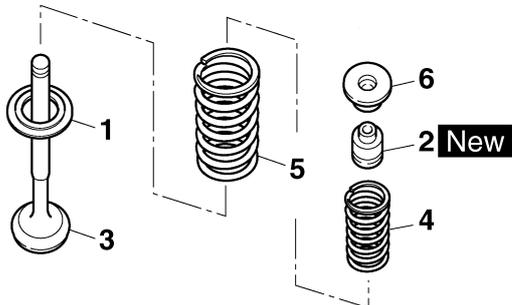


5. To secure the valve cotters onto the valve stem, lightly tap the valve tip with a soft-face hammer.

ECA13800

NOTICE

Hitting the valve tip with excessive force could damage the valve.



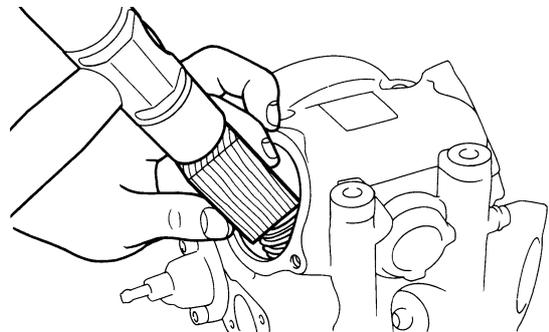
b. Smaller pitch

4. Install:

- Valve cotters "1"

TIP

Install the valve cotters by compressing the valve spring with the valve spring compressor and the valve spring compressor attachment "2".

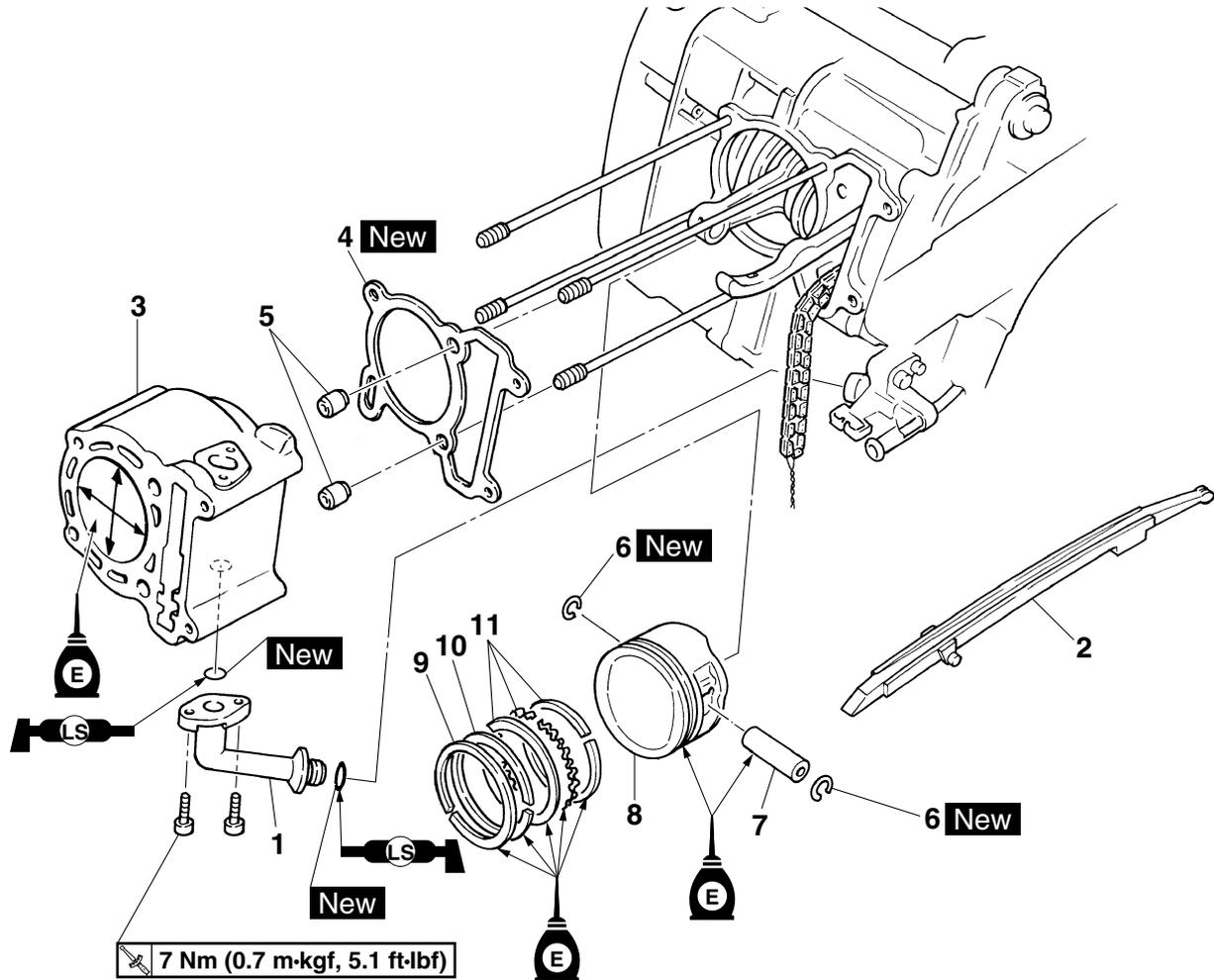


CYLINDER AND PISTON (YP250R)

EAS24350

CYLINDER AND PISTON (YP250R)

Removing the cylinder and piston



Order	Job/Parts to remove	Q'ty	Remarks
	Cylinder head		Refer to "CYLINDER HEAD (YP250R)" on page 5-67.
1	Water pump outlet pipe	1	
2	Timing chain guide (exhaust side)	1	
3	Cylinder	1	
4	Cylinder gasket	1	
5	Dowel pin	2	
6	Clip	2	
7	Piston pin	1	
8	Piston	1	
9	Top ring	1	
10	2nd ring	1	
11	Oil ring	1	
			For installation, reverse the removal procedure.

CYLINDER AND PISTON (YP250R)

EAS24380

REMOVING THE PISTON

- Remove:
 - Piston pin clips "1"
 - Piston pin "2"
 - Piston "3"

ECA13810

NOTICE

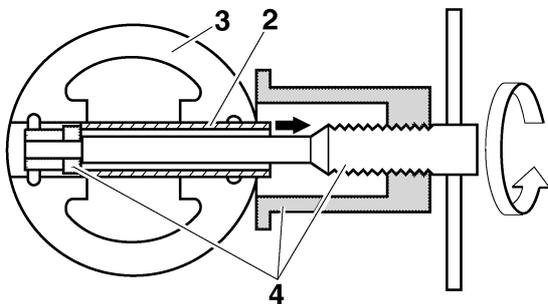
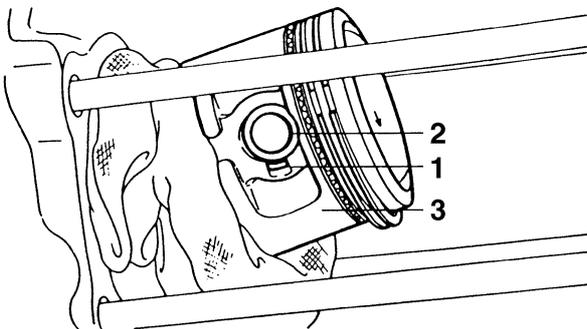
Do not use a hammer to drive the piston pin out.

TIP

- Before removing the piston pin clips, cover the crankcase opening with a clean rag to prevent them from falling into the crankcase.
- Before removing the piston pin, deburr the piston pin clip groove and the piston pin bore area. If both areas are deburred and the piston pin is still difficult to remove, remove it with the piston pin puller set "4".



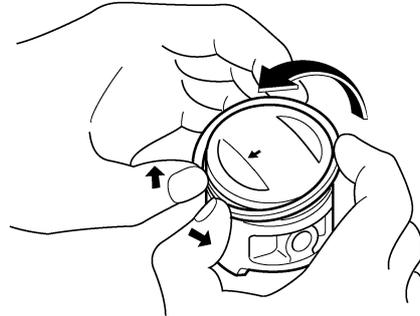
**Piston pin puller set
90890-01304
Piston pin puller
YU-01304**



- Remove:
 - Top ring
 - 2nd ring
 - Oil ring

TIP

When removing a piston ring, open the end gap with your fingers and lift the other side of the ring over the piston crown.



EAS24390

CHECKING THE CYLINDER AND PISTON

- Check:

- Piston wall
- Cylinder wall

Vertical scratches → Rebore or replace the cylinder, and replace the piston and piston rings as a set.

- Measure:

- Piston-to-cylinder clearance

- Measure cylinder bore "C" with the cylinder bore gauge.

TIP

Measure cylinder bore "C" by taking side-to-side and front-to-back measurements of the cylinder. Then, find the average of the measurements.



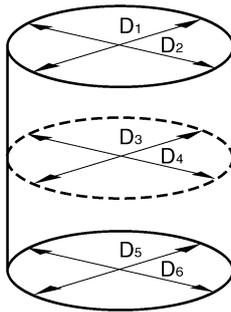
Bore
69.000–69.005 mm (2.7165–
2.7167 in)
Taper limit
0.030 mm (0.0012 in)
Out of round limit
0.030 mm (0.0012 in)

"C" = maximum of D_1 – D_2

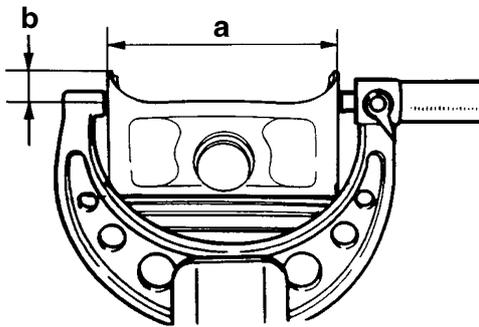
"T" = maximum of D_1 or D_2 - maximum of D_5
or D_6

"R" = maximum of D_1 , D_3 or D_5 - minimum of
 D_2 , D_4 or D_6

CYLINDER AND PISTON (YP250R)



- b. If out of specification, rebores or replace the cylinder, and replace the piston and piston rings as a set.
- c. Measure piston skirt diameter D "a" with the micrometer.



- b. 5 mm (0.20 in) from the bottom edge of the piston

Piston Diameter D
68.965–68.980 mm (2.7152–2.7157 in)

- d. If out of specification, replace the piston and piston rings as a set.
- e. Calculate the piston-to-cylinder clearance with the following formula.

- Piston-to-cylinder clearance =
Cylinder bore "C" -
Piston skirt diameter "D"

Piston-to-cylinder clearance
0.020–0.040 mm (0.0008–0.0016 in)
Limit
0.15 mm (0.0059 in)

- f. If out of specification, rebores or replace the cylinder, and replace the piston and piston rings as a set.



EAS24430

CHECKING THE PISTON RINGS

1. Measure:

- Piston ring side clearance
Out of specification → Replace the piston and piston rings as a set.

TIP

Before measuring the piston ring side clearance, eliminate any carbon deposits from the piston ring grooves and piston rings.



Piston ring

Top ring

Ring side clearance
0.040–0.080 mm (0.0016–0.0031 in)

Limit

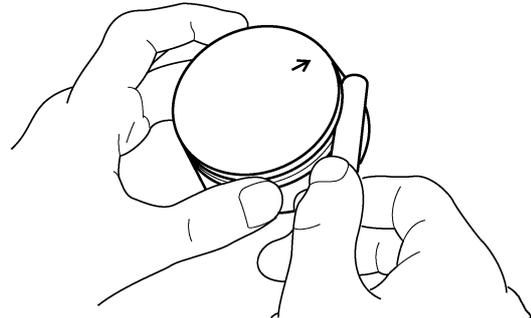
0.130 mm (0.0051 in)

2nd ring

Ring side clearance
0.030–0.070 mm (0.0012–0.0028 in)

Limit

0.130 mm (0.0051 in)

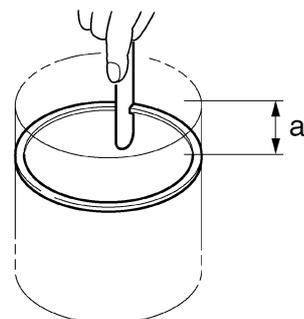


2. Install:

- Piston ring
(into the cylinder)

TIP

Level the piston ring into the cylinder with the piston crown.



- a. 5 mm (0.20 in)

CYLINDER AND PISTON (YP250R)

3. Measure:

- Piston ring end gap
Out of specification → Replace the piston ring.

TIP

The oil ring expander spacer end gap cannot be measured. If the oil ring rail gap is excessive, replace all three piston rings.



Piston ring

Top ring

End gap (installed)
0.15–0.30 mm (0.0059–0.0118 in)

Limit
0.55 mm (0.0217 in)

2nd ring

End gap (installed)
0.30–0.45 mm (0.0118–0.0177 in)

Limit
0.80 mm (0.0315 in)

Oil ring

End gap (installed)
0.20–0.70 mm (0.0079–0.0276 in)

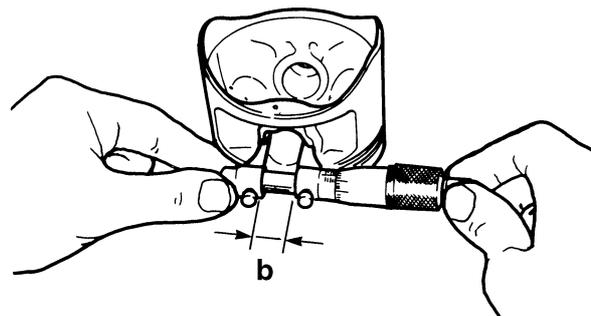
3. Measure:

- Piston pin bore diameter “b”
Out of specification → Replace the piston.



Piston pin bore inside diameter
17.004–17.015 mm (0.6694–0.6699 in)

Limit
17.045 mm (0.6711 in)



4. Calculate:

- Piston-pin-to-piston-pin-bore clearance
Out of specification → Replace the piston pin and piston as a set.

• Piston-pin-to-piston-pin-bore clearance =
Piston pin bore diameter “b” -
Piston pin outside diameter “a”



Piston-pin-to-piston-pin-bore clearance

0.004–0.024 mm (0.0002–0.0009 in)

EAS24440

CHECKING THE PISTON PIN

1. Check:

- Piston pin
Blue discoloration/grooves → Replace the piston pin, and then check the lubrication system.

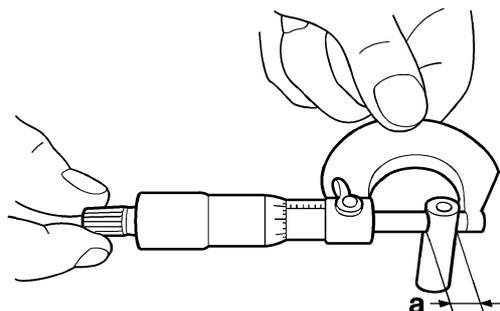
2. Measure:

- Piston pin outside diameter “a”
Out of specification → Replace the piston pin.



Piston pin outside diameter
16.991–17.000 mm (0.6689–0.6693 in)

Limit
16.971 mm (0.6681 in)



EAS37P1065

CHECKING THE TIMING CHAIN GUIDE

1. Check:

- Timing chain guide (exhaust side)
Damage/wear → Replace.

EAS24450

INSTALLING THE PISTON AND CYLINDER

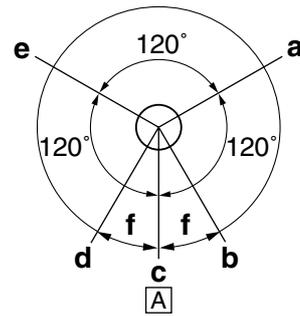
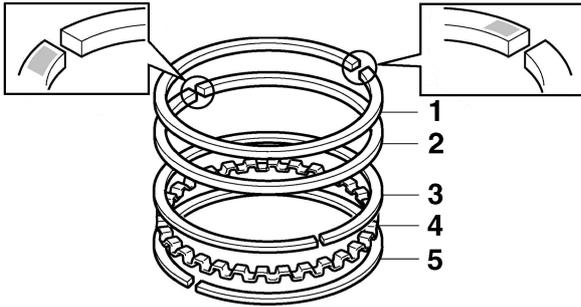
1. Install:

- Top ring “1”
- 2nd ring “2”
- Upper oil ring rail “3”
- Oil ring expander “4”
- Lower oil ring rail “5”

TIP

Be sure to install the piston rings so that the manufacturer marks or numbers face up.

CYLINDER AND PISTON (YP250R)



2. Install:

- Piston “1”
- Piston pin “2”
- Piston pin clips “3” **New**

TIP

- Apply engine oil to the piston pin.
- Make sure the arrow mark “a” on the piston points towards the exhaust side of the cylinder.
- Before installing the piston pin clips, cover the crankcase opening with a clean rag to prevent the clips from falling into the crankcase.

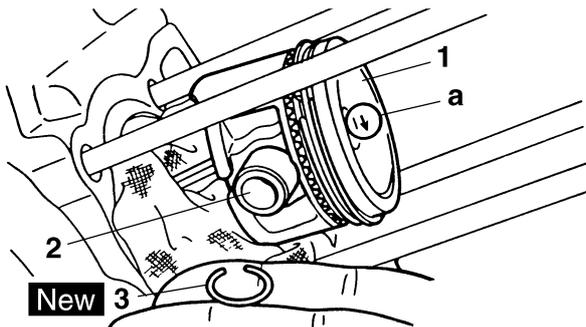
- a. Top ring
- b. Upper oil ring rail
- c. Oil ring expander
- d. Lower oil ring rail
- e. 2nd ring
- f. 20 mm (0.79 in)
- A. Intake side

5. Install:

- Dowel pins
- Cylinder gasket **New**
- Cylinder

TIP

- While compressing the piston rings with one hand, install the cylinder with the other hand.
- Pass the timing chain and timing chain guide (intake side) through the timing chain cavity.



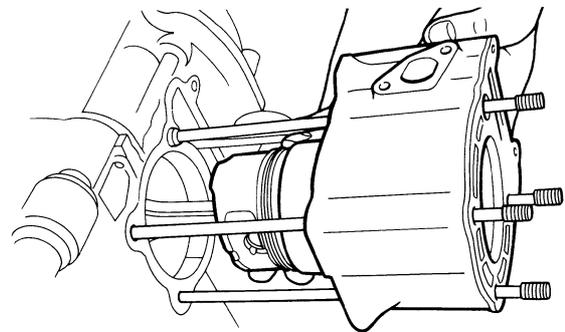
3. Lubricate:

- Piston
- Piston rings
- Cylinder
(with the recommended lubricant)



4. Offset:

- Piston ring end gaps

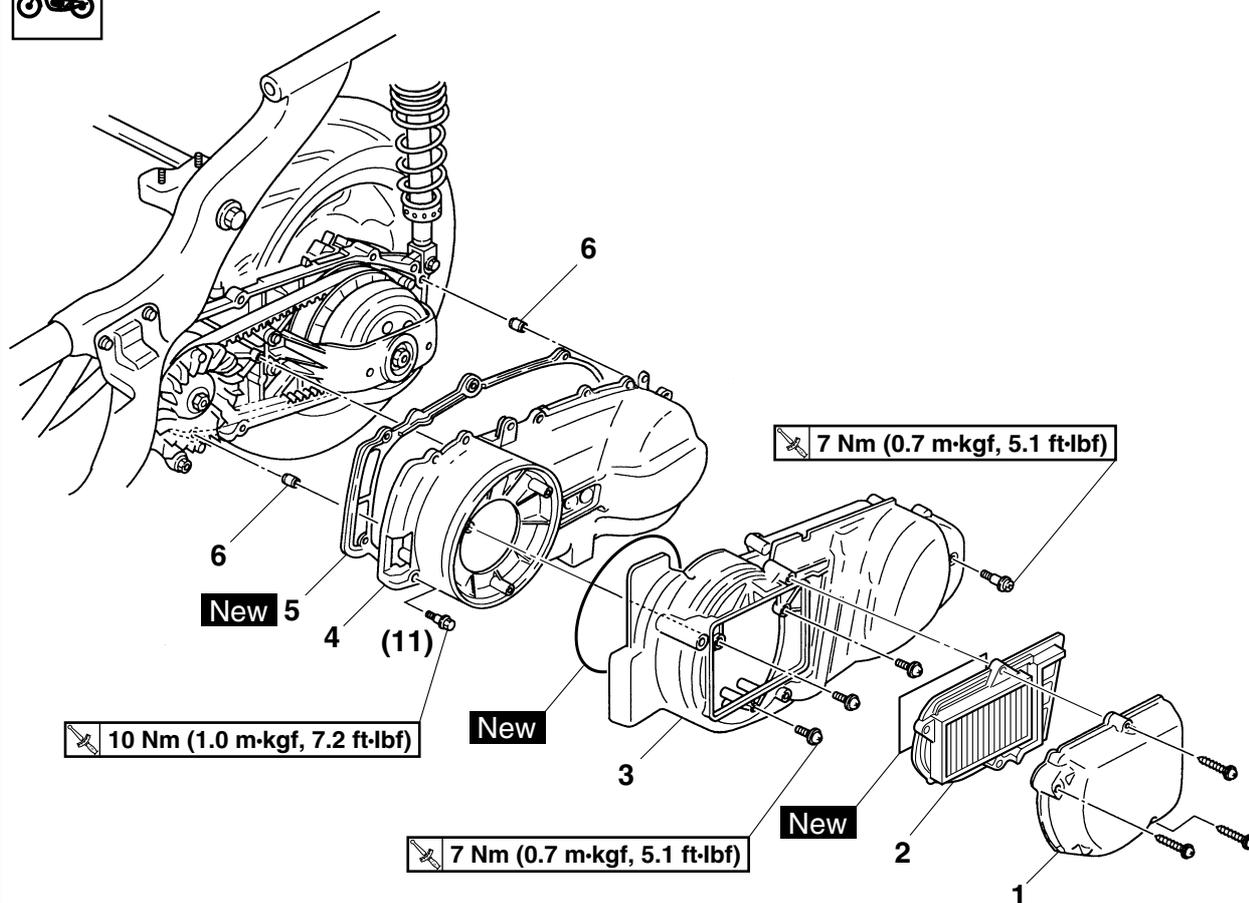


V-BELT AUTOMATIC TRANSMISSION (YP250R)

EAS24610

V-BELT AUTOMATIC TRANSMISSION (YP250R)

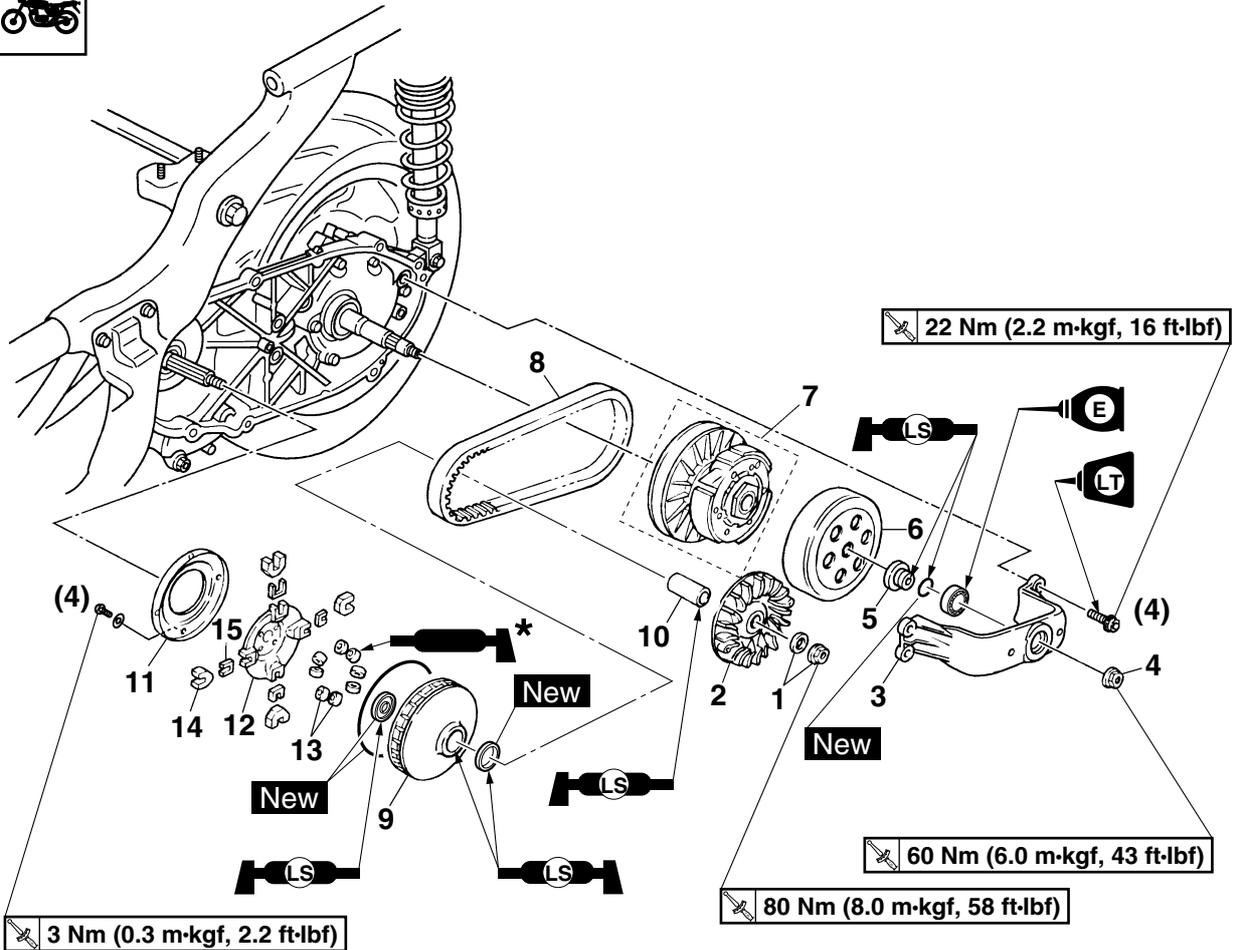
Removing the V-belt case cover



Order	Job/Parts to remove	Q'ty	Remarks
	Air filter case		Refer to "GENERAL CHASSIS" on page 4-1.
1	V-belt case air filter cover	1	
2	V-belt case air filter element	1	
3	V-belt case cover	1	
4	V-belt case	1	
5	V-belt case gasket	1	
6	Dowel pin	2	
			For installation, reverse the removal procedure.

V-BELT AUTOMATIC TRANSMISSION (YP250R)

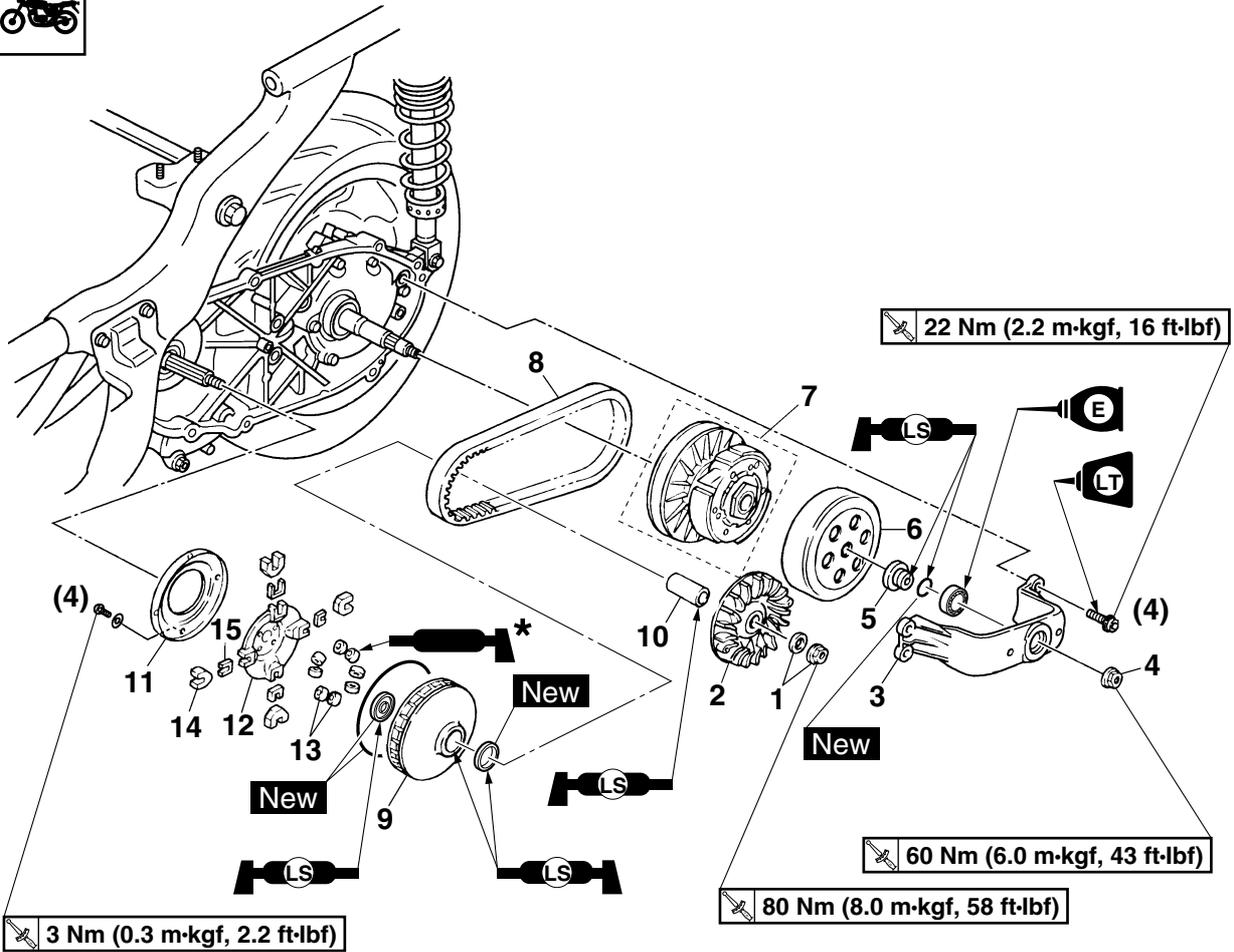
Removing the V-belt, primary sheave and secondary sheave



Order	Job/Parts to remove	Q'ty	Remarks
1	Primary sheave nut/washer	1/1	
2	Primary fixed sheave	1	
3	Secondary sheave bracket	1	
4	Secondary sheave nut	1	
5	Spacer	1	
6	Clutch housing	1	
7	Secondary sheave assembly	1	
8	V-belt	1	
9	Primary sliding sheave	1	
10	Spacer	1	
11	Primary sheave cap	1	
12	Cam	1	
13	Weight	8	
14	Slider	4	

V-BELT AUTOMATIC TRANSMISSION (YP250R)

Removing the V-belt, primary sheave and secondary sheave



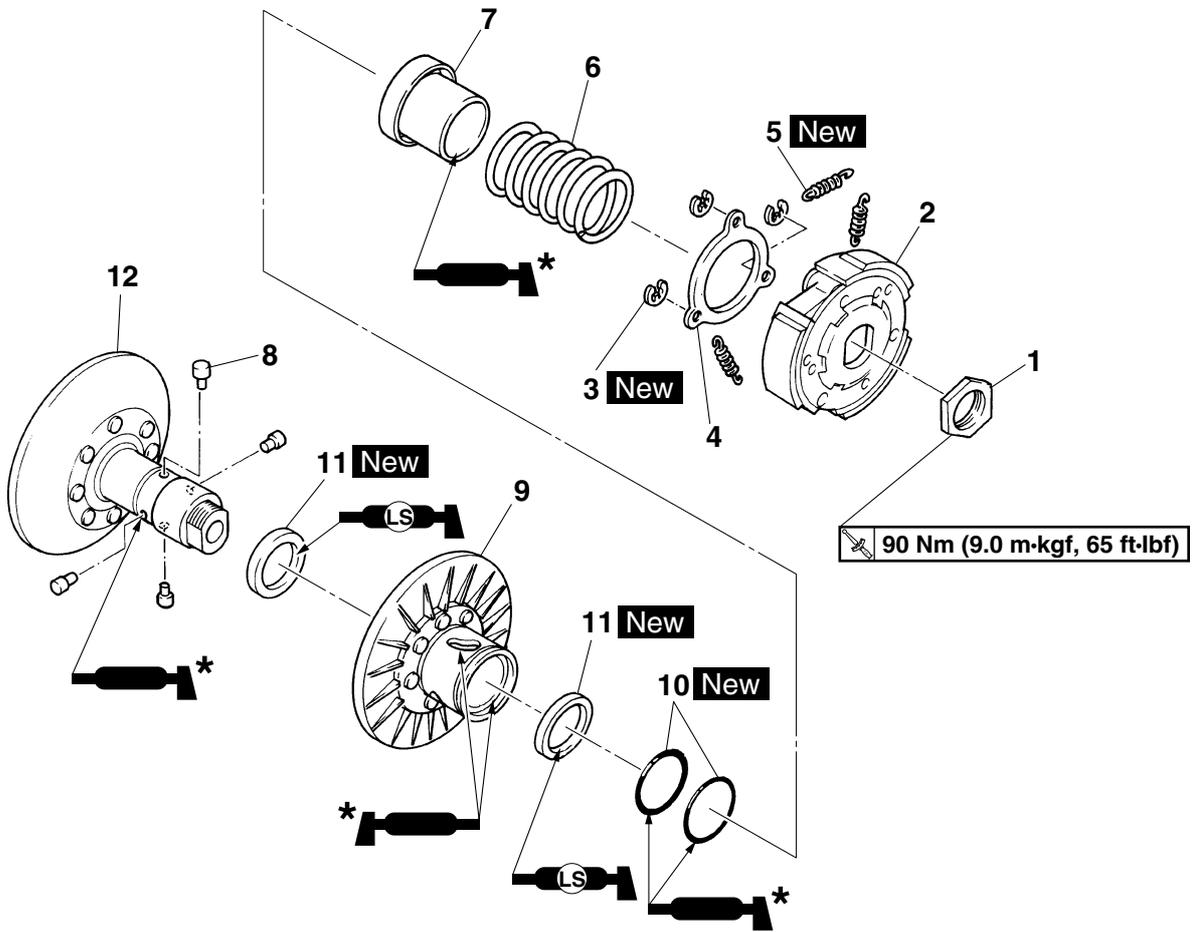
Order	Job/Parts to remove	Q'ty	Remarks
15	Spacer	4	
			For installation, reverse the removal procedure.

* Apply Shell BT grease 3® (Yamaha grease G 90793-40016).

**Yamaha grease G
90793-40016**

V-BELT AUTOMATIC TRANSMISSION (YP250R)

Disassembling the secondary sheave



Order	Job/Parts to remove	Q'ty	Remarks
1	Clutch carrier nut	1	
2	Clutch carrier	1	
3	Clip	3	
4	Clutch carrier plate	1	
5	Clutch shoe spring	3	
6	Compression spring	1	
7	Spring seat	1	
8	Guide pin	4	
9	Secondary sliding sheave	1	
10	O-ring	2	
11	Oil seal	2	
12	Secondary fixed sheave	1	
			For assembly, reverse the disassembly procedure.

* Apply BEL-RAY assembly lube®.

V-BELT AUTOMATIC TRANSMISSION (YP250R)

EAS24620

REMOVING THE PRIMARY SHEAVE

1. Remove:
 - V-belt case

TIP

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

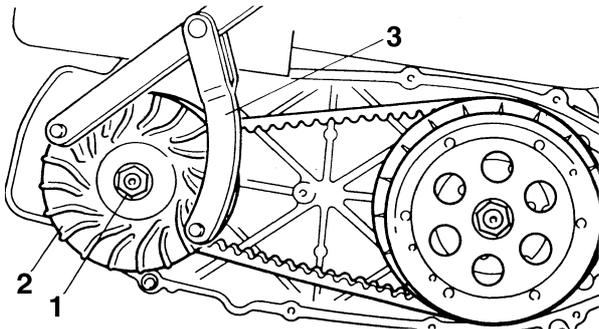
2. Remove:
 - Primary sheave nut "1"
 - Washer
 - Primary fixed sheave "2"

TIP

While holding the primary fixed sheave with the rotor holding tool "3", loosen the primary sheave nut.



Rotor holding tool
90890-01235
Universal magneto & rotor holder
YU-01235



EAS24630

REMOVING THE SECONDARY SHEAVE

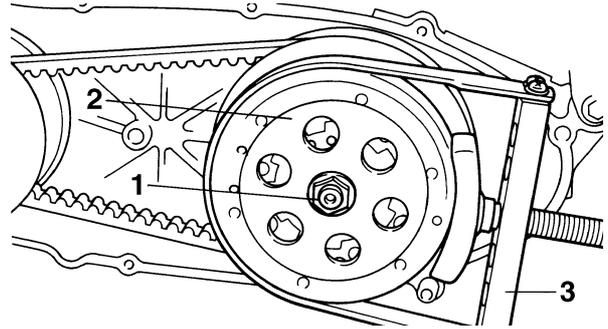
1. Remove:
 - Secondary sheave nut "1"
 - Spacer
 - Clutch housing "2"

TIP

While holding the clutch housing with the sheave holder "3", loosen the secondary sheave nut.



Sheave holder
90890-01701
Primary clutch holder
YS-01880-A



2. Loosen:
 - Clutch carrier nut "1"

ECA13860

NOTICE

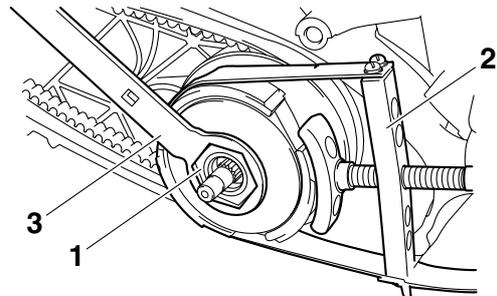
Do not remove the clutch carrier nut at this stage.

TIP

While holding the clutch carrier with the sheave holder "2", loosen the clutch carrier nut one full turn with the locknut wrench "3".



Sheave holder
90890-01701
Primary clutch holder
YS-01880-A
Locknut wrench
90890-01348
YM-01348

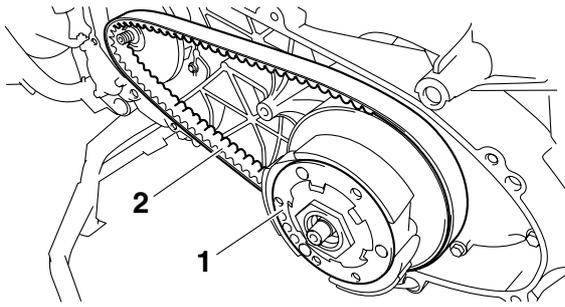


3. Remove:
 - Secondary sheave assembly "1"
 - V-belt "2"

TIP

Remove the V-belt and secondary sheave assembly from the primary sheave side.

V-BELT AUTOMATIC TRANSMISSION (YP250R)



EAS24640

DISASSEMBLING THE SECONDARY SHEAVE

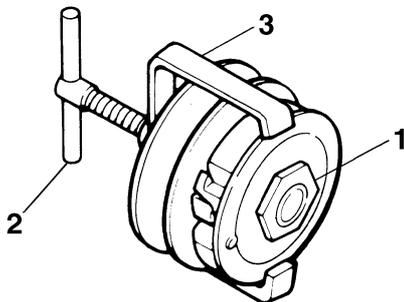
- Remove:
 - Clutch carrier nut "1"

TIP

While compressing the compression spring with the clutch spring holder "2" and clutch spring holder arm "3", remove the clutch carrier nut.



Clutch spring holder
90890-01337
Clutch spring holder arm
90890-01464



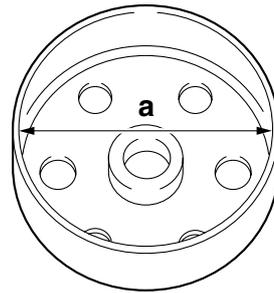
EAS24650

CHECKING THE CLUTCH HOUSING

- Check:
 - Clutch housing
Damage/wear → Replace.
- Measure:
 - Clutch housing inside diameter "a"
Out of specification → Replace the clutch housing.



Clutch housing inside diameter
145.0 mm (5.71 in)
Limit
145.5 mm (5.73 in)



EAS24660

CHECKING THE CLUTCH SHOES

The following procedure applies to all of the clutch shoes.

- Check:
 - Clutch shoe
Damage/wear → Replace the clutch shoes and springs as a set.
Glazed areas → Sand with coarse sandpaper.

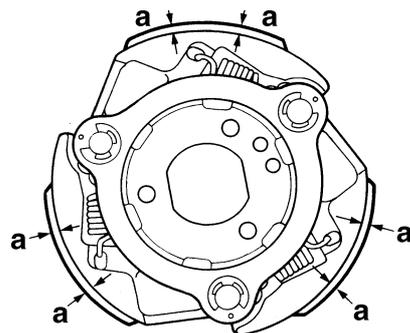
TIP

After sanding the glazed areas, clean the clutch with a cloth.

- Measure:
 - Clutch shoe thickness "a"
Out of specification → Replace the clutch shoes and springs as a set.



Clutch shoe thickness
3.3 mm (0.13 in)
Wear limit
2.0 mm (0.08 in)



EAS24670

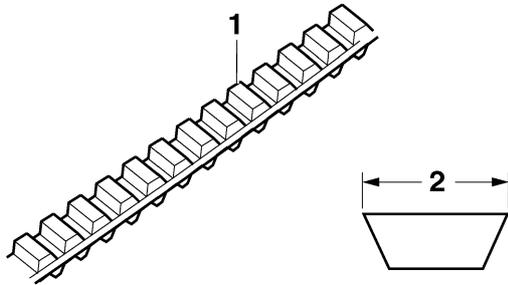
CHECKING THE V-BELT

- Check:
 - V-belt "1"
Cracks/damage/wear → Replace.
Grease/oil → Clean the primary and secondary sheave.
- Measure:
 - V-belt width "2"
Out of specification → Replace.

V-BELT AUTOMATIC TRANSMISSION (YP250R)



V-belt width
23.0 mm (0.91 in)
Limit
21.0 mm (0.83 in)



EAS24680

CHECKING THE PRIMARY SHEAVE

- Check:
 - Primary sliding sheave
 - Primary fixed sheave
 - Spacer

Cracks/damage/wear → Replace the primary sliding sheave and primary fixed sheave as a set.

EAS24690

CHECKING THE PRIMARY SHEAVE WEIGHTS

The following procedure applies to all of the primary sheave weights.

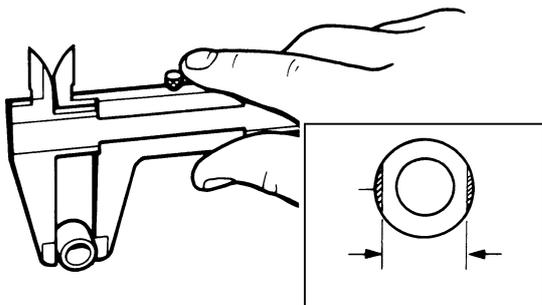
- Check:
 - Primary sheave weight

Cracks/damage/wear → Replace.
- Measure:
 - Primary sheave weight outside diameter

Out of specification → Replace.



Weight outside diameter
20.0 mm (0.79 in)
Limit
19.5 mm (0.77 in)



EAS24700

CHECKING THE PRIMARY SHEAVE SLIDERS

- Check:
 - Primary sheave slider

Cracks/damage/wear → Replace.

EAS24710

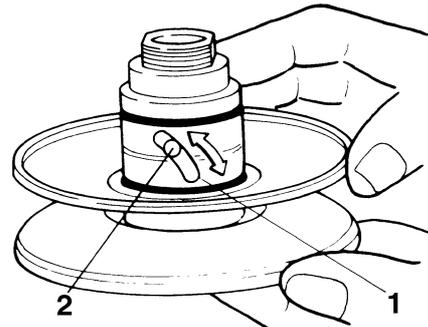
CHECKING THE SECONDARY SHEAVE

- Check:
 - Secondary fixed sheave
 - Secondary sliding sheave

Cracks/damage/wear → Replace the secondary fixed and sliding sheaves as a set.
- Check:
 - Torque cam groove "1"

Damage/wear → Replace the secondary fixed and sliding sheaves as a set.
- Check:
 - Guide pin "2"

Damage/wear → Replace the secondary fixed and sliding sheaves as a set.

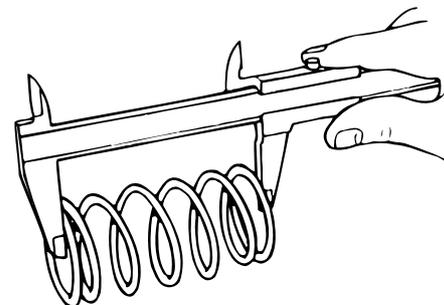


- Check:
 - Spring free length

Out of specification → Replace the spring.



Compression spring free length
102.4 mm (4.03 in)
Limit
90.0 mm (3.54 in)



EAS24720

ASSEMBLING THE PRIMARY SHEAVE

- Clean:
 - Primary fixed sheave

V-BELT AUTOMATIC TRANSMISSION (YP250R)

- Primary sliding sheave
- Spacer
- Primary sheave weights
- Cam

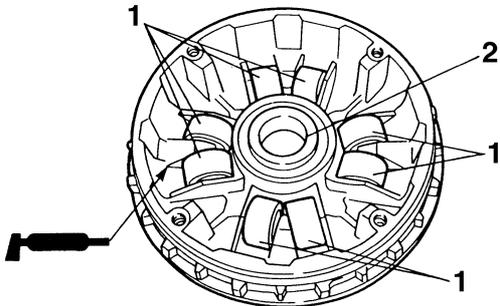
2. Install:

- Primary sheave weights "1"
- Spacer "2"

TIP

Before installing the primary sheave weights, lubricate the inside and outside of each weight with Shell BT grease 3®.

	Recommended lubricant Shell BT grease 3®
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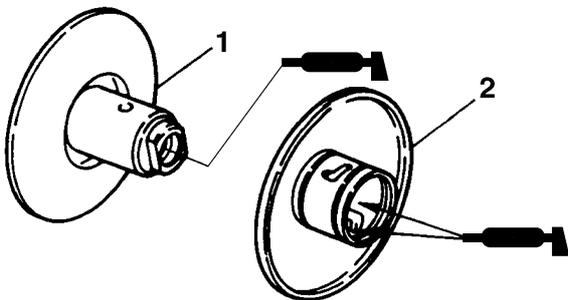
EAS24730

ASSEMBLING THE SECONDARY SHEAVE

1. Lubricate:

- Secondary fixed sheave's inner surface "1"
- Secondary sliding sheave's inner surface "2"
- Oil seals
- Bearing
(with the recommended lubricant)

	Recommended lubricant BEL-RAY assembly lube®
---	--



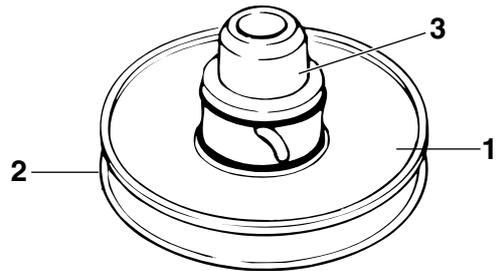
2. Install:

- Oil seals **New**
- Secondary sliding sheave "1"

TIP

Install the secondary sliding sheave onto the secondary fixed sheave "2" with the oil seal guide "3".

	Oil seal guide (ø41) 90890-01396
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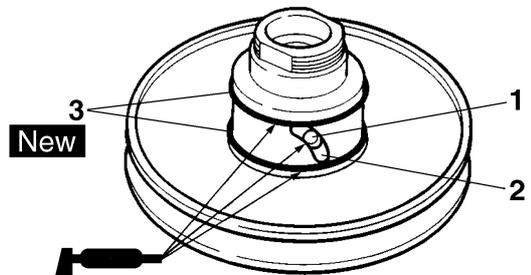
3. Install:

- Guide pins "1"

4. Lubricate:

- Guide pin grooves "2"
- O-rings "3" **New**
(with the recommended lubricant)

	Recommended lubricant BEL-RAY assembly lube®
---	--



5. Install:

- Spring seat
- Compression spring
- Spacer
- Clutch carrier "1"
- Clutch carrier nut "2"

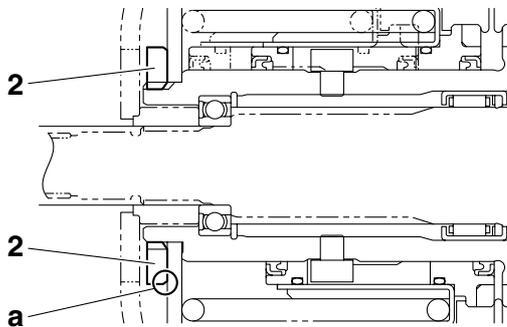
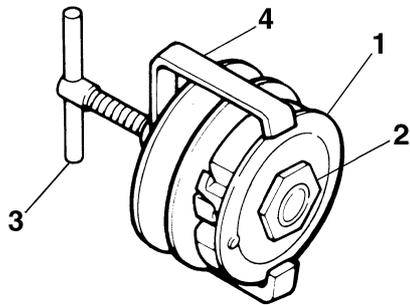
TIP

- While compressing the compression spring with the clutch spring holder "3" and clutch spring holder arm "4", install the clutch carrier nut.
- Install the clutch carrier nut "2" with its tapered side "a" facing the clutch carrier.

V-BELT AUTOMATIC TRANSMISSION (YP250R)



Clutch spring holder
90890-01337
Clutch spring holder arm
90890-01464



EAS24740

INSTALLING THE V-BELT

1. Install:
 - V-belt "1"
 - Secondary sheave assembly "2"

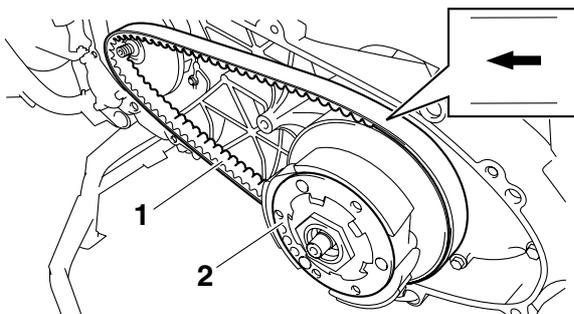
ECA37P1011

NOTICE

Do not allow grease to come in contact with the V-belt or secondary sheave assembly.

TIP

- Install the V-belt with the printed arrow mark on the V-belt facing in the direction shown in the illustration.
- Install the V-belt onto the primary sheave side.



2. Tighten:
 - Clutch carrier nut "1"



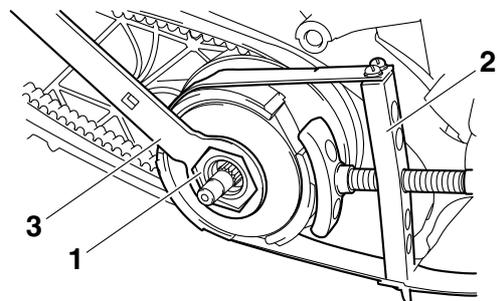
Clutch carrier nut
90 Nm (9.0 m·kgf, 65 ft·lbf)

TIP

While holding the clutch carrier with the sheave holder "2", tighten the clutch carrier nut with the locknut wrench "3".



Sheave holder
90890-01701
Primary clutch holder
YS-01880-A
Locknut wrench
90890-01348
YM-01348



3. Install:
 - Clutch housing "1"
 - Spacer
 - Secondary sheave nut "2"



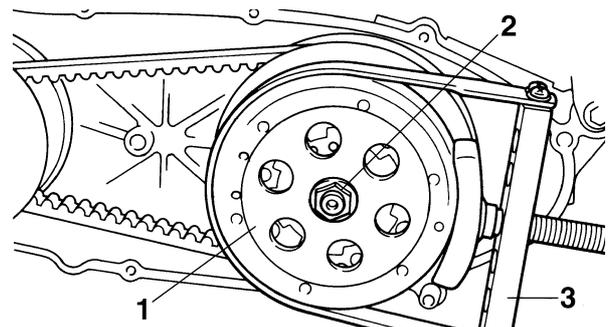
Secondary sheave nut
60 Nm (6.0 m·kgf, 43 ft·lbf)

TIP

While holding the clutch housing with the sheave holder "3", tighten the secondary sheave nut.



Sheave holder
90890-01701
Primary clutch holder
YS-01880-A



V-BELT AUTOMATIC TRANSMISSION (YP250R)

4. Install:

- V-belt “1”
- Primary fixed sheave “2”
- Washer
- Primary sheave nut “3”

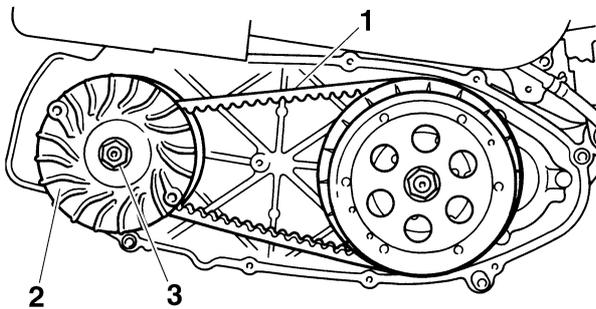
ECA37P1012

NOTICE

Do not allow grease to contact the primary sheave assembly.

TIP

Install the V-belt in the primary sheave (when the pulley is at its widest position) and in the secondary sheave (when the pulley is at its narrowest position), and make sure the V-belt is tight.



5. Tighten:

- Primary sheave nut “1”



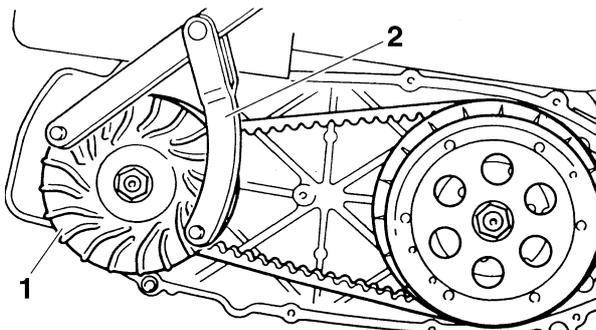
**Primary sheave nut
80 Nm (8.0 m-kgf, 58 ft-lbf)**

TIP

While holding the primary fixed sheave with the rotor holding tool “2”, tighten the primary sheave nut.



**Rotor holding tool
90890-01235
Universal magneto & rotor holder
YU-01235**



6. Install:

- V-belt case

TIP

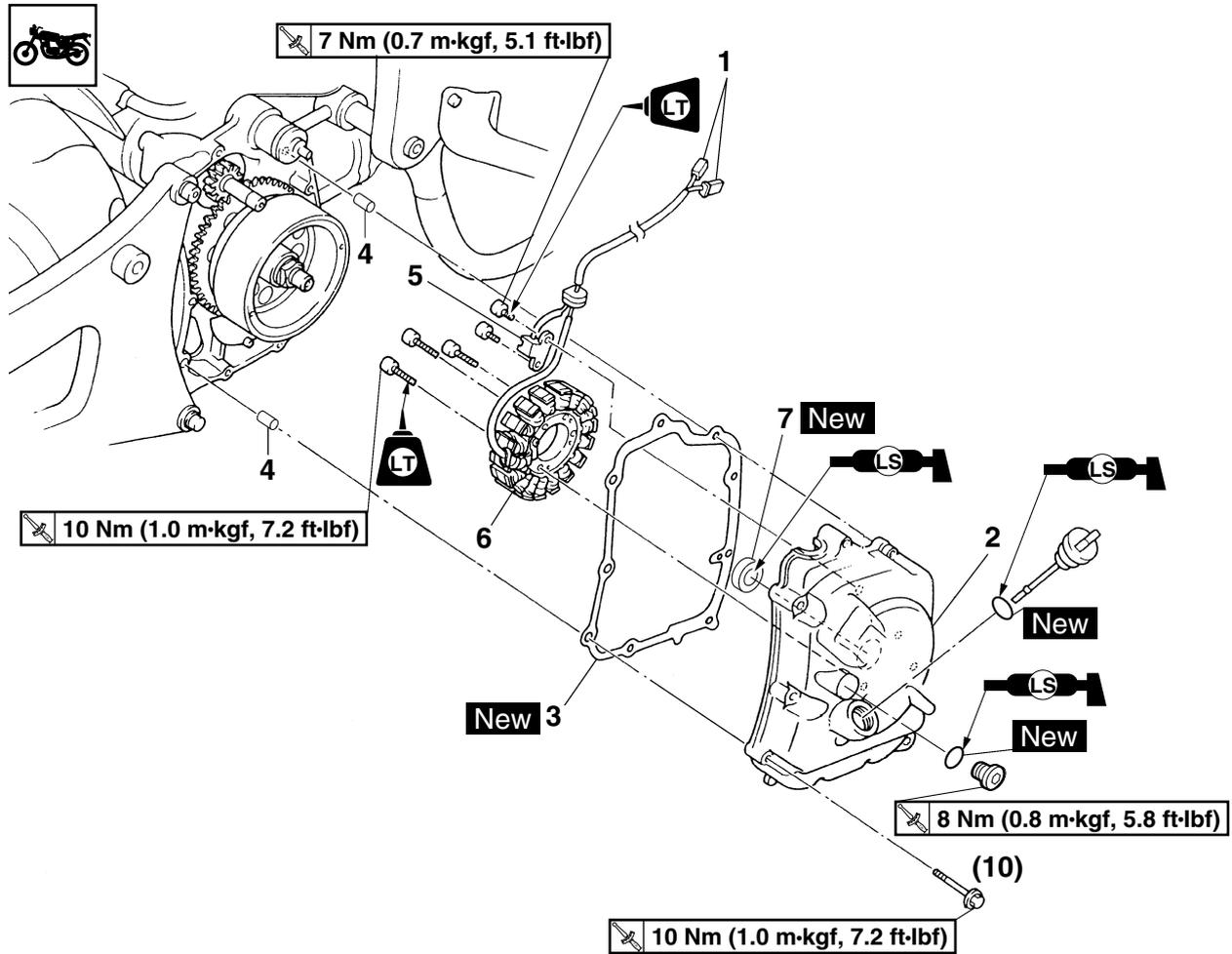
- Make sure that the V-belt case gasket lip fits properly around the V-belt case.
- Tighten the V-belt case bolts in stages and in a crisscross pattern.

STARTER CLUTCH AND GENERATOR (YP250R)

EAS24480

STARTER CLUTCH AND GENERATOR (YP250R)

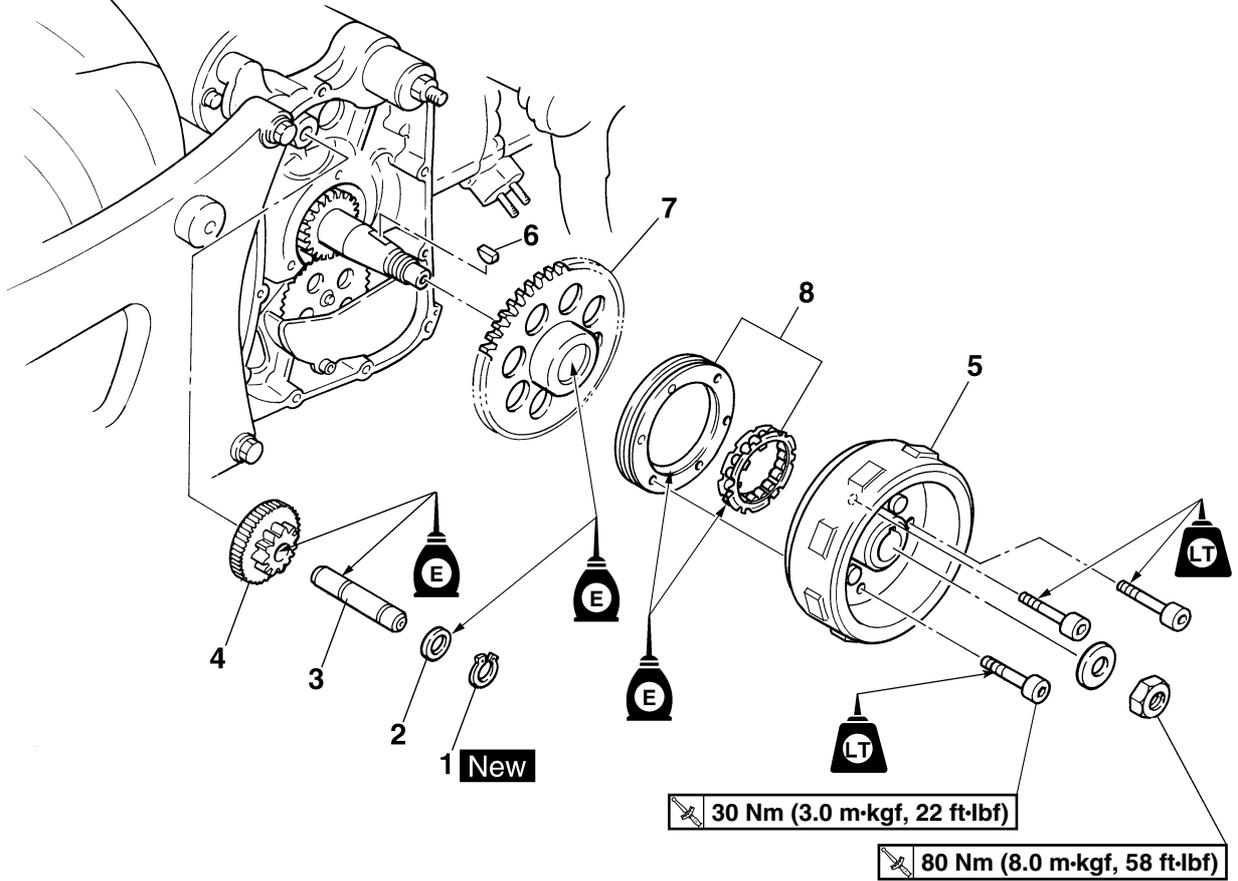
Removing the generator cover and stator coil



Order	Job/Parts to remove	Q'ty	Remarks
	Engine oil		Drain. Refer to "CHANGING THE ENGINE OIL" on page 3-27.
	Muffler/Exhaust pipe		Refer to "ENGINE REMOVAL (YP250R)" on page 5-61.
1	Crankshaft position sensor coupler/Stator assembly coupler	1/1	Disconnect.
2	Generator cover	1	
3	Generator cover gasket	1	
4	Dowel pin	2	
5	Crankshaft position sensor	1	
6	Stator coil	1	
7	Oil seal	1	
			For installation, reverse the removal procedure.

STARTER CLUTCH AND GENERATOR (YP250R)

Removing the generator rotor and starter clutch



Order	Job/Parts to remove	Q'ty	Remarks
1	Circlip	1	
2	Washer	1	
3	Starter clutch idle gear shaft	1	
4	Starter clutch idle gear	1	
5	Generator rotor	1	
6	Woodruff key	1	
7	Starter clutch gear	1	
8	Starter clutch	1	
			For installation, reverse the removal procedure.

STARTER CLUTCH AND GENERATOR (YP250R)

EAS24490

REMOVING THE GENERATOR

1. Remove:

- Generator cover

TIP

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

2. Remove:

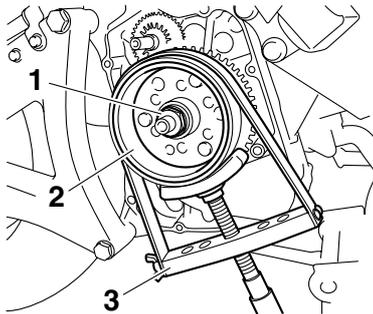
- Generator rotor nut "1"
- Washer

TIP

- While holding the generator rotor "2" with the sheave holder "3", loosen the generator rotor nut.
- Do not allow the sheave holder to touch the projection on the generator rotor.



Sheave holder
90890-01701
Primary clutch holder
YS-01880-A



3. Remove:

- Generator rotor "1"
(with the flywheel puller "2")
- Woodruff key

ECA37P1005

NOTICE

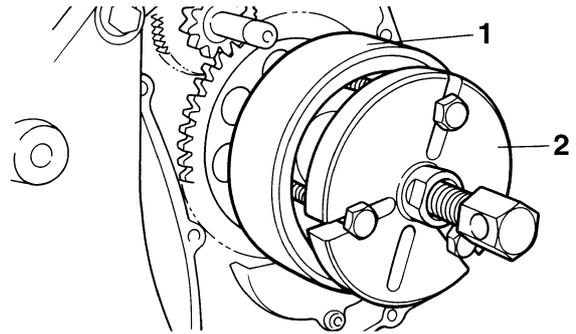
To protect the end of the crankshaft, place an appropriate sized socket between the flywheel puller set center bolt and the crankshaft.

TIP

Make sure the flywheel puller is centered over the generator rotor.



Flywheel puller
90890-01362
Heavy duty puller
YU-33270-B



EAS24560

REMOVING THE STARTER CLUTCH

1. Remove:

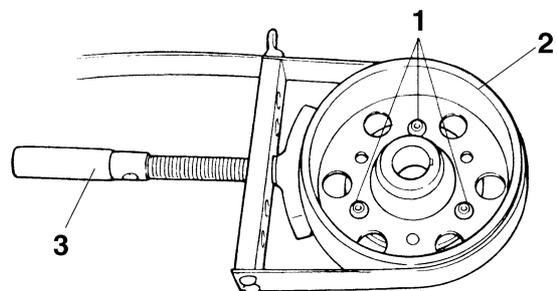
- Starter clutch bolts "1"
- Starter clutch

TIP

- While holding the generator rotor "2" with the sheave holder "3", remove the starter clutch bolts.
- Do not allow the sheave holder to touch the projection on the generator rotor.



Sheave holder
90890-01701
Primary clutch holder
YS-01880-A

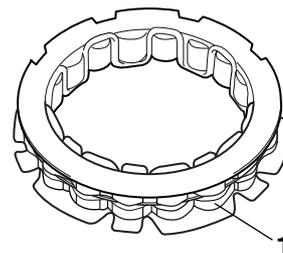


EAS24570

CHECKING THE STARTER CLUTCH

1. Check:

- Starter clutch rollers "1"
Damage/wear → Replace.

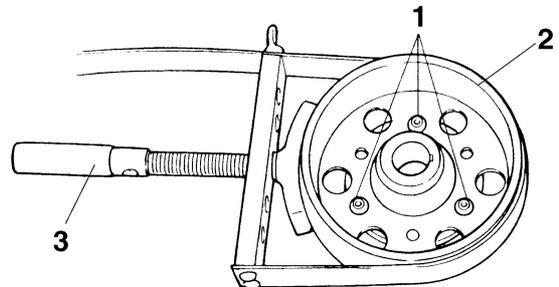


STARTER CLUTCH AND GENERATOR (YP250R)

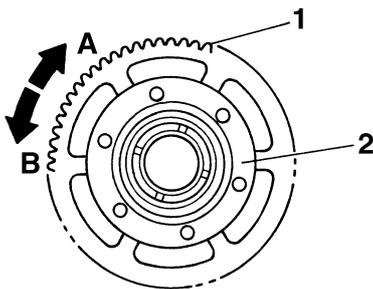
2. Check:
 - Starter clutch idle gear
 - Starter clutch gear
Burrs/chips/roughness/wear → Replace the defective part(s).
3. Check:
 - Starter clutch gear's contact surfaces
Damage/pitting/wear → Replace the starter clutch gear.
4. Check:
 - Starter clutch operation



Sheave holder
90890-01701
Primary clutch holder
YS-01880-A



-
- a. Install the starter clutch gear "1" onto the starter clutch "2" and hold the starter clutch.
 - b. When turning the starter clutch gear clockwise "A", the starter clutch and the starter clutch gear should engage, otherwise the starter clutch is faulty and must be replaced.
 - c. When turning the starter clutch gear counter-clockwise "B", it should turn freely, otherwise the starter clutch is faulty and must be replaced.



EAS24500

INSTALLING THE GENERATOR

1. Install:
 - Starter clutch gear
 - Woodruff key
 - Generator rotor
 - Washer
 - Generator rotor nut

TIP

- Clean the tapered portion of the crankshaft and the generator rotor hub.
- When installing the generator rotor, make sure the woodruff key is properly seated in the keyway of the crankshaft.
- Make sure that the blunt-edged corner of the washer is facing outward.

2. Tighten:
 - Generator rotor nut "1"



Generator rotor nut
80 Nm (8.0 m·kgf, 58 ft·lbf)

TIP

- While holding the generator rotor "2" with the sheave holder "3", tighten the generator rotor nut.
- Do not allow the sheave holder to touch the projection on the generator rotor.



Sheave holder
90890-01701
Primary clutch holder
YS-01880-A

EAS24600

INSTALLING THE STARTER CLUTCH

1. Install:
 - Starter clutch
 - Starter clutch bolts "1"

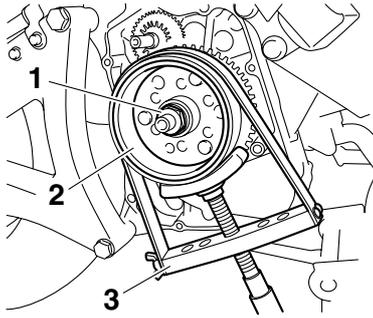


Starter clutch bolt
30 Nm (3.0 m·kgf, 22 ft·lbf)
LOCTITE®

TIP

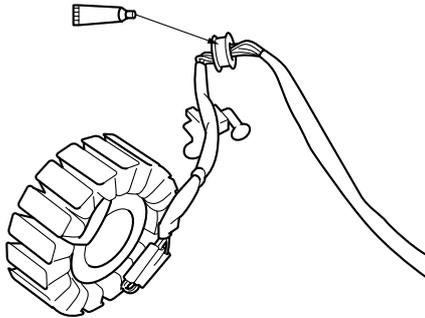
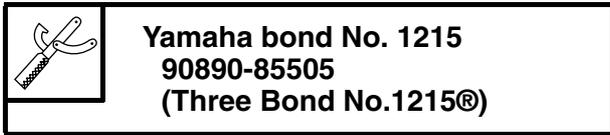
- While holding the generator rotor "2" with the sheave holder "3", tighten the starter clutch bolts.
- Do not allow the sheave holder to touch the projection on the generator rotor.

STARTER CLUTCH AND GENERATOR (YP250R)

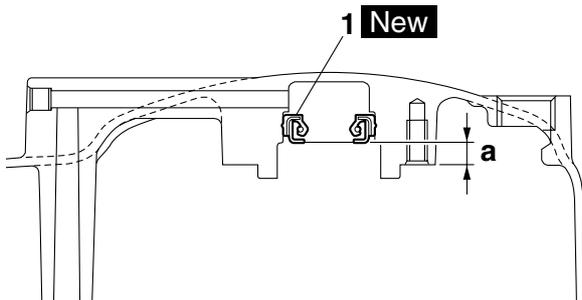
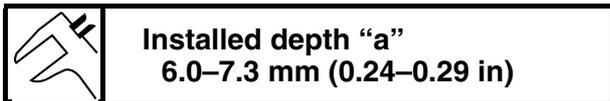


TIP _____
Tighten the generator cover bolts in stages and in a crisscross pattern.

3. Apply:
- Sealant
(onto the crankshaft position sensor/stator assembly lead grommet)



4. Install:
- Oil seal "1" **New**



5. Install:
- Generator cover



ELECTRIC STARTER (YP250R)

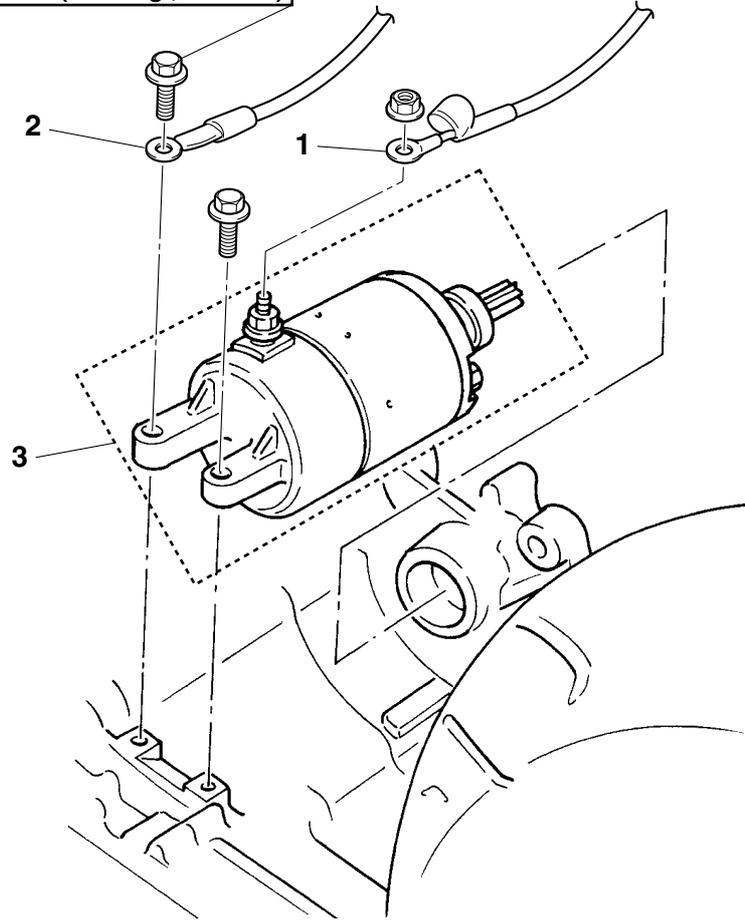
EAS24780

ELECTRIC STARTER (YP250R)

Removing the starter motor



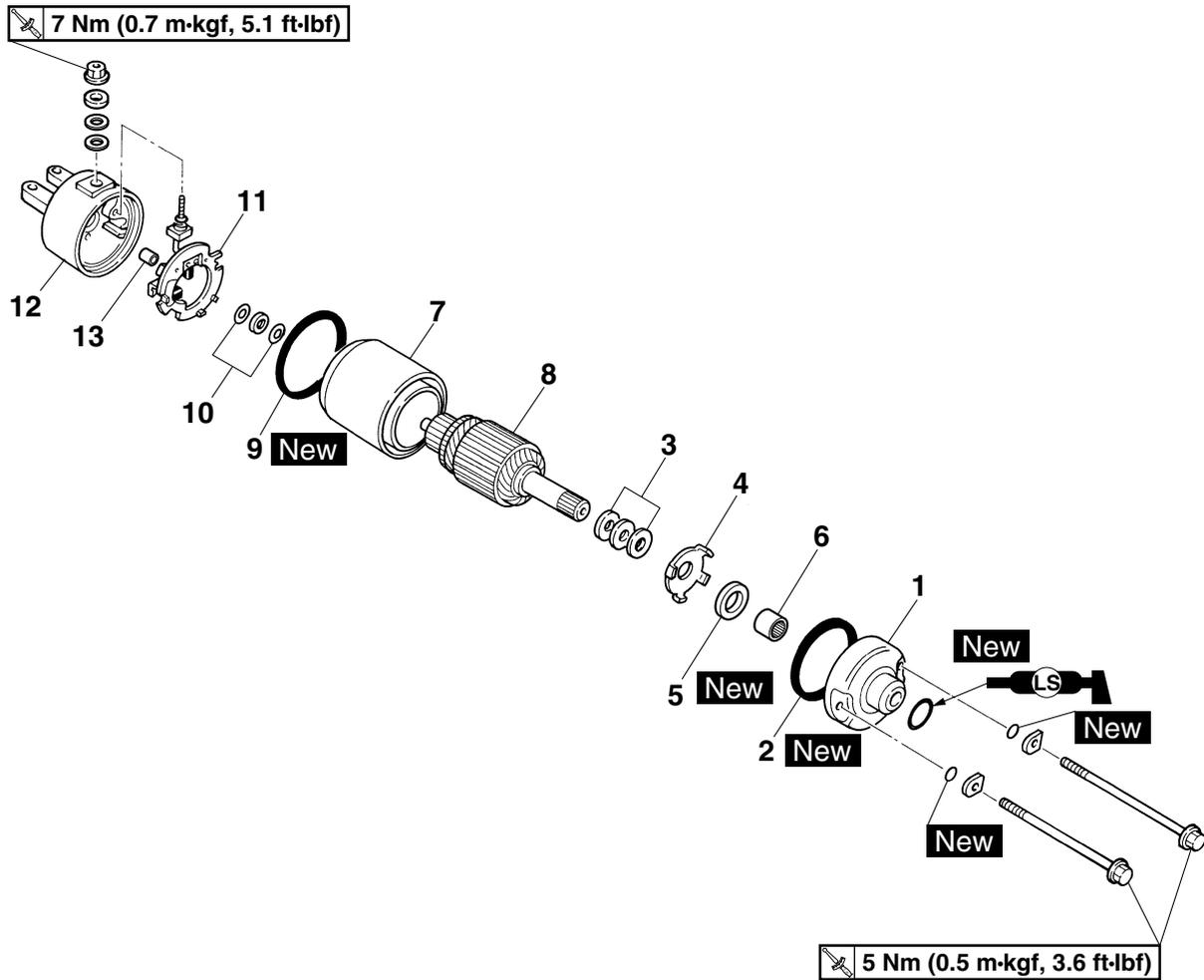
 7 Nm (0.7 m·kgf, 5.1 ft·lbf)



Order	Job/Parts to remove	Q'ty	Remarks
	Storage box/Air filter case		Refer to "GENERAL CHASSIS" on page 4-1.
1	Starter motor lead	1	Disconnect.
2	Ground lead	1	Disconnect.
3	Starter motor	1	
			For installation, reverse the removal procedure.

ELECTRIC STARTER (YP250R)

Disassembling the starter motor



Order	Job/Parts to remove	Q'ty	Remarks
1	Starter motor front cover	1	
2	O-ring	1	
3	Shim	*	
4	Lock washer	1	
5	Oil seal	1	
6	Bearing	1	
7	Starter motor yoke	1	
8	Armature assembly	1	
9	O-ring	1	
10	Shim	*	
11	Brush holder set	1	
12	Starter motor rear cover	1	
13	Bushing	1	
			For assembly, reverse the disassembly procedure.

ELECTRIC STARTER (YP250R)

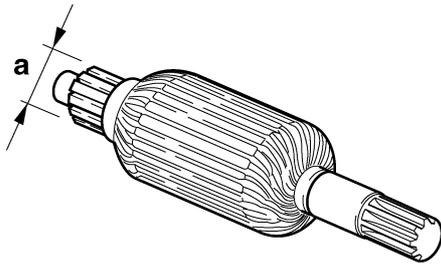
EAS24790

CHECKING THE STARTER MOTOR

1. Check:
 - Commutator
Dirt → Clean with 600 grit sandpaper.
2. Measure:
 - Commutator diameter “a”
Out of specification → Replace the starter motor.



Limit
22.4 mm (0.88 in)



3. Measure:
 - Mica undercut “a”
Out of specification → Scrape the mica to the proper measurement with a hacksaw blade that has been grounded to fit the commutator.



Mica undercut (depth)
1.00 mm (0.04 in)

TIP
The mica of the commutator must be undercut to ensure proper operation of the commutator.



4. Measure:
 - Armature assembly resistances (commutator and insulation)
Out of specification → Replace the starter motor.

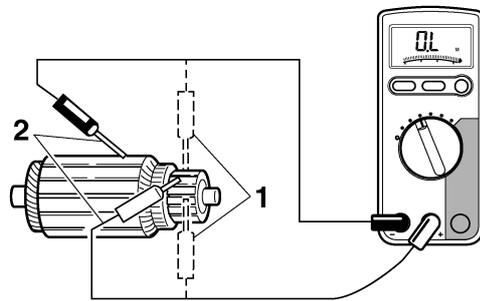
- a. Measure the armature assembly resistances with the digital circuit tester.



Digital circuit tester
90890-03174
Model 88 Multimeter with tachometer
YU-A1927



Armature coil
Commutator resistance “1”
Continuity (0.0100–0.0140 Ω at 20 °C (68 °F))
Insulation resistance “2”
No continuity (Above 1 MΩ at 20 °C (68 °F))



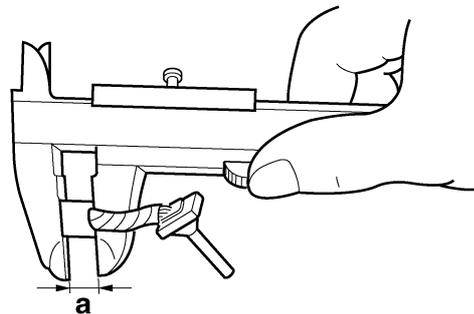
- b. If any resistance is out of specification, replace the starter motor.

5. Measure:

- Brush length “a”
Out of specification → Replace the brushes as a set.



Limit
3.00 mm (0.12 in)

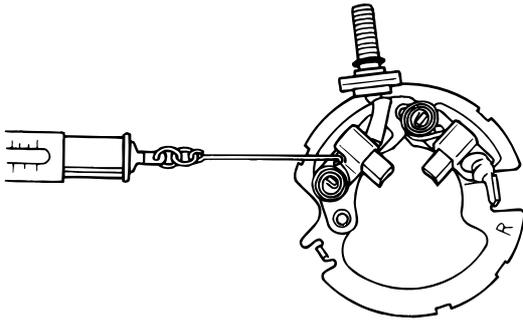


6. Measure:

- Brush spring force
Out of specification → Replace the brush springs as a set.



Brush spring force
7.75 N (790 gf, 27.90 oz)



7. Check:
 - Gear teeth
Damage/wear → Replace the gear.
8. Check:
 - Bearing
Damage/wear → Replace the bearing.

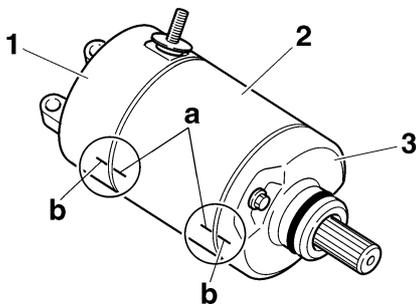
EAS24800

ASSEMBLING THE STARTER MOTOR

1. Install:
 - Starter motor rear cover "1"
 - Starter motor yoke "2"
 - Starter motor front cover "3"

TIP

Align the match marks "a" on the starter motor yoke with the match marks "b" on the starter motor front and rear covers.

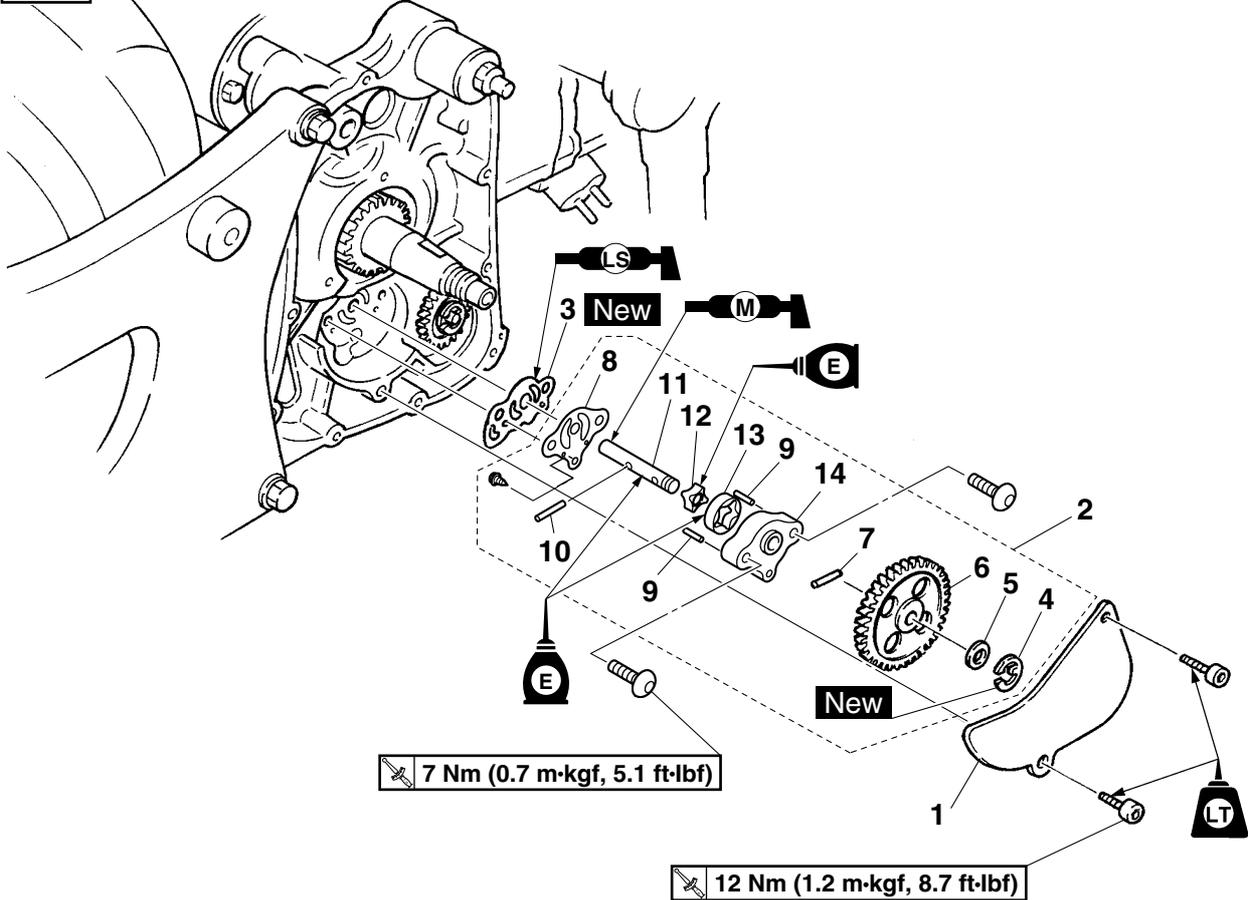


OIL PUMP (YP250R)

EAS24910

OIL PUMP (YP250R)

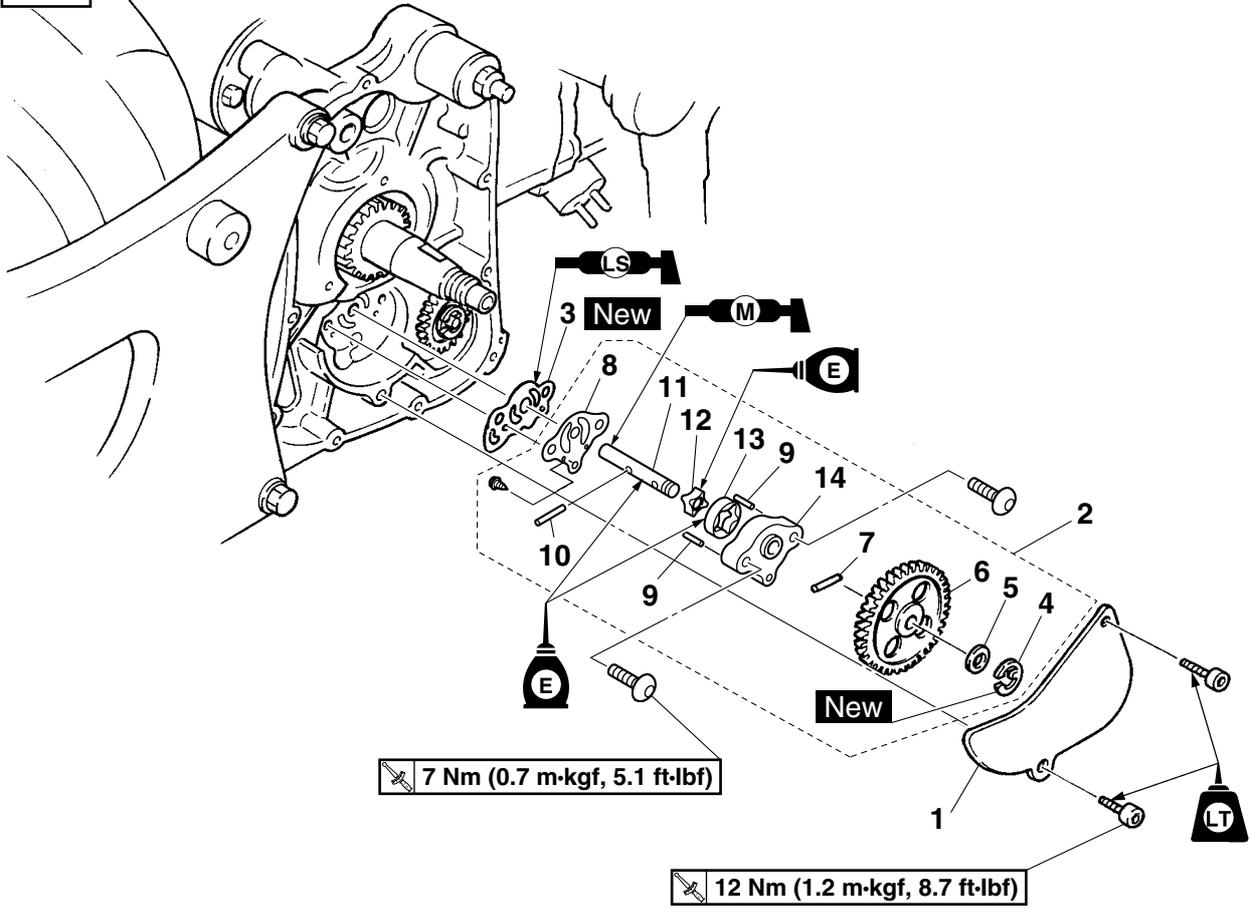
Removing the oil pump



Order	Job/Parts to remove	Q'ty	Remarks
	Starter clutch gear		Refer to "STARTER CLUTCH AND GENERATOR (YP250R)" on page 5-99.
1	Oil baffle plate	1	
2	Oil pump assembly	1	
3	Oil pump gasket	1	
4	Circlip	1	
5	Washer	1	
6	Oil pump driven gear	1	
7	Pin	1	
8	Oil pump housing cover	1	
9	Pin	2	
10	Pin	1	
11	Oil pump shaft	1	
12	Oil pump inner rotor	1	
13	Oil pump outer rotor	1	

OIL PUMP (YP250R)

Removing the oil pump



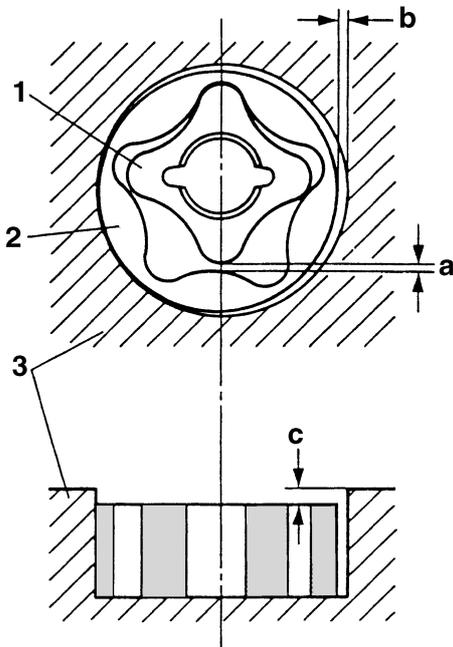
Order	Job/Parts to remove	Q'ty	Remarks
14	Oil pump housing	1	
			For installation, reverse the removal procedure.

OIL PUMP (YP250R)

EAS24960

CHECKING THE OIL PUMP

1. Check:
 - Oil pump drive gear
 - Oil pump driven gear
 - Oil pump housing
 - Oil pump housing cover
 Cracks/damage/wear → Replace the defective part(s).
2. Measure:
 - Inner-rotor-to-outer-rotor-tip clearance “a”
 - Outer-rotor-to-oil-pump-housing clearance “b”
 - Oil-pump-housing-to-inner-rotor-and-outer-rotor clearance “c”
 Out of specification → Replace the oil pump.

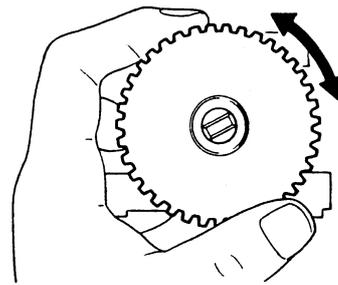


1. Inner rotor
2. Outer rotor
3. Oil pump housing



Inner-rotor-to-outer-rotor-tip clearance
Less than 0.15 mm (0.0059 in)
Limit
0.23 mm (0.0091 in)
Outer-rotor-to-oil-pump-housing clearance
0.013–0.036 mm (0.0005–0.0014 in)
Limit
0.106 mm (0.0042 in)
Oil-pump-housing-to-inner-and-outer-rotor clearance
0.04–0.09 mm (0.0016–0.0035 in)
Limit
0.16 mm (0.0063 in)

3. Check:
 - Oil pump operation
 Rough movement → Repeat steps (1) and (2) or replace the defective part(s).



EAS25000

ASSEMBLING THE OIL PUMP

1. Lubricate:
 - Inner rotor
 - Outer rotor



Recommended lubricant
Engine oil

2. Lubricate:
 - Oil pump shaft
(with the recommended lubricant)

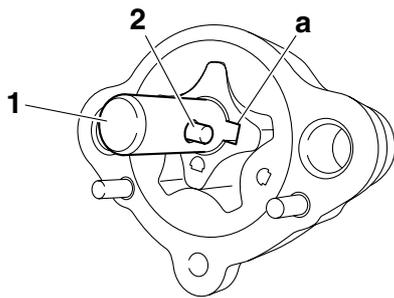


Recommended lubricant
Molybdenum disulfide grease

3. Install:
 - Oil pump shaft “1”
 - Pin “2”

TIP

When installing the oil pump shaft, align the pin in the oil pump shaft with the groove “a” in the inner rotor.



4. Check:
- Oil pump operation
Refer to “CHECKING THE OIL PUMP” on page 5-110.

EAS25020

INSTALLING THE OIL PUMP

1. Install:
- Oil pump assembly



Oil pump assembly bolt
7 Nm (0.7 m·kgf, 5.1 ft·lbf)

ECA13890

NOTICE

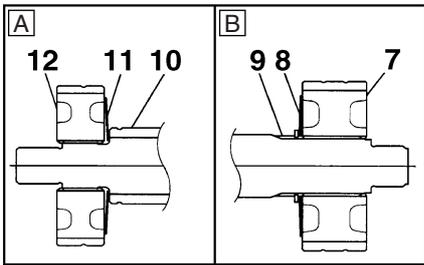
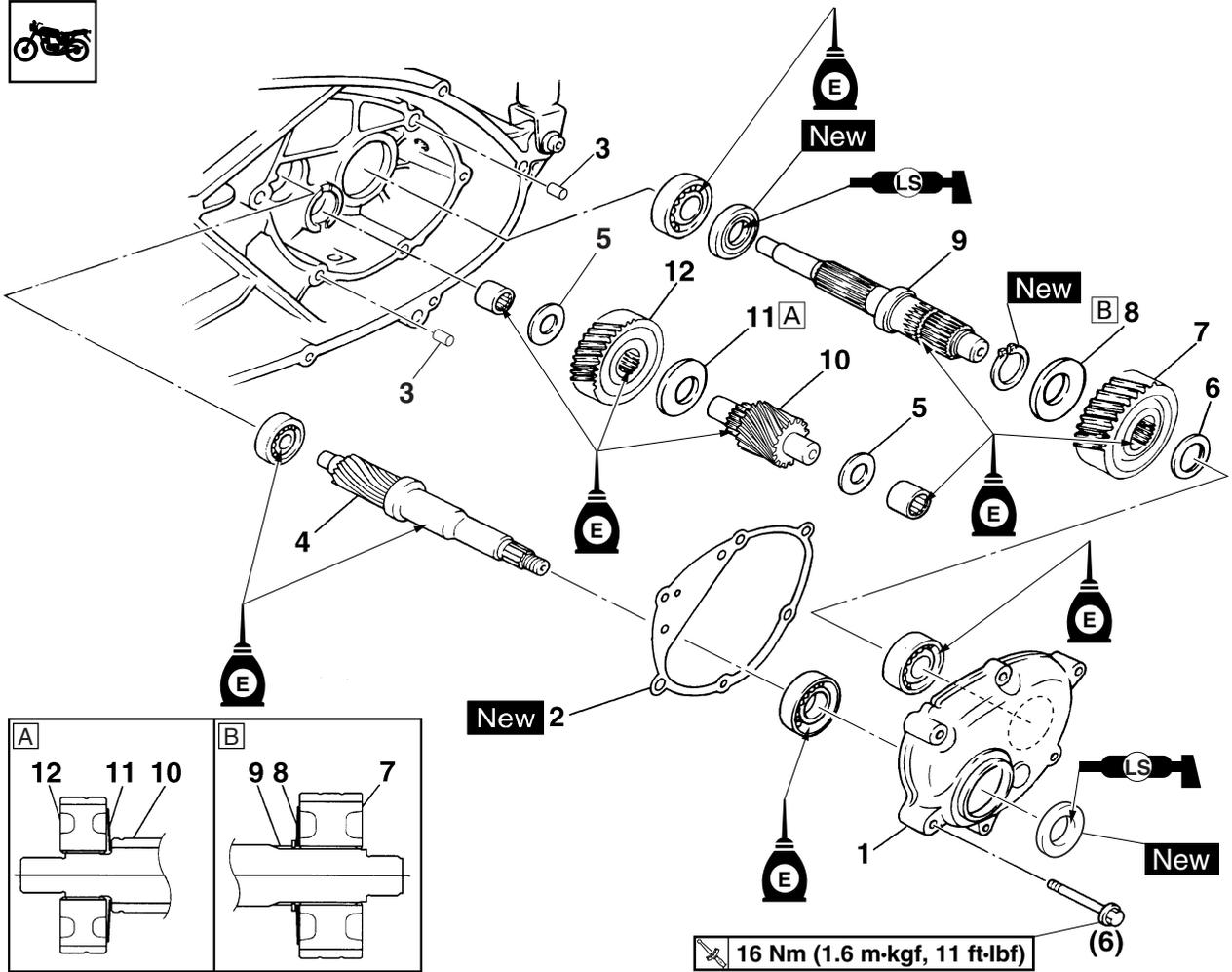
After tightening the bolts, make sure the oil pump turns smoothly.

TRANSMISSION (YP250R)

EAS26240

TRANSMISSION (YP250R)

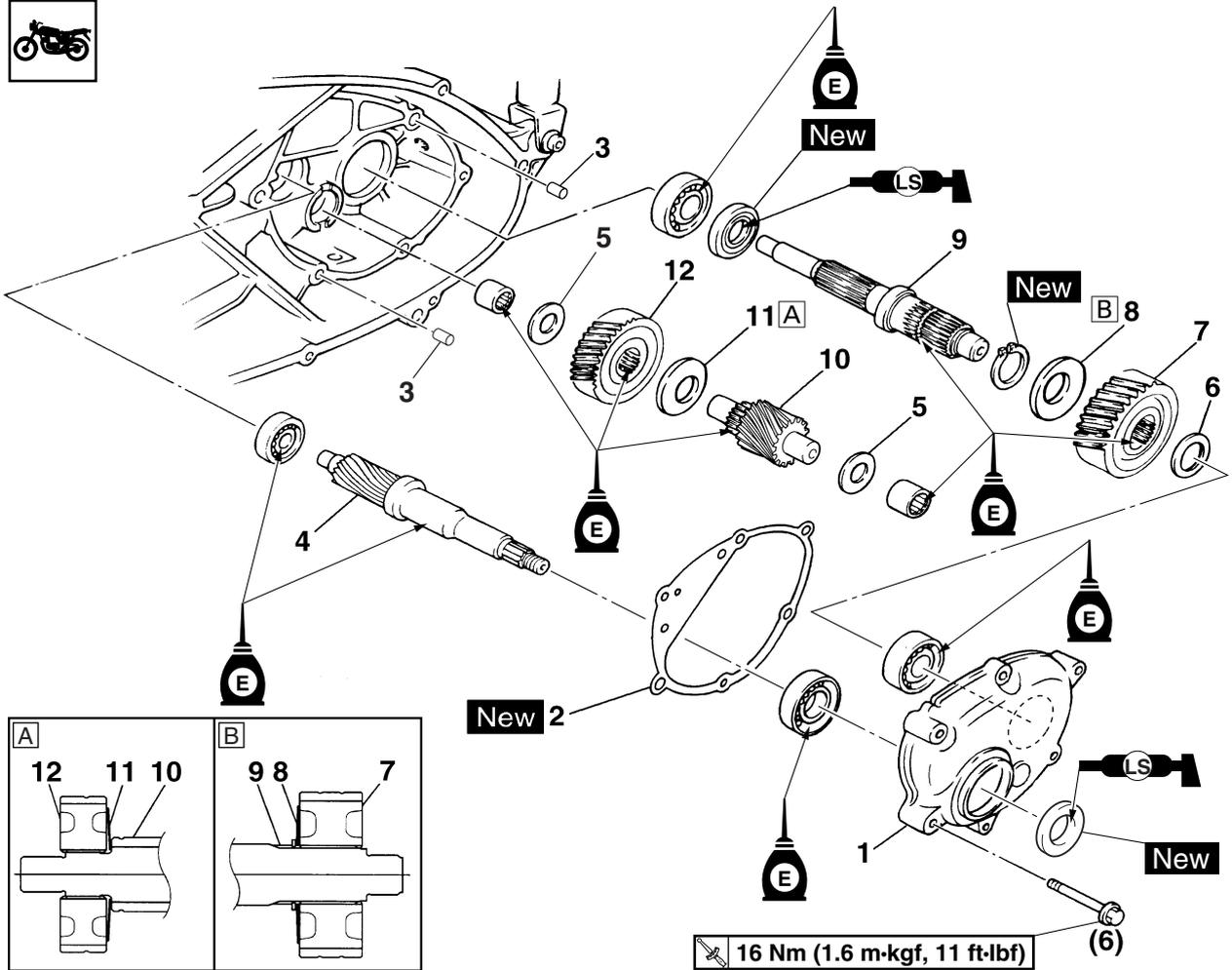
Removing the transmission



Order	Job/Parts to remove	Q'ty	Remarks
	Rear wheel		Refer to "REAR WHEEL" on page 4-15.
	Final transmission oil		Drain. Refer to "CHANGING THE FINAL TRANSMISSION OIL" on page 3-28.
	Secondary sheave assembly		Refer to "V-BELT AUTOMATIC TRANSMISSION (YP250R)" on page 5-89.
1	Transmission case cover	1	
2	Gasket	1	
3	Dowel pin	2	
4	Primary drive gear	1	
5	Washer	2	
6	Washer	1	
7	1st wheel gear	1	
8	Conical spring washer	1	
9	Drive axle	1	
10	Main axle	1	
11	Conical spring washer	1	

TRANSMISSION (YP250R)

Removing the transmission



Order	Job/Parts to remove	Q'ty	Remarks
12	Primary driven gear	1	
			For installation, reverse the removal procedure.

EAS26250

REMOVING THE TRANSMISSION

1. Remove:

- Transmission case cover

TIP

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

EAS26300

CHECKING THE TRANSMISSION

1. Check:

- Transmission gears
Blue discoloration/pitting/wear → Replace the defective gear(s).
- Transmission gear dogs
Cracks/damage/rounded edges → Replace the defective gear(s).

2. Check:

- Transmission gear engagement
(each pinion gear to its respective wheel gear)
Incorrect → Reassemble the transmission axle assemblies.

3. Check:

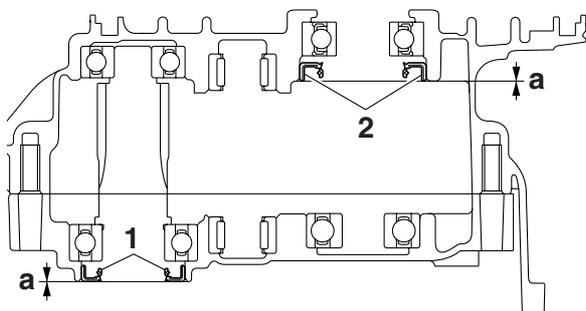
- Transmission gear movement
Rough movement → Replace the defective part(s).

EAS37P1066

INSTALLING THE TRANSMISSION

1. Install:

- Oil seal "1"
- Oil seal "2"



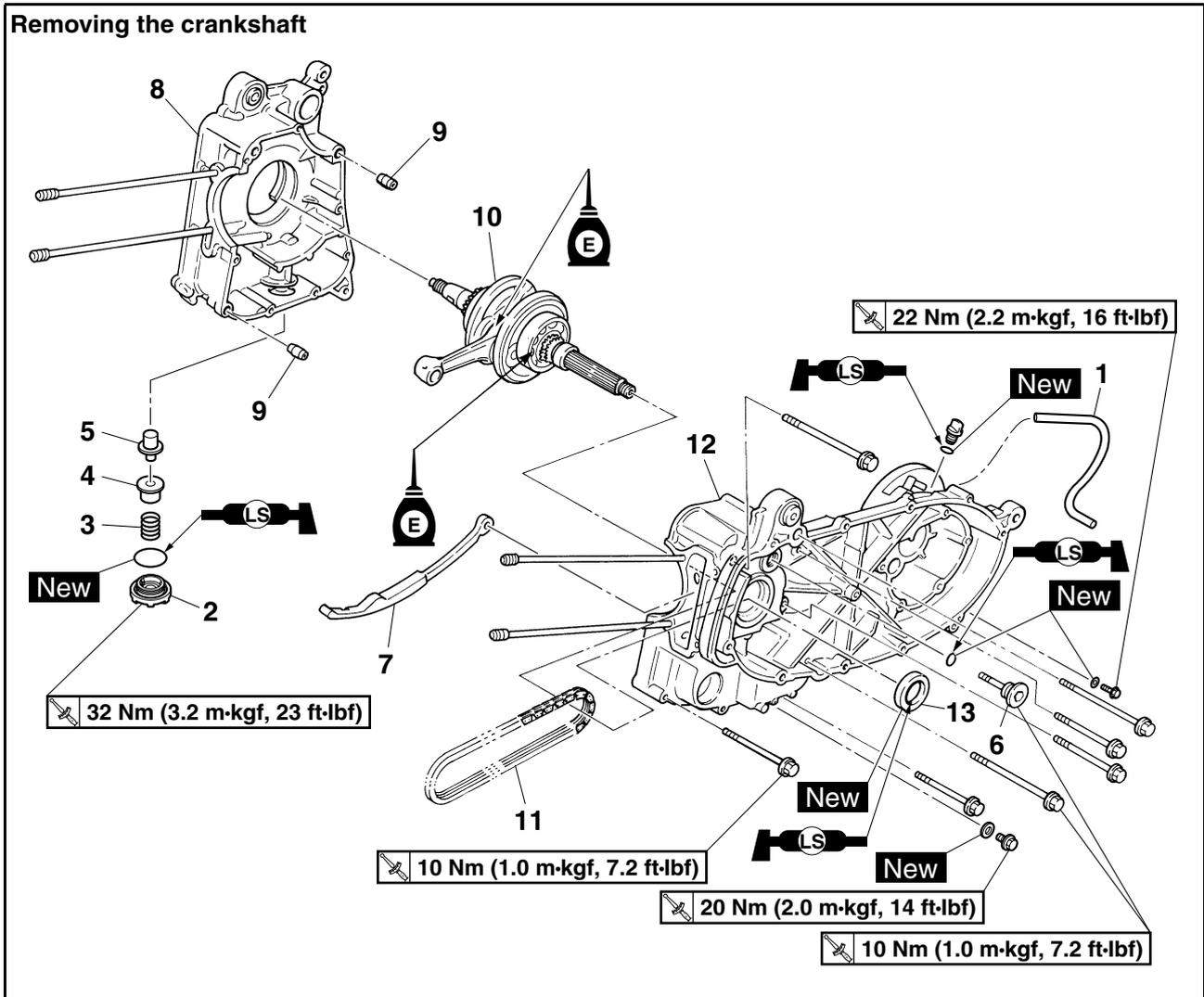
a. Oil seal installed depth

CRANKSHAFT (YP250R)

EAS25960

CRANKSHAFT (YP250R)

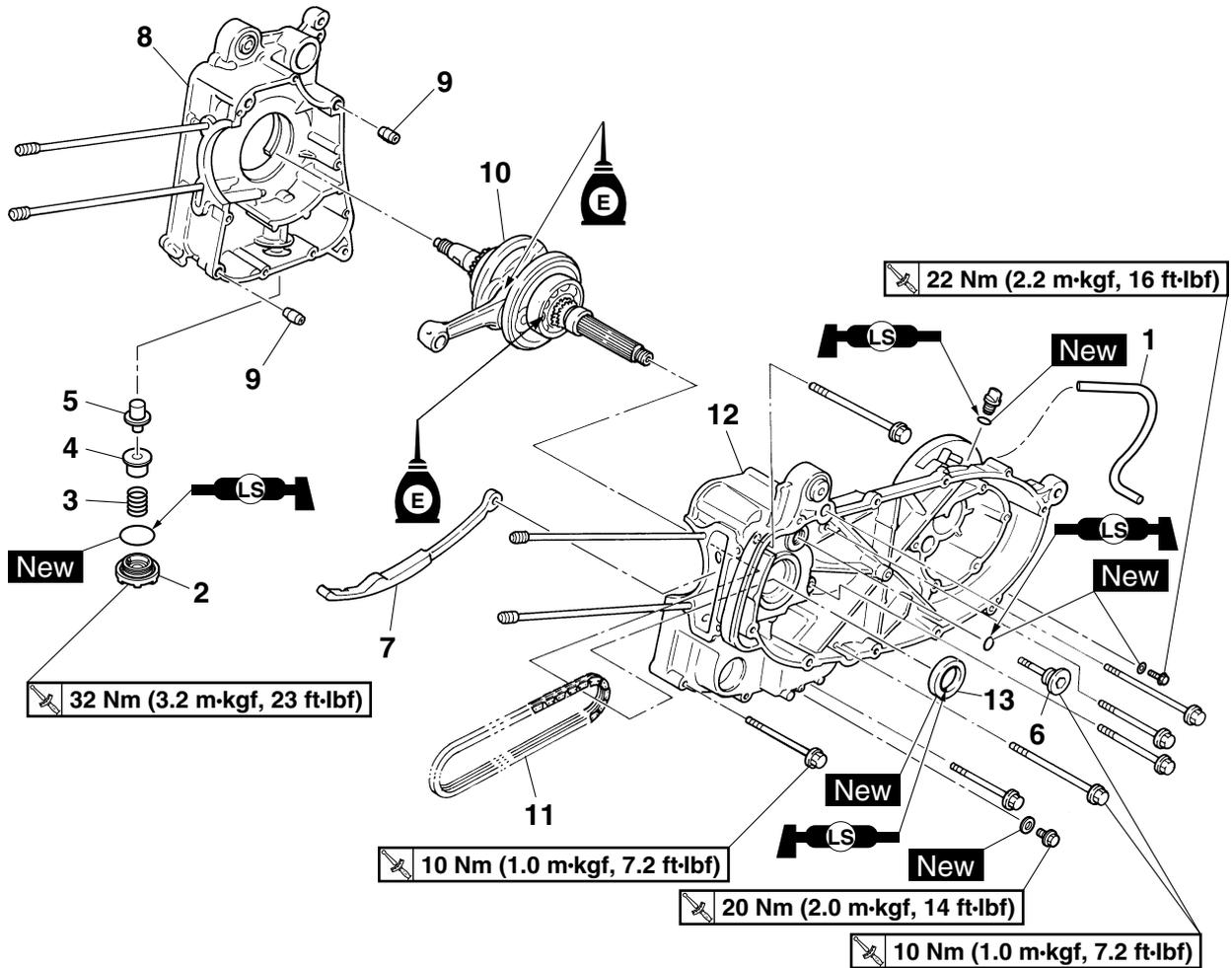
Removing the crankshaft



Order	Job/Parts to remove	Q'ty	Remarks
	Water pump assembly		Refer to "WATER PUMP (YP250R)" on page 6-12.
	Engine		Refer to "ENGINE REMOVAL (YP250R)" on page 5-61.
	Cylinder head		Refer to "CYLINDER HEAD (YP250R)" on page 5-67.
	Piston		Refer to "CYLINDER AND PISTON (YP250R)" on page 5-84.
	Belt drive		Refer to "V-BELT AUTOMATIC TRANSMISSION (YP250R)" on page 5-89.
	Oil pump assembly		Refer to "OIL PUMP (YP250R)" on page 5-108.
	Transmission		Refer to "TRANSMISSION (YP250R)" on page 5-112.
1	Transmission case breather hose	1	
2	Oil strainer cover	1	
3	Spring	1	
4	Oil strainer	1	
5	Breather pipe	1	

CRANKSHAFT (YP250R)

Removing the crankshaft



Order	Job/Parts to remove	Q'ty	Remarks
6	Timing chain guide retaining bolt	1	
7	Timing chain guide (intake side)	1	
8	Right crankcase	1	
9	Dowel pin	2	
10	Crankshaft assembly	1	
11	Timing chain	1	
12	Left crankcase	1	
13	Oil seal	1	
			For installation, reverse the removal procedure.

CRANKSHAFT (YP250R)

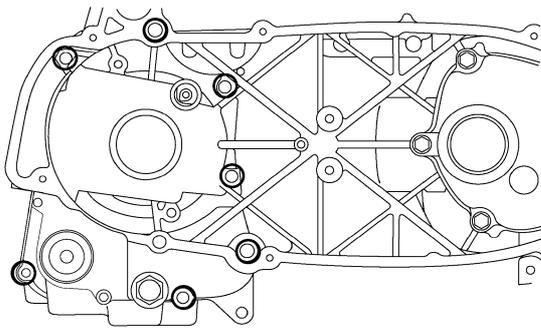
EAS25560

DISASSEMBLING THE CRANKCASE

1. Remove:
 - Crankcase bolts

TIP

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



2. Remove:
 - Right crankcase "1"

TIP

- Remove the right crankcase with the crankcase separating tool "2" and M6 bolts "3".
- Make sure that the crankcase separating tool is centered over the crankshaft.

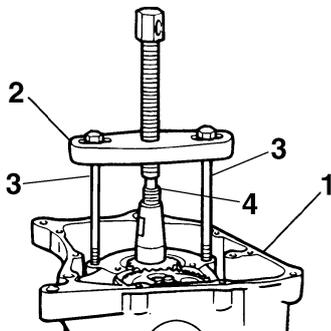
ECA37P1013

NOTICE

- To protect the end of the crankshaft, place an appropriate sized socket "4" between the crankcase separating tool bolt and the crankshaft.
- Do not tap on the crankshaft.



Crankcase separating tool
90890-01135
Crankcase separator
YU-01135-B



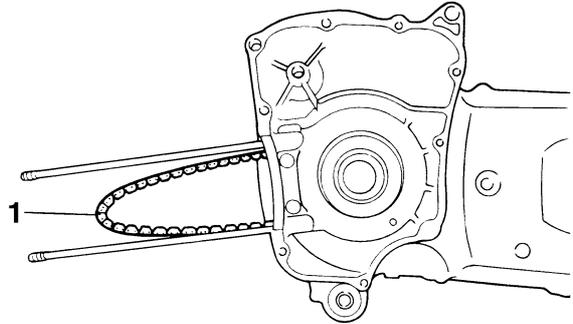
EAS26020

REMOVING THE CRANKSHAFT ASSEMBLY

1. Remove:
 - Timing chain "1"

TIP

- Before removing the crankshaft assembly, remove the timing chain from the crankshaft sprocket.
- The crankshaft assembly cannot be removed if the timing chain is attached onto the crankshaft sprocket.



2. Remove:
 - Crankshaft assembly "1"

TIP

- Remove the crankshaft assembly with the crankcase separating tool "2" and M6 bolts "3".
- Make sure that the crankcase separating tool is centered over the crankshaft assembly.

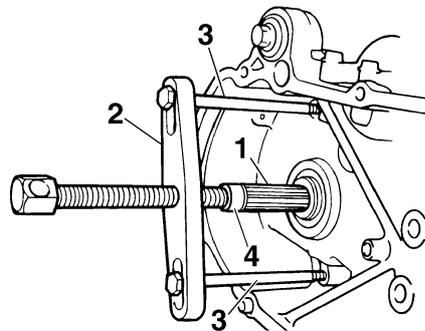
ECA37P1013

NOTICE

- To protect the end of the crankshaft, place an appropriate sized socket "4" between the crankcase separating tool bolt and the crankshaft.
- Do not tap on the crankshaft.



Crankcase separating tool
90890-01135
Crankcase separator
YU-01135-B



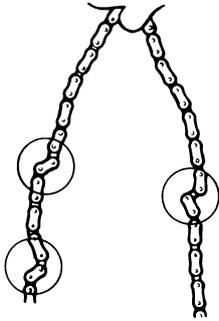
CRANKSHAFT (YP250R)

EAS24180

CHECKING THE TIMING CHAIN AND TIMING CHAIN GUIDE

1. Check:

- Timing chain
Damage/stiffness → Replace the timing chain and camshaft sprocket as a set.



343 007

2. Check:

- Timing chain guide (intake side)
Damage/wear → Replace.

EAS26060

CHECKING THE CRANKSHAFT AND CONNECTING ROD

1. Measure:

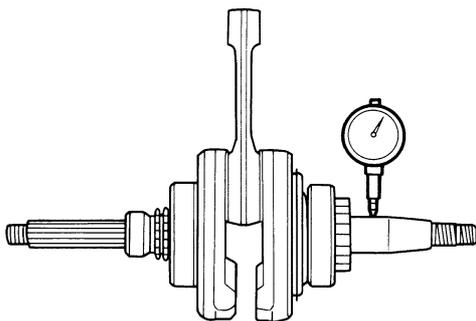
- Crankshaft runout
Out of specification → Replace the crankshaft.

TIP

Turn the crankshaft slowly.



Runout limit C
0.030 mm (0.0012 in)

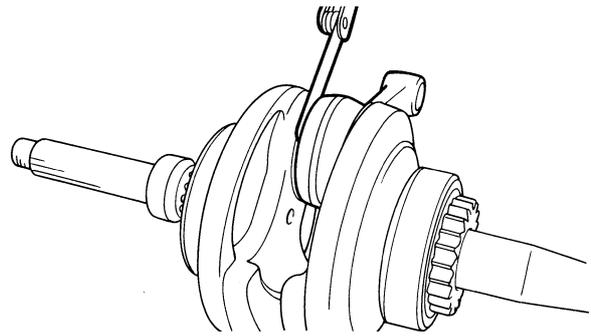


2. Measure:

- Big end side clearance
Out of specification → Replace the crankshaft.



Big end side clearance D
0.350–0.850 mm (0.0138–0.0335 in)

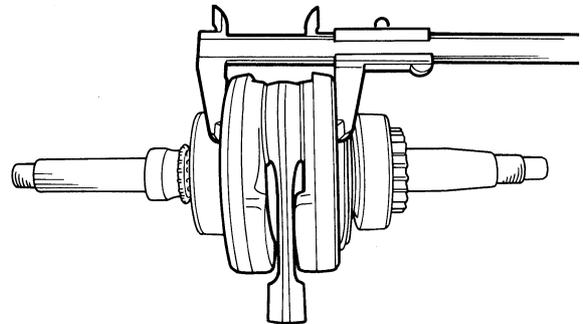


3. Measure:

- Crankshaft width
Out of specification → Replace the crankshaft.

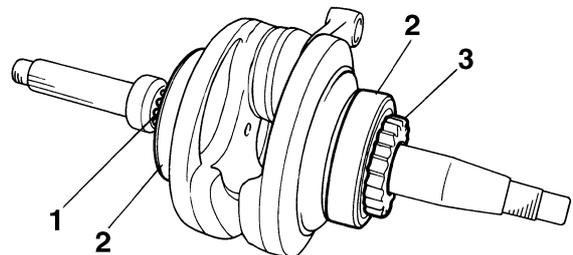


Width A
59.75–59.80 mm (2.352–2.354 in)



4. Check:

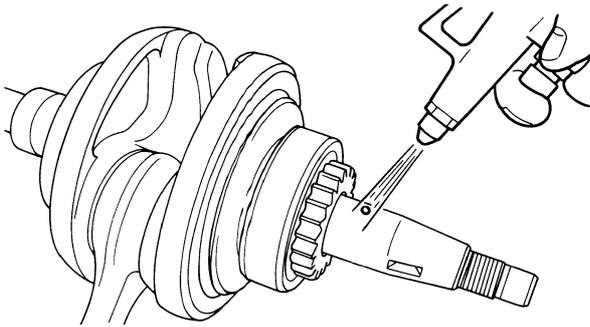
- Crankshaft sprocket "1"
Damage/wear → Replace the crankshaft.
- Bearings "2"
Cracks/damage/wear → Replace the crankshaft.
- Oil pump drive gear "3"
Damage/wear → Replace the crankshaft.



5. Check:

- Crankshaft journal
Scratches/wear → Replace the crankshaft.
- Crankshaft journal oil passage
Obstruction → Blow out with compressed air.

CRANKSHAFT (YP250R)



EAS25580

CHECKING THE CRANKCASE

1. Thoroughly wash the crankcase halves in a mild solvent.
2. Thoroughly clean all the gasket surfaces and crankcase mating surfaces.
3. Check:
 - Crankcase
Cracks/damage → Replace.
 - Oil delivery passages
Obstruction → Blow out with compressed air.

EAS37P1067

CHECKING THE BEARING AND OIL SEAL

1. Check:
 - Bearing
Clean and lubricate the bearings, and then rotate the inner race with your finger.
Rough movement → Replace.

EAS37P1068

CHECKING THE OIL STRAINERS

1. Check:
 - Oil strainers
Damage → Replace.
Contaminants → Clean with solvent.

EAS26210

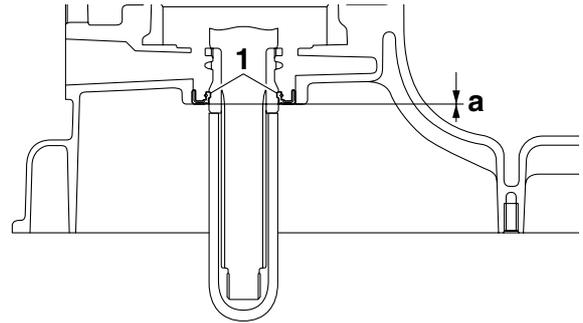
INSTALLING THE CRANKSHAFT

1. Lubricate:
 - Oil seals
 - Bearings
 - Oil pump drive gear

	Recommended lubricant
	Oil seal
	Lithium-soap-based grease
	Bearing, oil pump drive gear
	Engine oil

2. Install:
 - Oil seal "1"
(to the left crankcase)

	Oil seal installed depth 0–0.5 mm (0–0.020 in)
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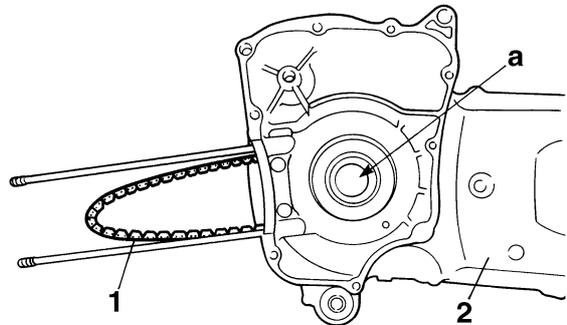


a. Oil seal installed depth

3. Install:
 - Timing chain "1"

TIP

Install the timing chain so it is not visible through the opening "a" in the left crankcase "2".



4. Install:
 - Crankshaft assembly "1"
(to the left crankcase)

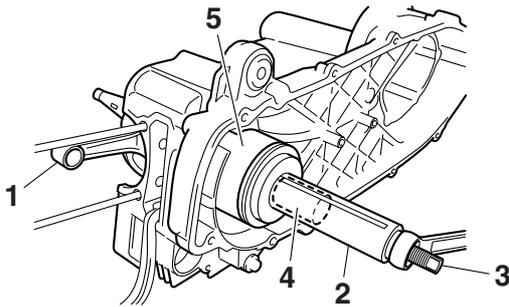
TIP

Install the crankshaft assembly with the crankshaft installer pot "2", crankshaft installer bolt "3", adapter "4", and spacer "5".



Crankshaft installer pot
90890-01274
Installing pot
YU-90058
Crankshaft installer bolt
90890-01275
Bolt
YU-90060
Adapter (M14)
90890-01478
Adapter #6
YM-90066
Spacer (crankshaft installer)
90890-04081
Pot spacer
YM-91044

CRANKSHAFT (YP250R)



ECA13970

NOTICE

To avoid scratching the crankshaft and to ease the installation procedure, lubricate the oil seal lips with lithium-soap-based grease and each bearing with engine oil.

TIP

Hold the connecting rod at top dead center (TDC) with one hand while turning the nut of the crankshaft installer bolt with the other. Turn the crankshaft installer bolt until the crankshaft assembly bottoms against the bearing.

EAS25700

ASSEMBLING THE CRANKCASE

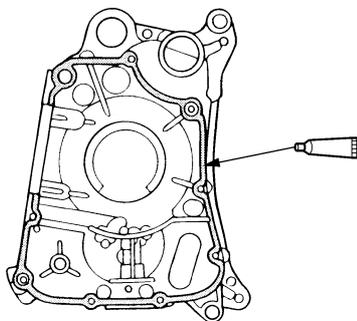
1. Thoroughly clean all the gasket mating surfaces and crankcase mating surfaces.
2. Apply:
 - Sealant
(onto the crankcase mating surfaces)



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

TIP

Do not allow any sealant to come into contact with the oil gallery.



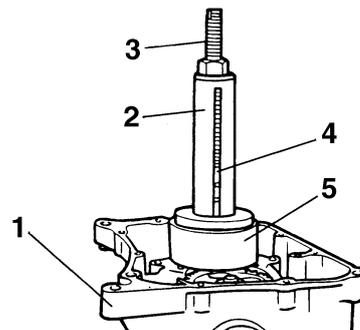
3. Install:
 - Right crankcase "1"

TIP

Install the crankshaft assembly with the crankshaft installer pot "2", crankshaft installer bolt "3", adapter "4", and spacer "5".



Crankshaft installer pot
90890-01274
Installing pot
YU-90058
Crankshaft installer bolt
90890-01275
Bolt
YU-90060
Adapter (M16)
90890-01280
Adapter #7
YM-90067
Spacer
90890-01288



4. Install:
 - Water pump assembly
 - Crankcase bolts

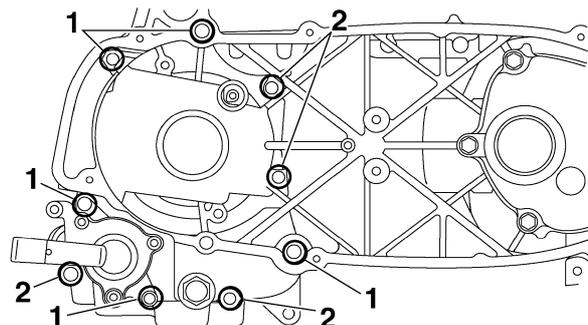


Crankcase bolt
10 Nm (1.0 m·kgf, 7.2 ft·lbf)

TIP

Tighten the crankcase bolts in stages and in a crisscross pattern.

- M6 × 100 mm (3.94 in) bolts: "1"
- M6 × 70 mm (2.76 in) bolts: "2"



COOLING SYSTEM

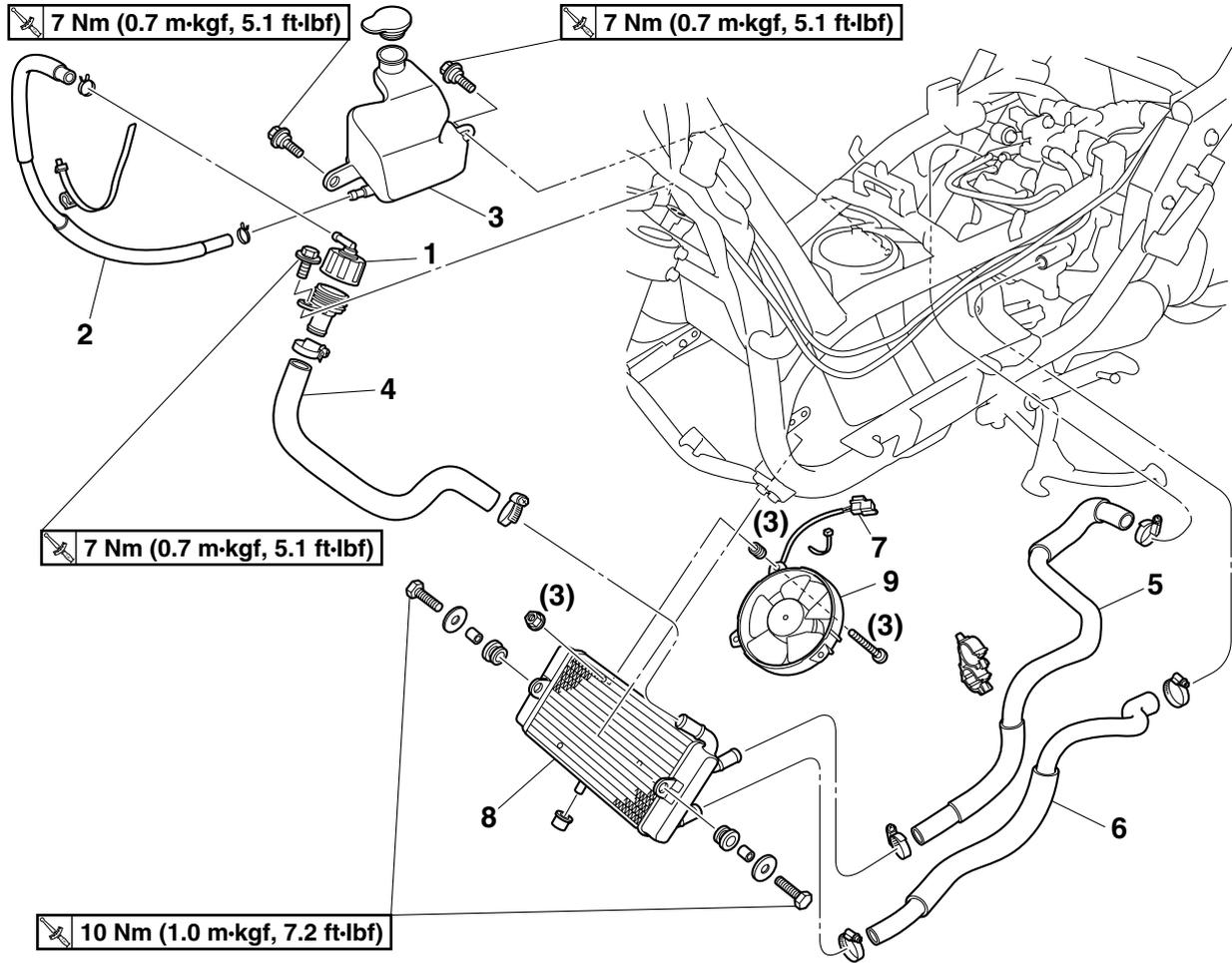
RADIATOR (YP125R)	6-1
CHECKING THE RADIATOR.....	6-2
INSTALLING THE RADIATOR.....	6-2
THERMOSTAT (YP125R)	6-3
CHECKING THE THERMOSTAT.....	6-4
INSTALLING THE THERMOSTAT.....	6-4
WATER PUMP (YP125R)	6-5
DISASSEMBLING THE WATER PUMP.....	6-6
CHECKING THE WATER PUMP.....	6-6
ASSEMBLING THE WATER PUMP.....	6-6
INSTALLING THE WATER PUMP.....	6-7
RADIATOR (YP250R)	6-8
CHECKING THE RADIATOR.....	6-9
INSTALLING THE RADIATOR.....	6-9
THERMOSTAT (YP250R)	6-10
CHECKING THE THERMOSTAT.....	6-11
INSTALLING THE THERMOSTAT.....	6-11
WATER PUMP (YP250R)	6-12
DISASSEMBLING THE WATER PUMP.....	6-14
CHECKING THE WATER PUMP.....	6-14
ASSEMBLING THE WATER PUMP.....	6-14
INSTALLING THE WATER PUMP.....	6-15

RADIATOR (YP125R)

EAS37P1105

RADIATOR (YP125R)

Removing the radiator



Order	Job/Parts to remove	Q'ty	Remarks
	Radiator cover/Radiator air duct/Bottom cover/Footrest board		Refer to "GENERAL CHASSIS" on page 4-1.
	Coolant		Drain. Refer to "CHANGING THE COOLANT" on page 3-18.
1	Radiator cap	1	
2	Coolant reservoir hose	1	
3	Coolant reservoir	1	
4	Radiator filler hose	1	
5	Radiator inlet hose	1	
6	Radiator outlet hose	1	
7	Radiator fan motor coupler	1	Disconnect.
8	Radiator	1	
9	Radiator fan motor	1	
			For installation, reverse the removal procedure.

RADIATOR (YP125R)

EAS37P1106

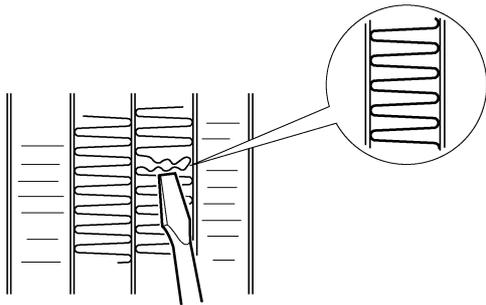
CHECKING THE RADIATOR

1. Check:

- Radiator fins
Obstruction → Clean.
Apply compressed air to the rear of the radiator.
- Damage → Repair or replace.

TIP

Straighten any flattened fins with a thin, flat-head screwdriver.



2. Check:

- Radiator hoses
Cracks/damage → Replace.

3. Check:

- Radiator fan motor
Damage → Replace.
Malfunction → Check and repair.
Refer to “CHECKING THE RADIATOR FAN MOTOR” on page 8-87.

EAS37P1107

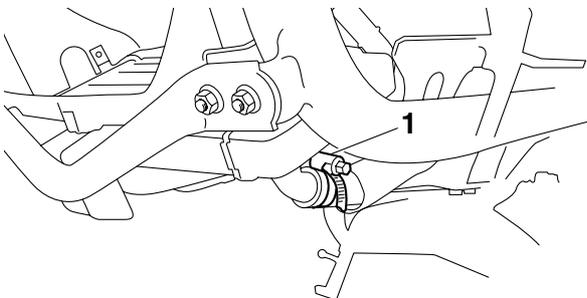
INSTALLING THE RADIATOR

1. Install:

- Radiator outlet hose screw clamp “1”

TIP

Install the radiator outlet hose screw clamp in the position shown in the illustration.



2. Fill:

- Cooling system
(with the specified amount of the recommended coolant)

Refer to “CHANGING THE COOLANT” on page 3-18.

3. Check:

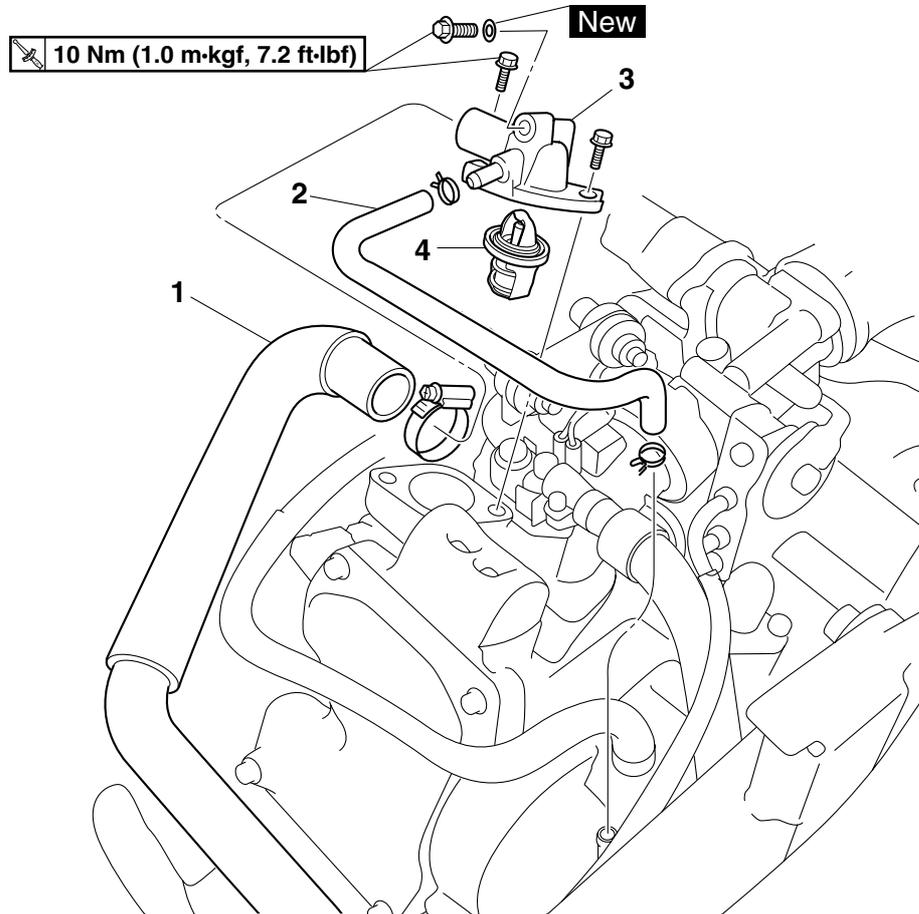
- Cooling system
Leaks → Repair or replace any faulty part.

THERMOSTAT (YP125R)

EAS37P1108

THERMOSTAT (YP125R)

Removing the thermostat



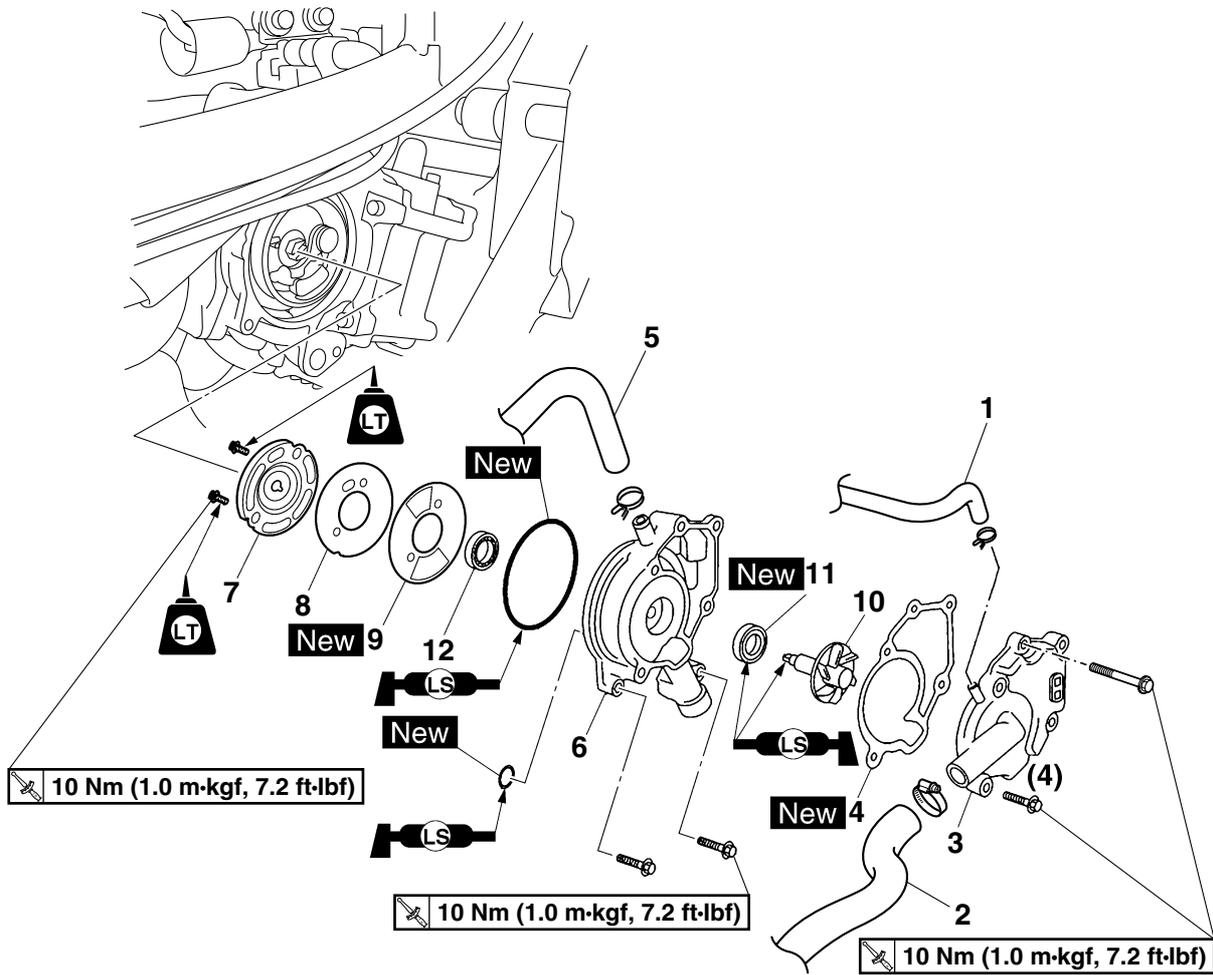
Order	Job/Parts to remove	Q'ty	Remarks
	Storage box		Refer to "GENERAL CHASSIS" on page 4-1.
	Coolant		Drain. Refer to "CHANGING THE COOLANT" on page 3-18.
1	Radiator inlet hose	1	Disconnect.
2	Thermostat inlet hose	1	
3	Thermostat cover	1	
4	Thermostat	1	
			For installation, reverse the removal procedure.

WATER PUMP (YP125R)

EAS37P1111

WATER PUMP (YP125R)

Removing the water pump



Order	Job/Parts to remove	Q'ty	Remarks
	Storage box/Footrest board		Refer to "GENERAL CHASSIS" on page 4-1.
1	Thermostat inlet hose	1	Disconnect.
2	Radiator outlet hose	1	Disconnect.
3	Water pump housing cover	1	
4	Water pump housing cover gasket	1	
5	Cylinder head breather hose	1	Disconnect.
6	Water pump housing	1	
7	Water pump housing plate 1	1	
8	Water pump housing plate 2	1	
9	Water pump housing plate gasket	1	
10	Impeller shaft	1	
11	Water pump seal	1	
12	Bearing	1	
			For installation, reverse the removal procedure.

WATER PUMP (YP125R)

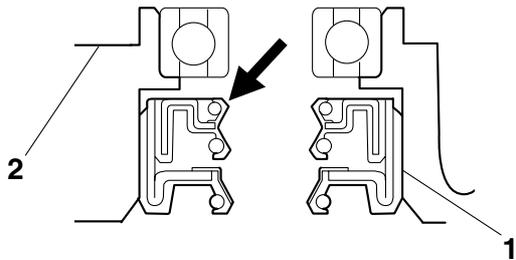
EAS37P1112

DISASSEMBLING THE WATER PUMP

1. Remove:
 - Water pump seal "1"

TIP

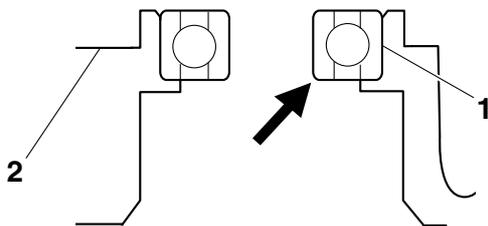
Remove the water pump seal from the inside of the water pump housing "2".



2. Remove:
 - Bearing "1"

TIP

Remove the bearing from the outside of the water pump housing "2".



EAS37P1113

CHECKING THE WATER PUMP

1. Check:
 - Water pump housing cover
 - Water pump housing
 - Impeller shaft
 Cracks/damage/wear → Replace.
2. Check:
 - Bearing
 Rough movement → Replace.

EAS37P1114

ASSEMBLING THE WATER PUMP

1. Install:
 - Water pump seal "1" **New**
(into the water pump housing "2")

TIP

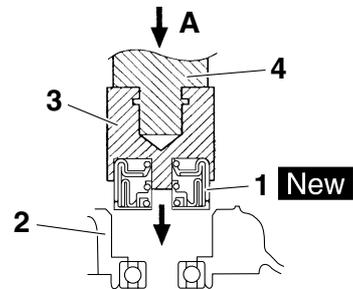
Install the water pump seal with the special tools to the specified depth as shown in the illustration.



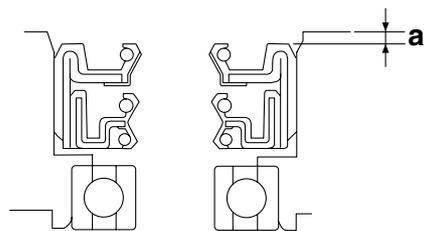
Installed depth of water pump seal
0–0.5 mm (0–0.02 in)



Mechanical seal installer
90890-04145
Middle driven shaft bearing driver
90890-04058
Bearing driver 40 mm
YM-04058



- Push down
- Mechanical seal installer
- Middle driven shaft bearing driver



- Installed depth of water pump seal

2. Lubricate:
 - Water pump seal



Recommended lubricant
Lithium-soap-based grease

3. Install:
 - Impeller shaft
 - Water pump housing plate gasket "1" **New**
 - Water pump housing plate 2 "2"

WATER PUMP (YP125R)

- Water pump housing plate 1 “3”



Water pump housing plate 1 bolt
10 Nm (1.0 m·kgf, 7.2 ft·lbf)
LOCTITE®

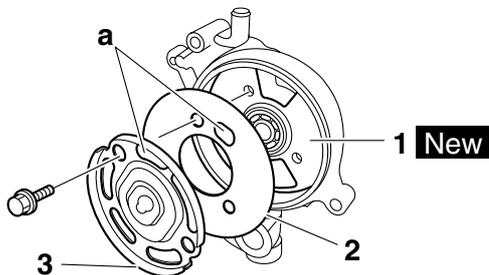
Refer to “CHANGING THE COOLANT” on page 3-18.

3. Check:

- Cooling system
Leaks → Repair or replace any faulty part.

TIP

- After installation, check that the impeller shaft rotates smoothly.
- Be sure to align the bolt holes in the water pump housing plate gasket and water pump housing plates. Make sure that the gasket does not block the holes “a” in the water pump housing plates.



EAS37P1115

INSTALLING THE WATER PUMP

1. Install:

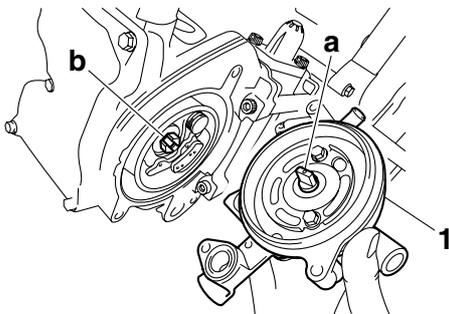
- O-rings **New**
- Water pump assembly “1”



Water pump assembly bolt
10 Nm (1.0 m·kgf, 7.2 ft·lbf)

TIP

- Lubricate the O-rings with a thin coat of lithium-soap-based grease.
- Align the projection “a” on the impeller shaft with the slot “b” in the camshaft sprocket bolt.



2. Fill:

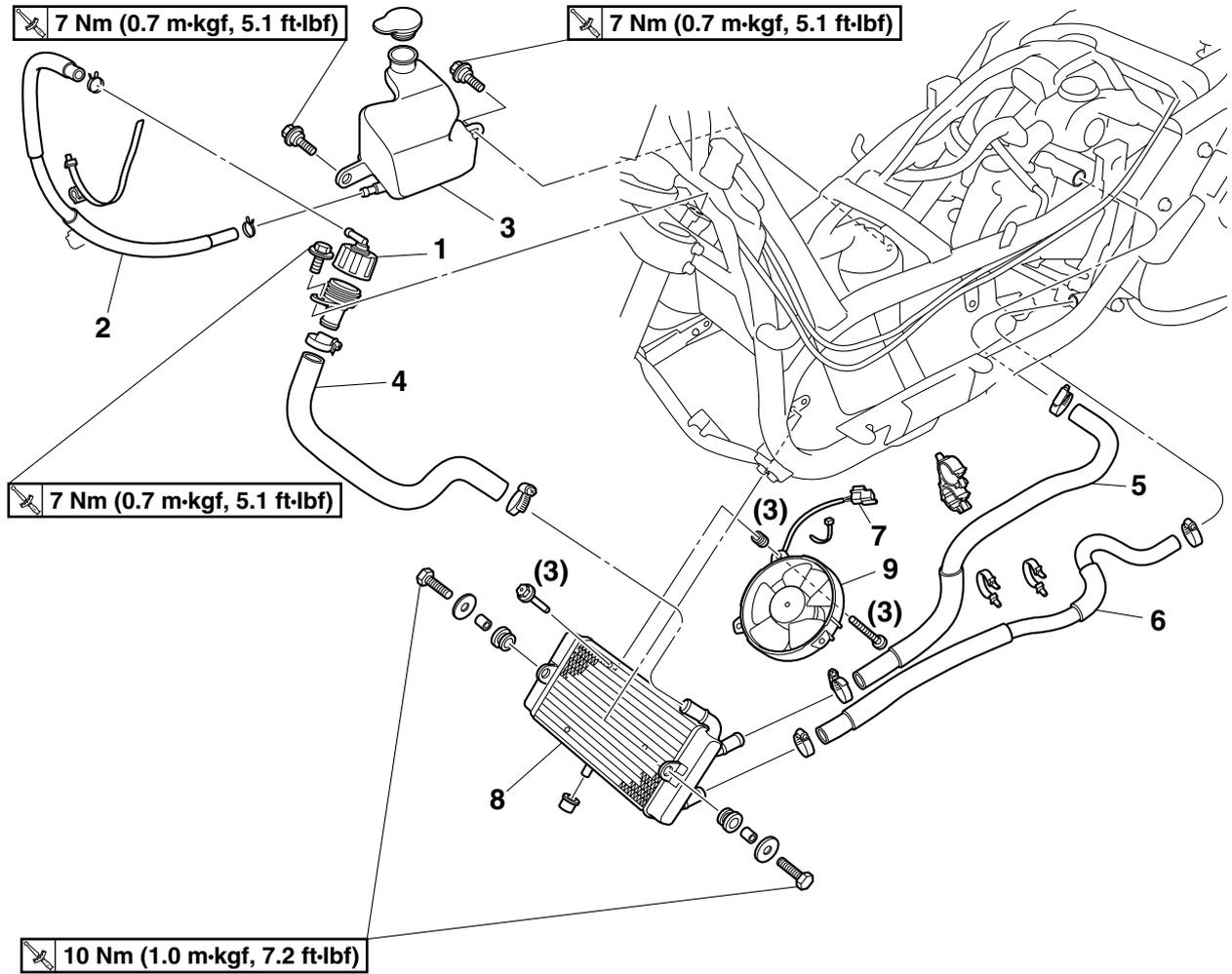
- Cooling system
(with the specified amount of the recommended coolant)

RADIATOR (YP250R)

EAS26380

RADIATOR (YP250R)

Removing the radiator



Order	Job/Parts to remove	Q'ty	Remarks
	Radiator cover/Radiator air duct/Bottom cover/Footrest board		Refer to "GENERAL CHASSIS" on page 4-1.
	Coolant		Drain. Refer to "CHANGING THE COOLANT" on page 3-32.
1	Radiator cap	1	
2	Coolant reservoir hose	1	
3	Coolant reservoir	1	
4	Radiator filler hose	1	
5	Radiator inlet hose	1	
6	Radiator outlet hose	1	
7	Radiator fan motor coupler	1	Disconnect.
8	Radiator	1	
9	Radiator fan motor	1	
			For installation, reverse the removal procedure.

RADIATOR (YP250R)

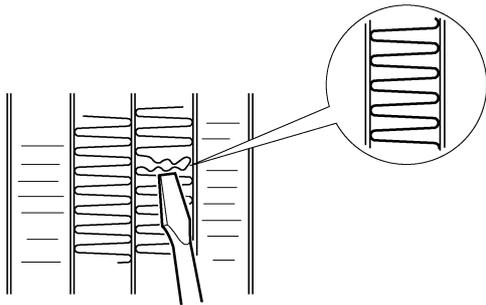
EAS26390

CHECKING THE RADIATOR

1. Check:
 - Radiator fins
Obstruction → Clean.
Apply compressed air to the rear of the radiator.
 - Damage → Repair or replace.

TIP

Straighten any flattened fins with a thin, flat-head screwdriver.



2. Check:
 - Radiator hoses
Cracks/damage → Replace.
3. Check:
 - Radiator fan motor
Damage → Replace.
Malfunction → Check and repair.
Refer to “CHECKING THE RADIATOR FAN MOTOR” on page 8-87.

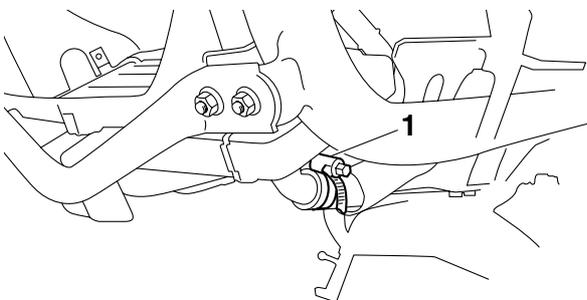
EAS26400

INSTALLING THE RADIATOR

1. Install:
 - Radiator outlet hose screw clamp “1”

TIP

Install the radiator outlet hose screw clamp in the position shown in the illustration.



2. Fill:
 - Cooling system
(with the specified amount of the recommended coolant)

Refer to “CHANGING THE COOLANT” on page 3-32.

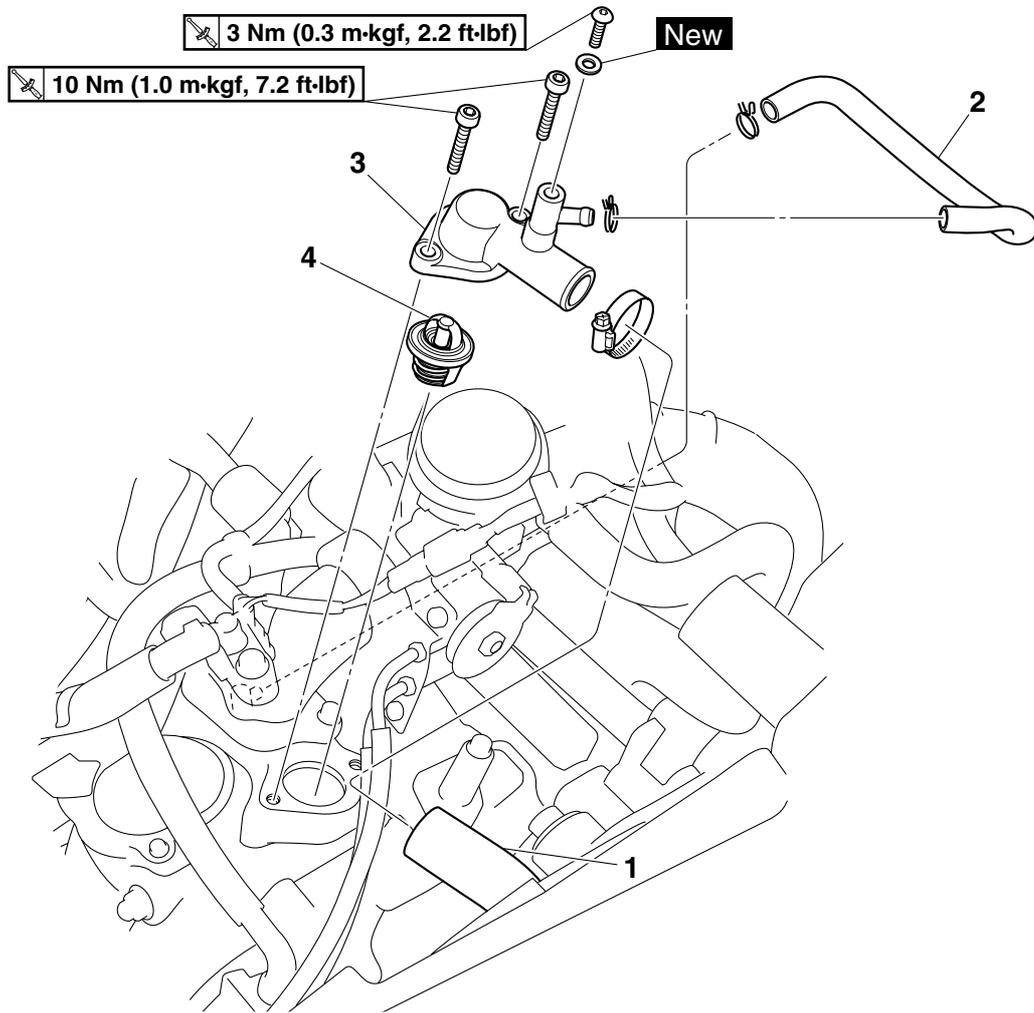
3. Check:
 - Cooling system
Leaks → Repair or replace any faulty part.

THERMOSTAT (YP250R)

EAS26440

THERMOSTAT (YP250R)

Removing the thermostat



Order	Job/Parts to remove	Q'ty	Remarks
	Storage box		Refer to "GENERAL CHASSIS" on page 4-1.
	Coolant		Drain. Refer to "CHANGING THE COOLANT" on page 3-32.
1	Radiator inlet hose	1	Disconnect.
2	Thermostat inlet hose	1	
3	Thermostat cover	1	
4	Thermostat	1	
			For installation, reverse the removal procedure.

THERMOSTAT (YP250R)

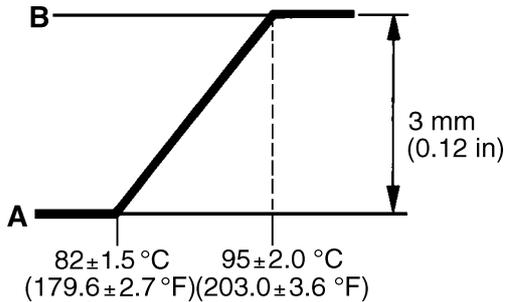
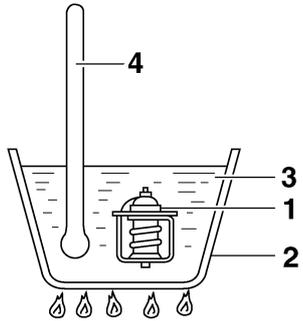
EAS26450

CHECKING THE THERMOSTAT

1. Check:

- Thermostat
Does not open at 80.5–83.5 °C (176.9–182.3 °F) → Replace.

- Suspend the thermostat “1” in a container “2” filled with water.
- Slowly heat the water “3”.
- Place a thermometer “4” in the water.
- While stirring the water, observe the thermostat and thermometer’s indicated temperature.



- A. Fully closed
- B. Fully open

TIP

If the accuracy of the thermostat is in doubt, replace it. A faulty thermostat could cause serious overheating or overcooling.

2. Check:

- Thermostat cover
Cracks/damage → Replace.

EAS26460

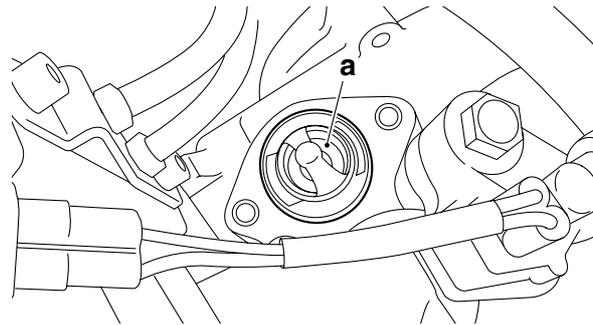
INSTALLING THE THERMOSTAT

1. Install:

- Thermostat

TIP

Install the thermostat with its breather hole “a” in the position shown in the illustration.



2. Fill:

- Cooling system
(with the specified amount of the recommended coolant)
Refer to “CHANGING THE COOLANT” on page 3-32.

3. Check:

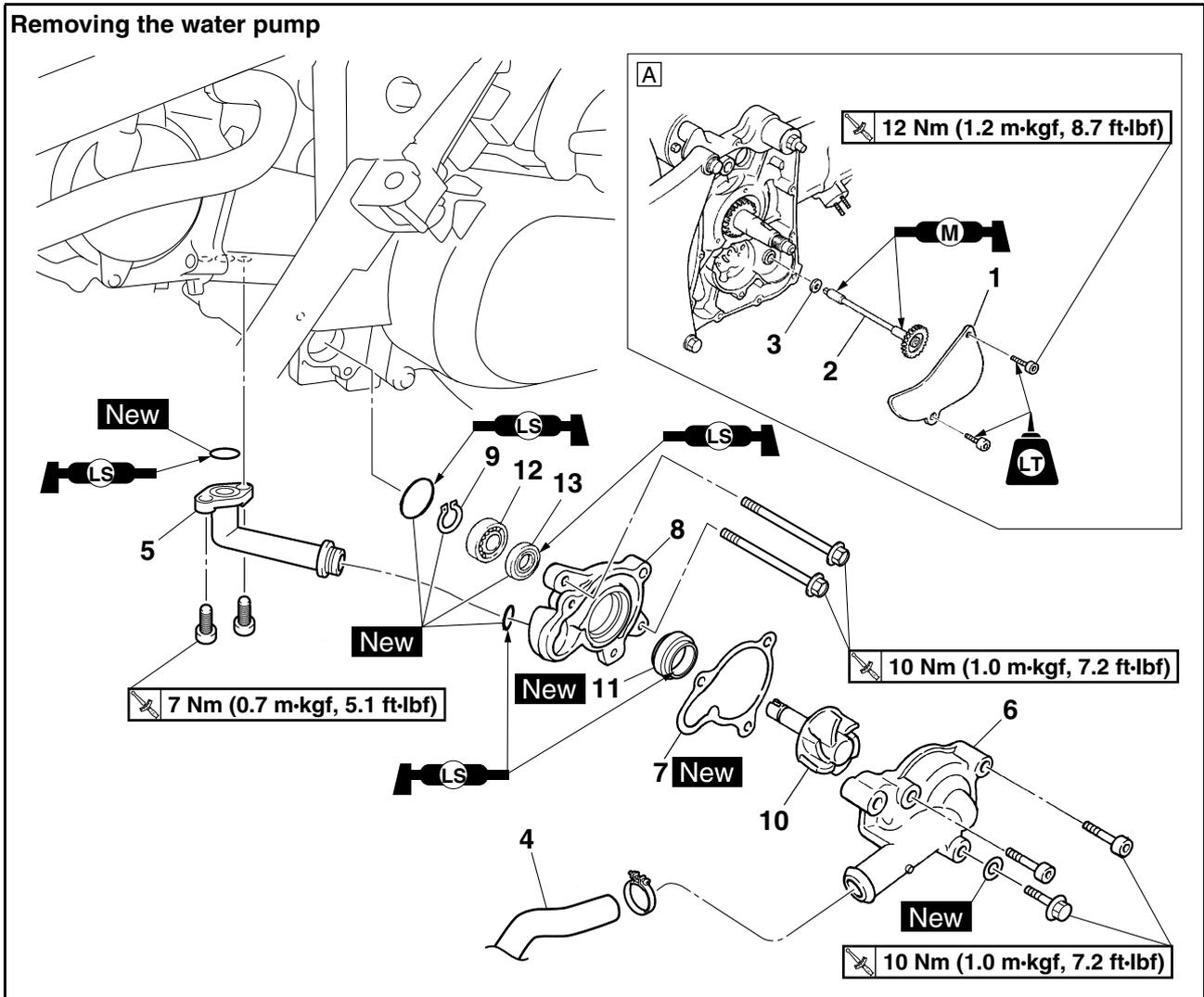
- Cooling system
Leaks → Repair or replace any faulty part.

WATER PUMP (YP250R)

EAS26500

WATER PUMP (YP250R)

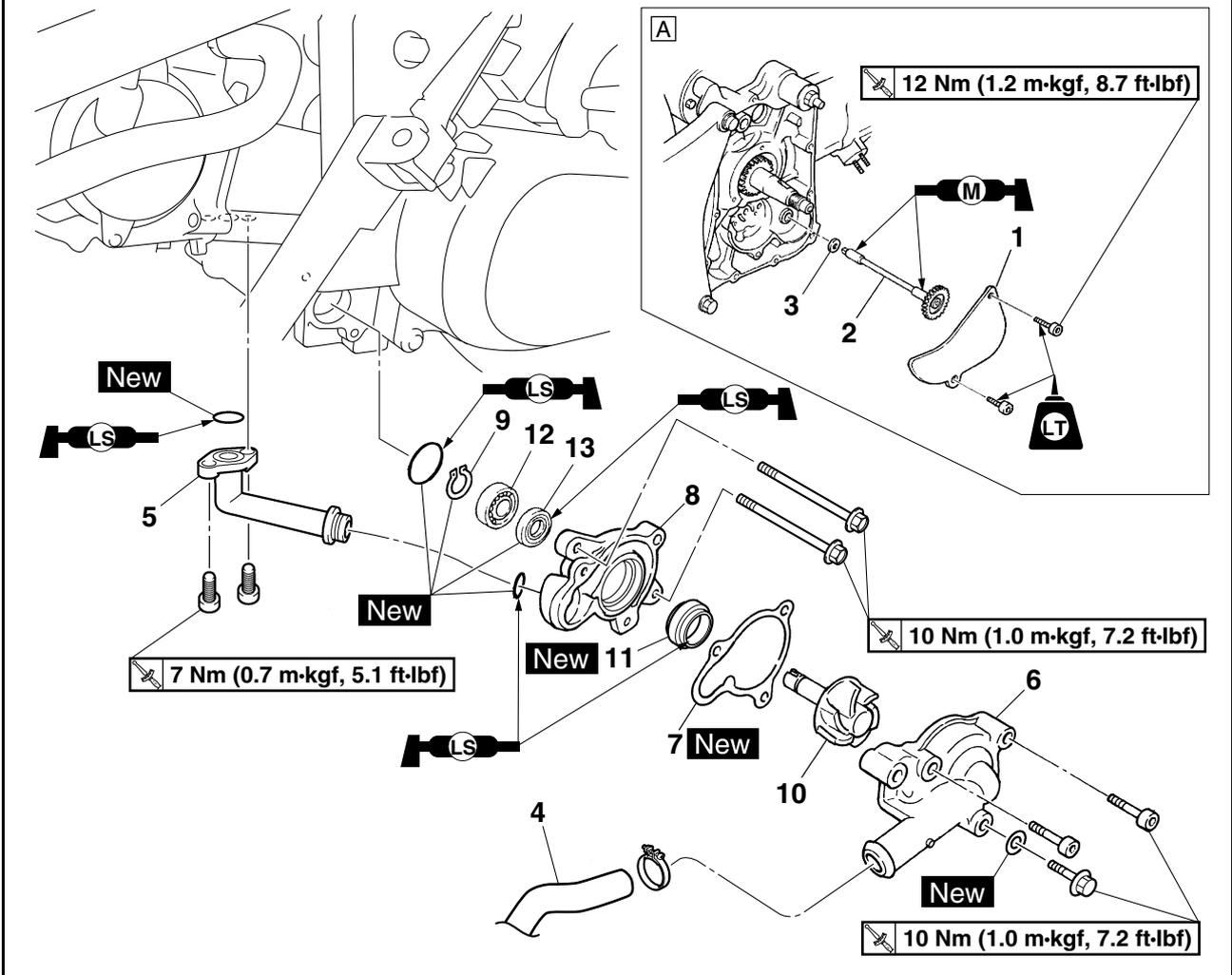
Removing the water pump



Order	Job/Parts to remove	Q'ty	Remarks
			It is not necessary to remove the water pump unless the coolant level is extremely low or the coolant contains engine oil.
	Bottom cover		Refer to "GENERAL CHASSIS" on page 4-1.
	Generator rotor		Refer to "STARTER CLUTCH AND GENERATOR (YP250R)" on page 5-99.
	Coolant		Drain. Refer to "CHANGING THE COOLANT" on page 3-32.
1	Oil baffle plate	1	
2	Impeller shaft gear	1	
3	Washer	1	
4	Radiator outlet hose	1	Disconnect.
5	Water pump outlet pipe	1	
6	Water pump housing cover	1	
7	Gasket	1	
8	Water pump housing	1	

WATER PUMP (YP250R)

Removing the water pump



Order	Job/Parts to remove	Q'ty	Remarks
9	Circlip	1	
10	Impeller shaft	1	
11	Water pump seal	1	
12	Bearing	1	
13	Oil seal	1	
			For installation, reverse the removal procedure.

A: Oil pump side

WATER PUMP (YP250R)

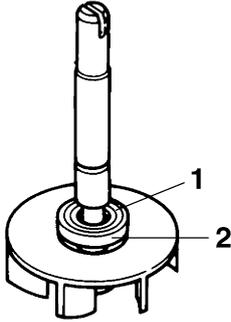
EAS26510

DISASSEMBLING THE WATER PUMP

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

TIP

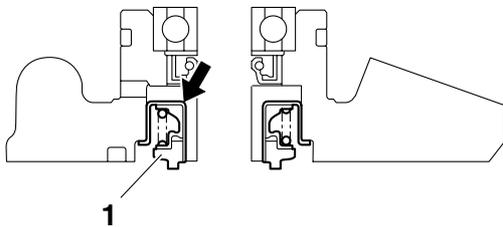
Do not scratch the impeller shaft.



2. Remove:
 - Water pump seal "1"

TIP

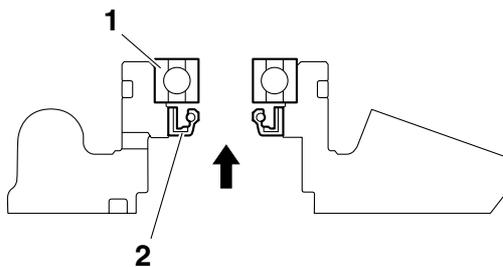
Remove the water pump seal from the inside of the water pump housing.



3. Remove:
 - Bearing "1"
 - Oil seal "2"

TIP

Remove the bearing and oil seal from the outside of the water pump housing.



EAS26550

CHECKING THE WATER PUMP

1. Check:
 - Water pump housing cover
 - Water pump housing
 - Impeller shaftCracks/damage/wear → Replace.
2. Check:
 - BearingRough movement → Replace.

EAS26570

ASSEMBLING THE WATER PUMP

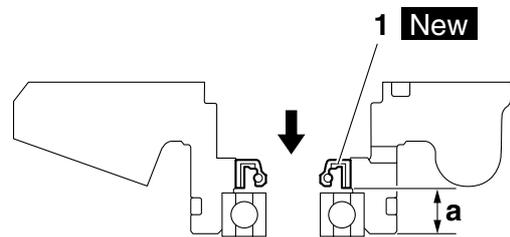
1. Install:
 - Oil seal "1" **New**
(into the water pump housing)

TIP

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



Installed depth of oil seal "a"
8.1–8.7 mm (0.32–0.34 in)



2. Install:
 - Water pump seal "1" **New**

TIP

- Install the water pump seal with the special tools.
- Before installing the water pump seal, apply Yamaha bond No.1215 (Three Bond No.1215®) "2" to the water pump housing "3".

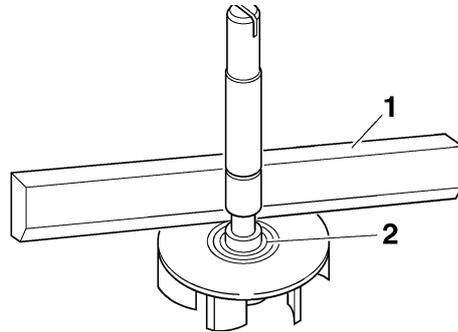
WATER PUMP (YP250R)



Mechanical seal installer
90890-04132
Water pump seal installer
YM-33221-A
Middle driven shaft bearing driver
90890-04058
Bearing driver 40 mm
YM-04058
Yamaha bond No. 1215
90890-85505
(Three Bond No.1215®)



Impeller shaft tilt limit
0.15 mm (0.0059 in)

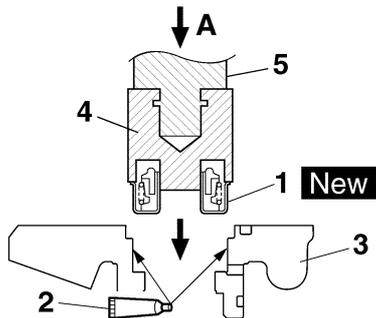


1. Straightedge
2. Impeller

5. Install:
 - Impeller shaft
 - Circlip **New**

TIP

After installation, check that the impeller shaft rotates smoothly.

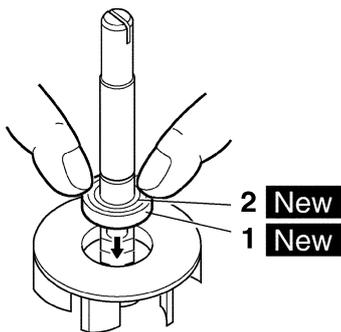


- A. Push down
4. Mechanical seal installer
5. Middle driven shaft bearing driver

3. Install:
 - Rubber damper "1" **New**
 - Rubber damper holder "2" **New**

TIP

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



4. Measure:
 - Impeller shaft tilt
 Out of specification → Repeat steps (3) and (4).

ECA14090

NOTICE

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

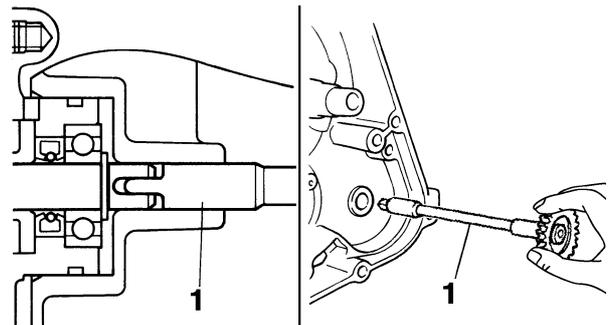
EAS26580

INSTALLING THE WATER PUMP

1. Install:
 - Impeller shaft gear "1"

TIP

Align the slot on the impeller shaft with the projection on the impeller shaft gear when installing.



2. Fill:
 - Cooling system (with the specified amount of the recommended coolant)
 Refer to "CHANGING THE COOLANT" on page 3-32.
3. Check:
 - Cooling system
 Leaks → Repair or replace any faulty part.

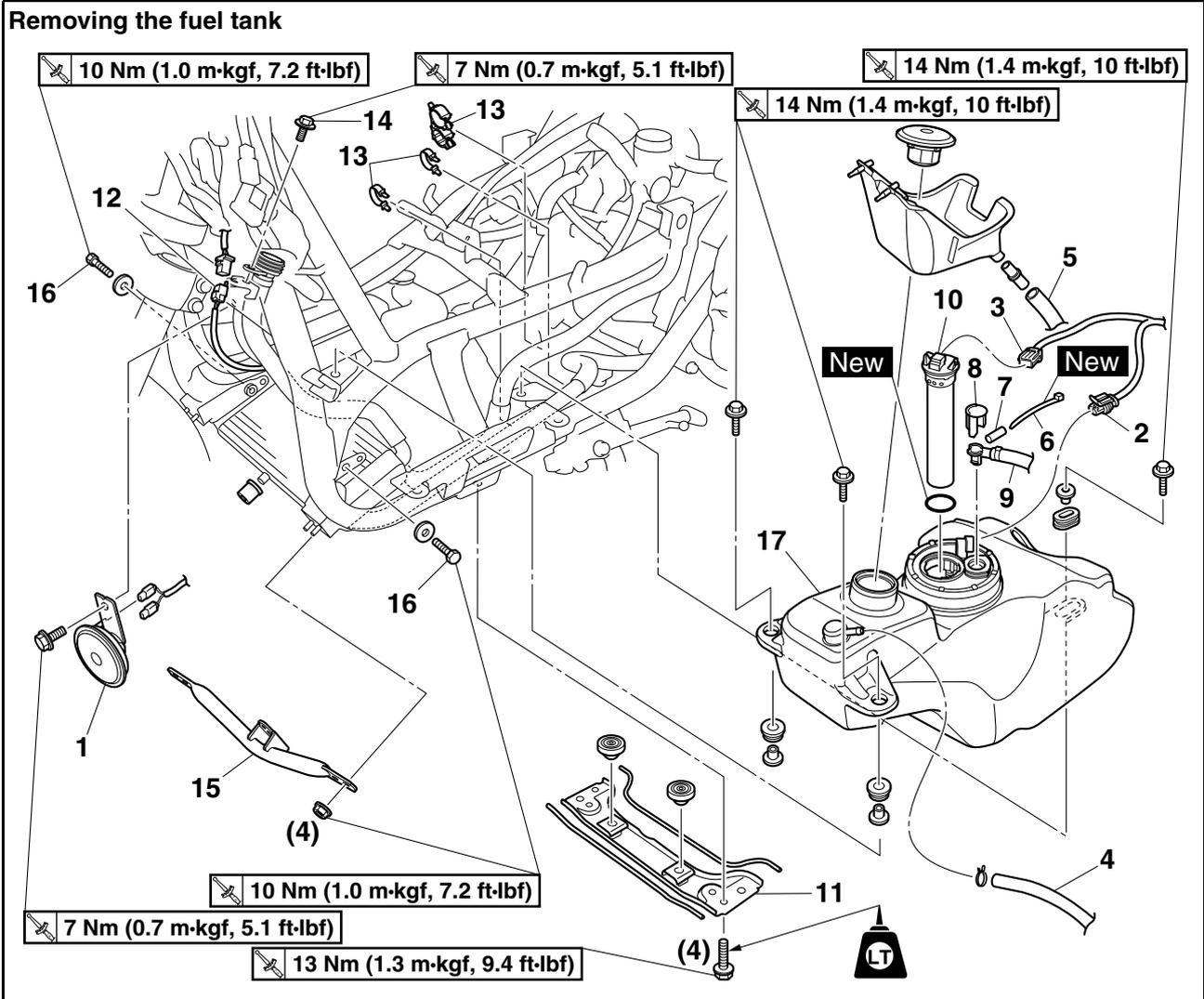
FUEL SYSTEM

FUEL TANK	7-1
REMOVING THE FUEL TANK	7-3
CHECKING THE FUEL PRESSURE	7-3
INSTALLING THE FUEL TANK.....	7-4
THROTTLE BODY	7-5
REMOVING THE FUEL HOSE	7-9
CHECKING THE FUEL INJECTOR	7-9
CHECKING THE THROTTLE BODY	7-9
INSTALLING THE INTAKE MANIFOLD (YP125R)	7-9
INSTALLING THE INTAKE MANIFOLD (YP250R)	7-9
INSTALLING THE FUEL HOSE	7-10
INSTALLING THE THROTTLE BODY	7-10
CHECKING THE THROTTLE POSITION SENSOR	7-10
CHECKING THE ISC (IDLE SPEED CONTROL) UNIT	7-10

EAS26620

FUEL TANK

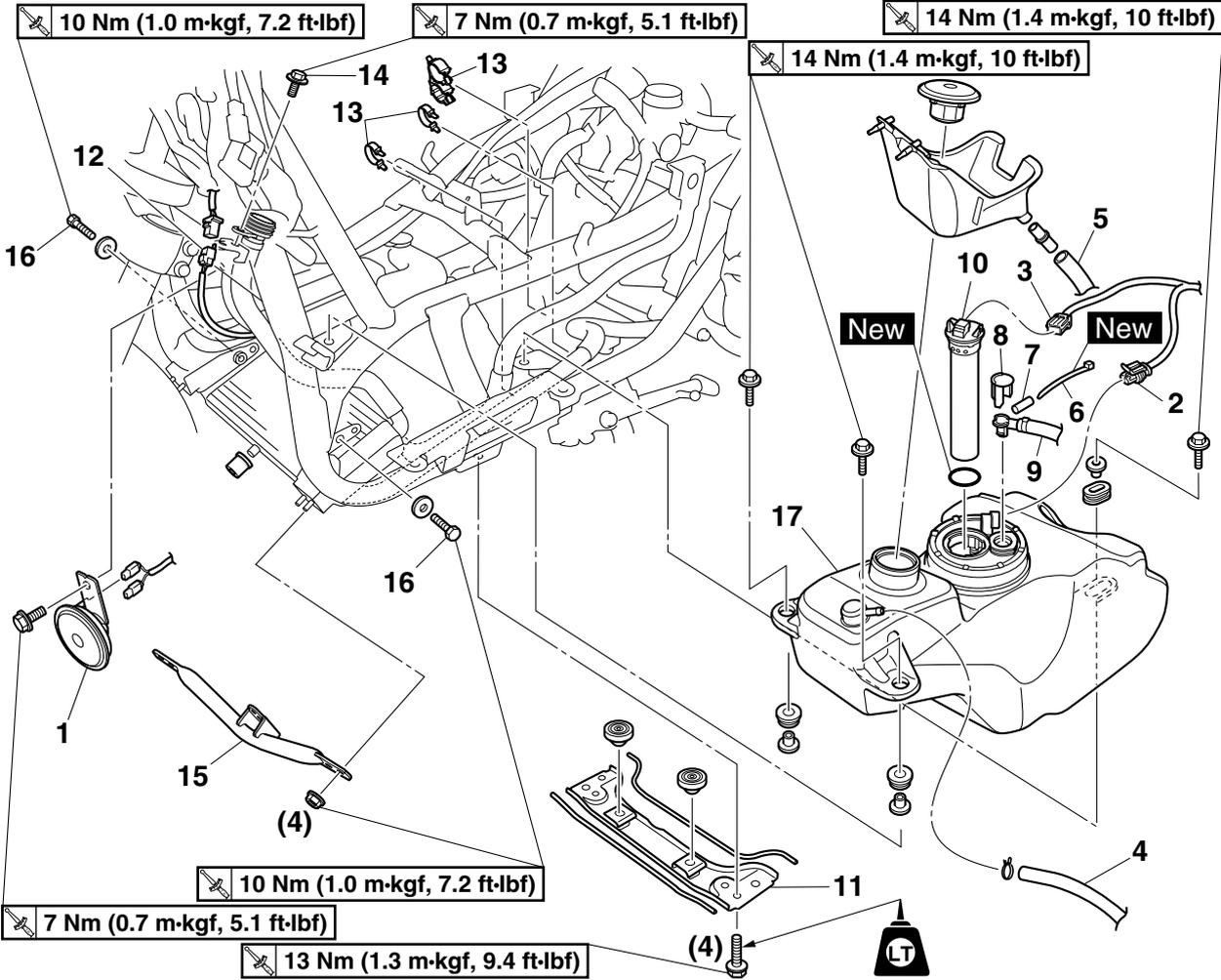
Removing the fuel tank



Order	Job/Parts to remove	Q'ty	Remarks
	Storage box/Front cowling assembly/Bottom cover		Refer to "GENERAL CHASSIS" on page 4-1.
1	Horn	1	
2	Fuel pump coupler	1	Disconnect.
3	Fuel sender coupler	1	Disconnect.
4	Fuel tank breather hose	1	
5	Fuel tank overflow hose	1	
6	Plastic locking tie	1	YP250R only
7	Tube	1	YP250R only
8	Fuel hose connector cover	1	
9	Fuel hose	1	Disconnect.
10	Fuel sender	1	
11	Fuel tank bracket	1	
12	Radiator fan motor coupler	1	Disconnect.
13	Clamp	3	
14	Radiator cap holder bolt	1	

FUEL TANK

Removing the fuel tank



Order	Job/Parts to remove	Q'ty	Remarks
15	Radiator bracket	1	
16	Radiator bolt	2	
17	Fuel tank	1	
			For installation, reverse the removal procedure.

EAS26630

REMOVING THE FUEL TANK

1. Extract the fuel in the fuel tank through the fuel tank filler hole with a pump.
2. Remove:
 - Fuel hose connector cover “1”
3. Remove:
 - Fuel hose “2”

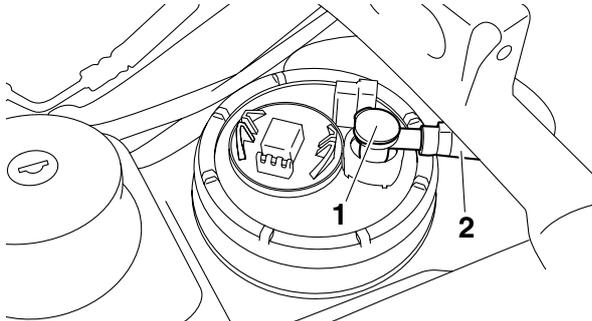
ECA37P1023

NOTICE

- Be sure to disconnect the fuel hose by hand. Do not forcefully disconnect the hose with tools.
- Although the fuel has been removed from the fuel tank, be careful when removing the fuel hose, since there may be fuel remaining in it.
- Do not disconnect the fuel hose from the fuel hose connector. Disconnect the connector from the fuel pump.

TIP

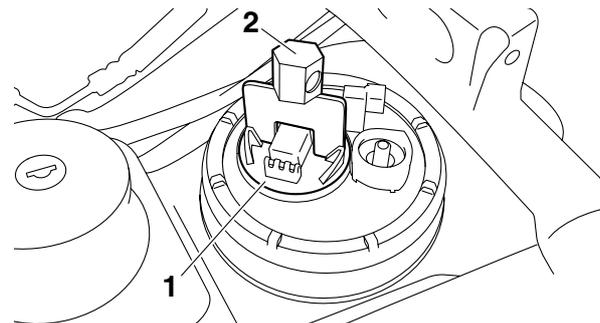
Before removing the hose, place a few rags in the area under where it will be removed.



4. Remove:
 - Fuel sender “1”

TIP

Remove the fuel sender with the fuel sender wrench “2”.



5. Remove:
 - Fuel tank

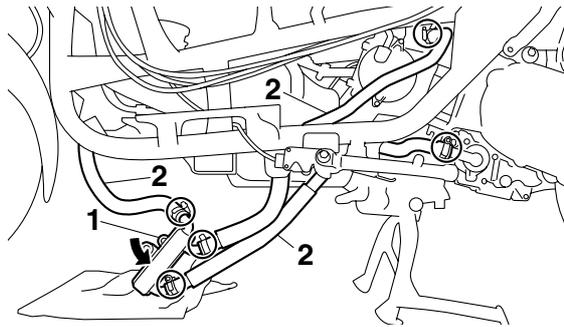
TIP

To remove the fuel tank, lower the radiator “1”.

ECA37P1021

NOTICE

When removing the fuel tank, be sure not to pull forcefully on the radiator hoses “2”.



EAS37P1071

CHECKING THE FUEL PRESSURE

1. Check:
 - Pressure regulator operation



- a. Remove the fuel hose connector cover “1”, and then remove the fuel hose “2” from the fuel pump.

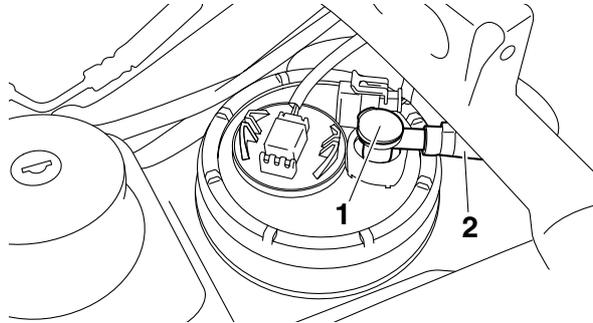
ECA37P1024

NOTICE

Although the fuel has been removed from the fuel tank, be careful when removing the fuel hose, since there may be fuel remaining in it.

TIP

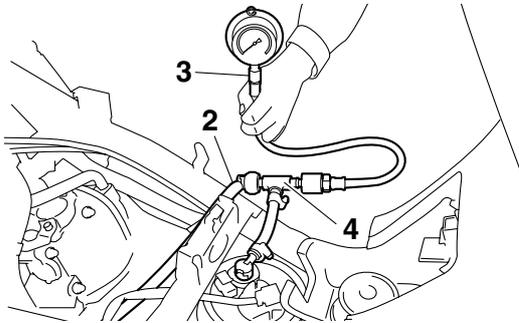
Before removing the hose, place a few rags in the area under where it will be removed.



- b. Connect the pressure gauge “3” and fuel pressure adapter “4”.



Pressure gauge
90890-03153
YU-03153
Fuel pressure adapter
90890-03181



- c. Start the engine.
- d. Measure the fuel pressure.



Output pressure
250.0 kPa (2.50 kgf/cm², 36.3
psi)

Faulty → Replace the fuel tank (with fuel pump).

- e. Connect the fuel hose and install the fuel hose connector cover.
- Refer to “INSTALLING THE FUEL TANK” on page 7-4.



EAS37P1072

INSTALLING THE FUEL TANK

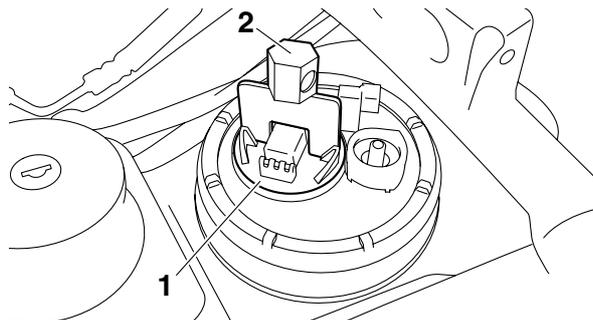
- 1. Install:
 - Gasket **New**
 - Fuel sender “1”

TIP

Install the fuel sender with the fuel sender wrench “2”.



Fuel sender wrench
90890-11098



- 2. Install:
 - Fuel hose
 - Fuel hose connector cover

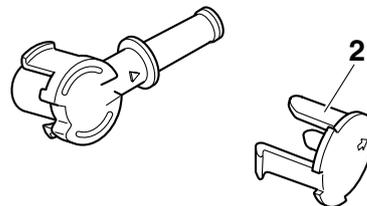
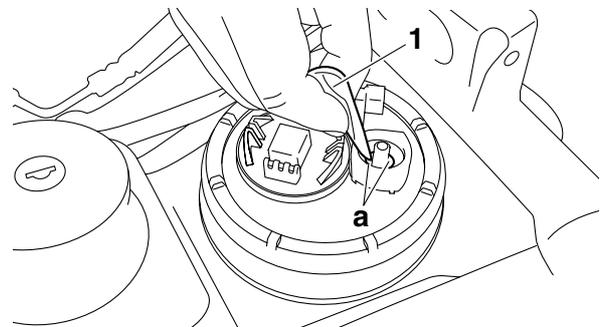
ECA37P1022

NOTICE

When installing the fuel hose, make sure that it is securely connected, and that the fuel hose connector cover is in the correct position, otherwise the fuel hose will not be properly installed.

TIP

- Wipe up any fuel remaining in the recess “a” in the fuel pump with a dry rag “1”.
- After installing the fuel hose connector cover “2”, make sure that it is installed securely.

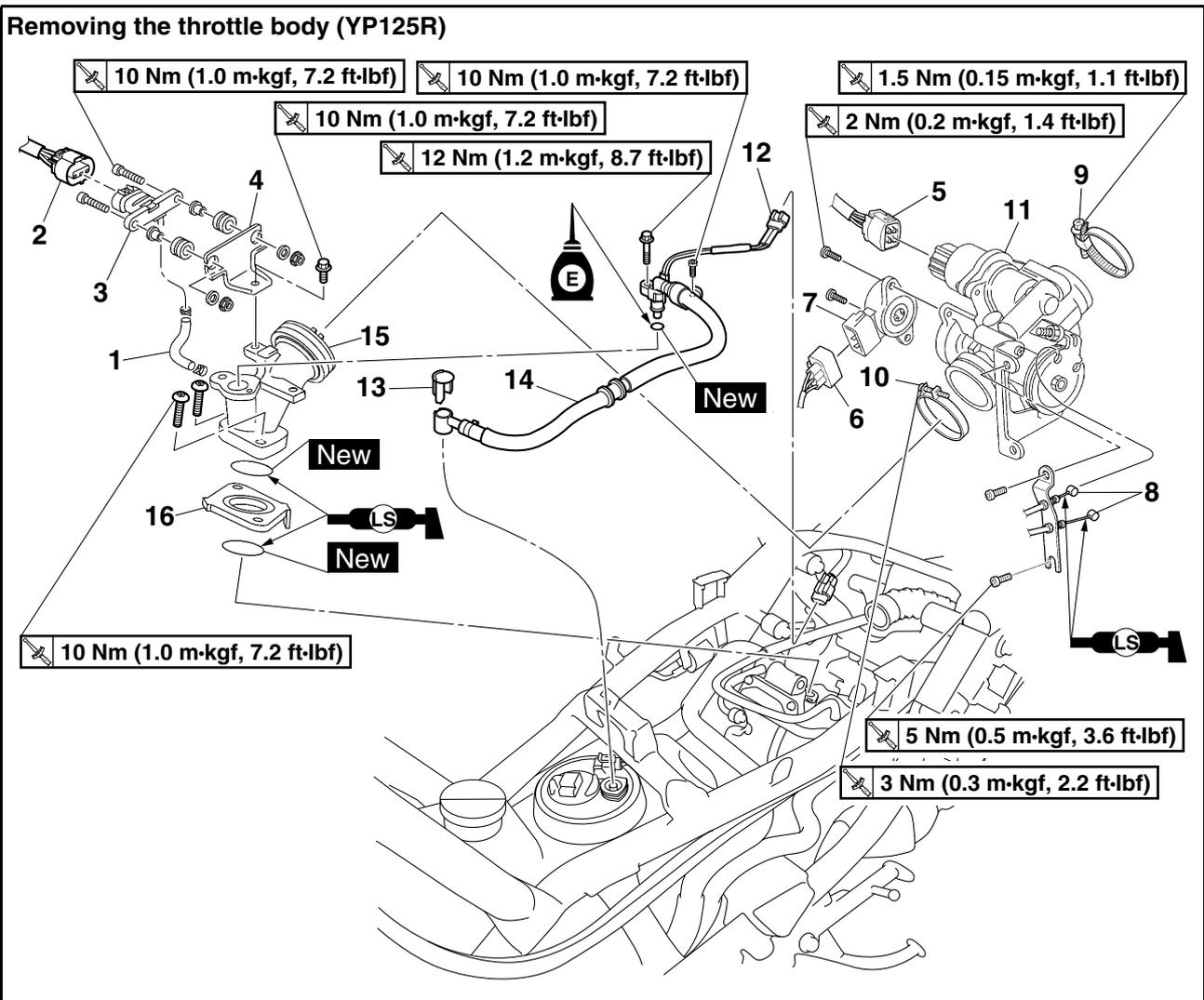


THROTTLE BODY

EAS26970

THROTTLE BODY

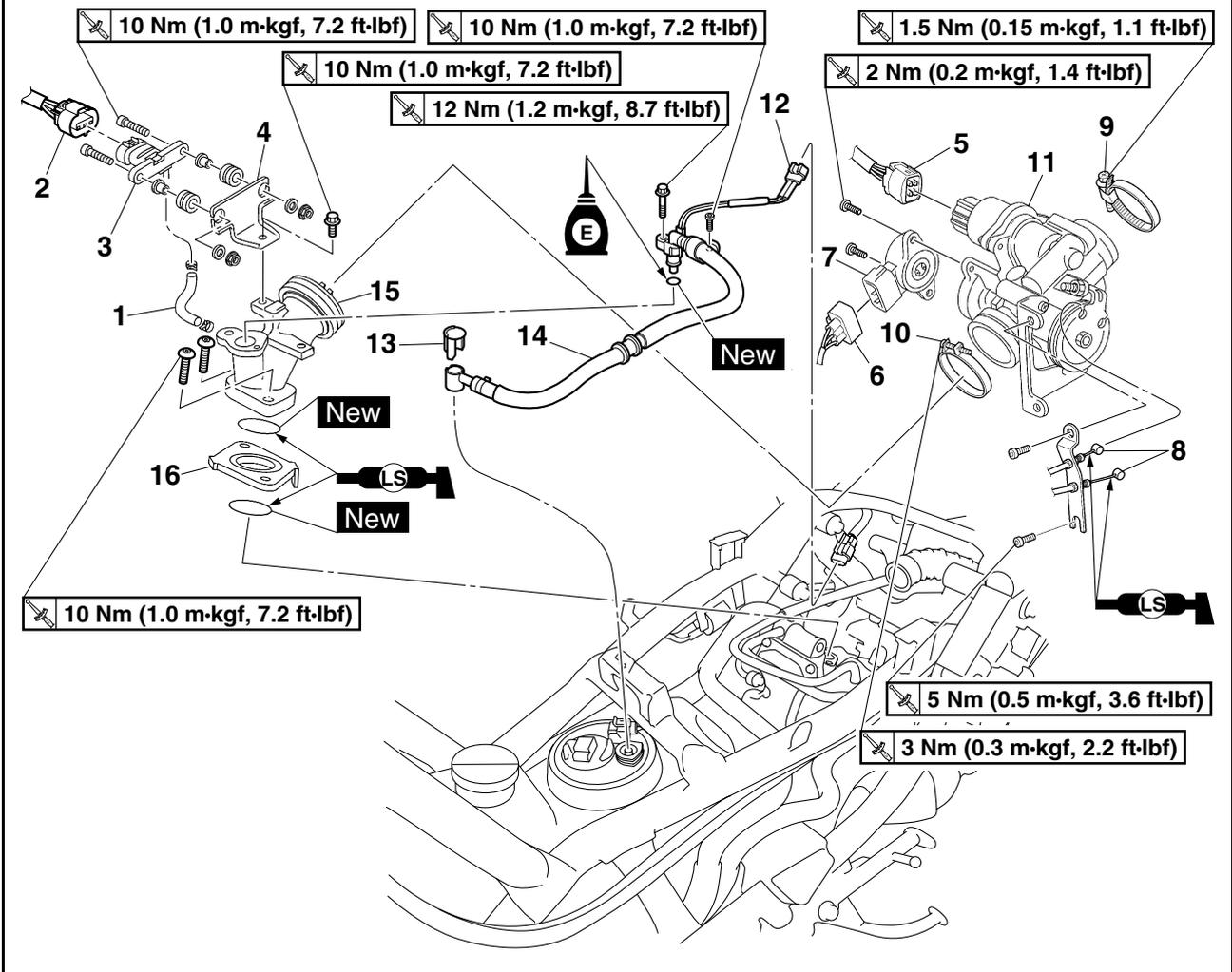
Removing the throttle body (YP125R)



Order	Job/Parts to remove	Q'ty	Remarks
	Storage box/Footrest board		Refer to "GENERAL CHASSIS" on page 4-1.
1	Intake air pressure sensor hose	1	
2	Intake air pressure sensor coupler	1	Disconnect.
3	Intake air pressure sensor	1	
4	Intake air pressure sensor bracket	1	
5	ISC (idle speed control) unit coupler	1	Disconnect.
6	Throttle position sensor coupler	1	Disconnect.
7	Throttle position sensor	1	
8	Throttle cable	2	Disconnect.
9	Air filter case joint clamp screw	1	Loosen.
10	Throttle body joint clamp screw	1	Loosen.
11	Throttle body	1	
12	Fuel injector coupler	1	Disconnect.
13	Fuel hose connector cover	1	
14	Fuel injector assembly	1	

THROTTLE BODY

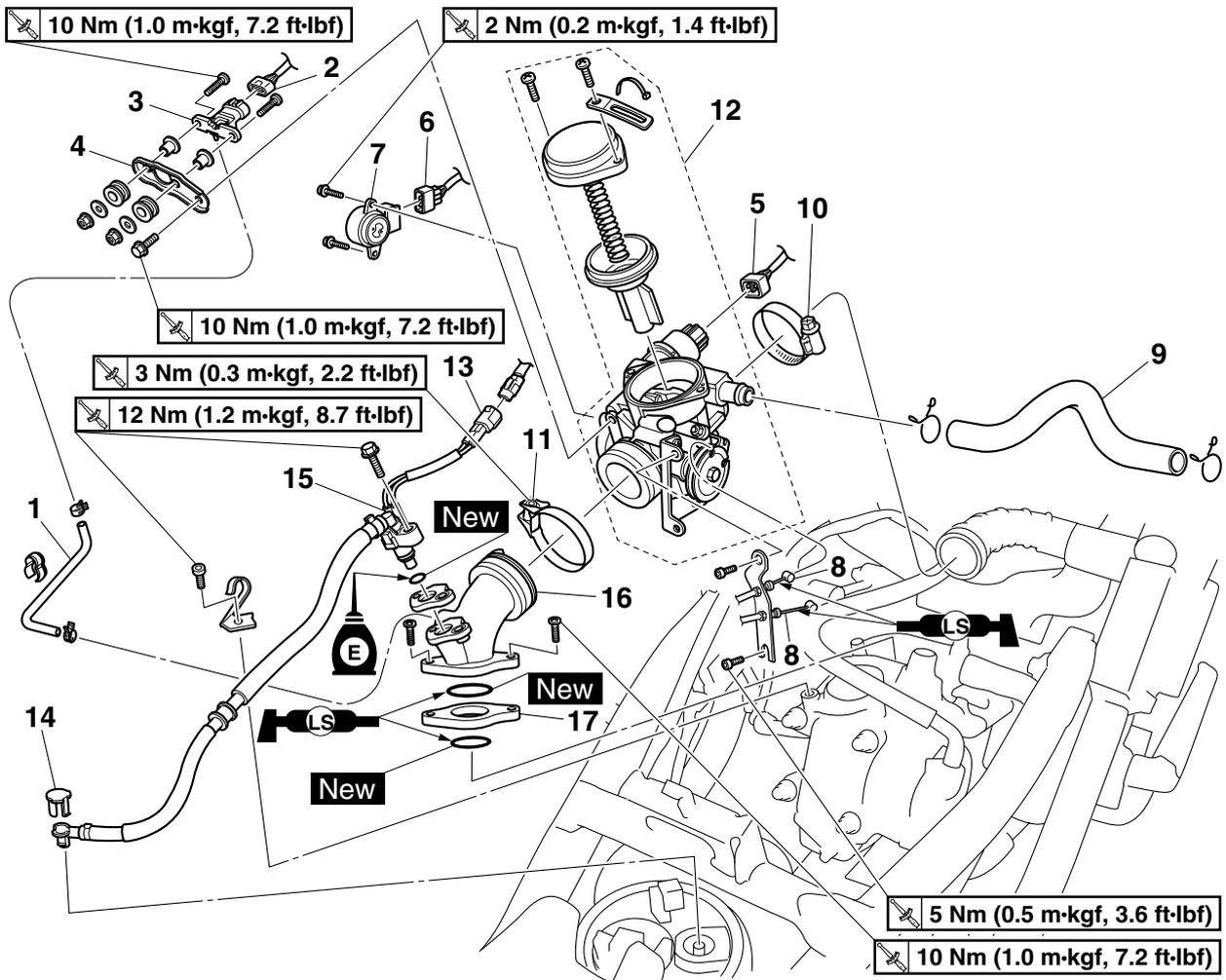
Removing the throttle body (YP125R)



Order	Job/Parts to remove	Q'ty	Remarks
15	Intake manifold	1	
16	Intake manifold joint	1	
			For installation, reverse the removal procedure.

THROTTLE BODY

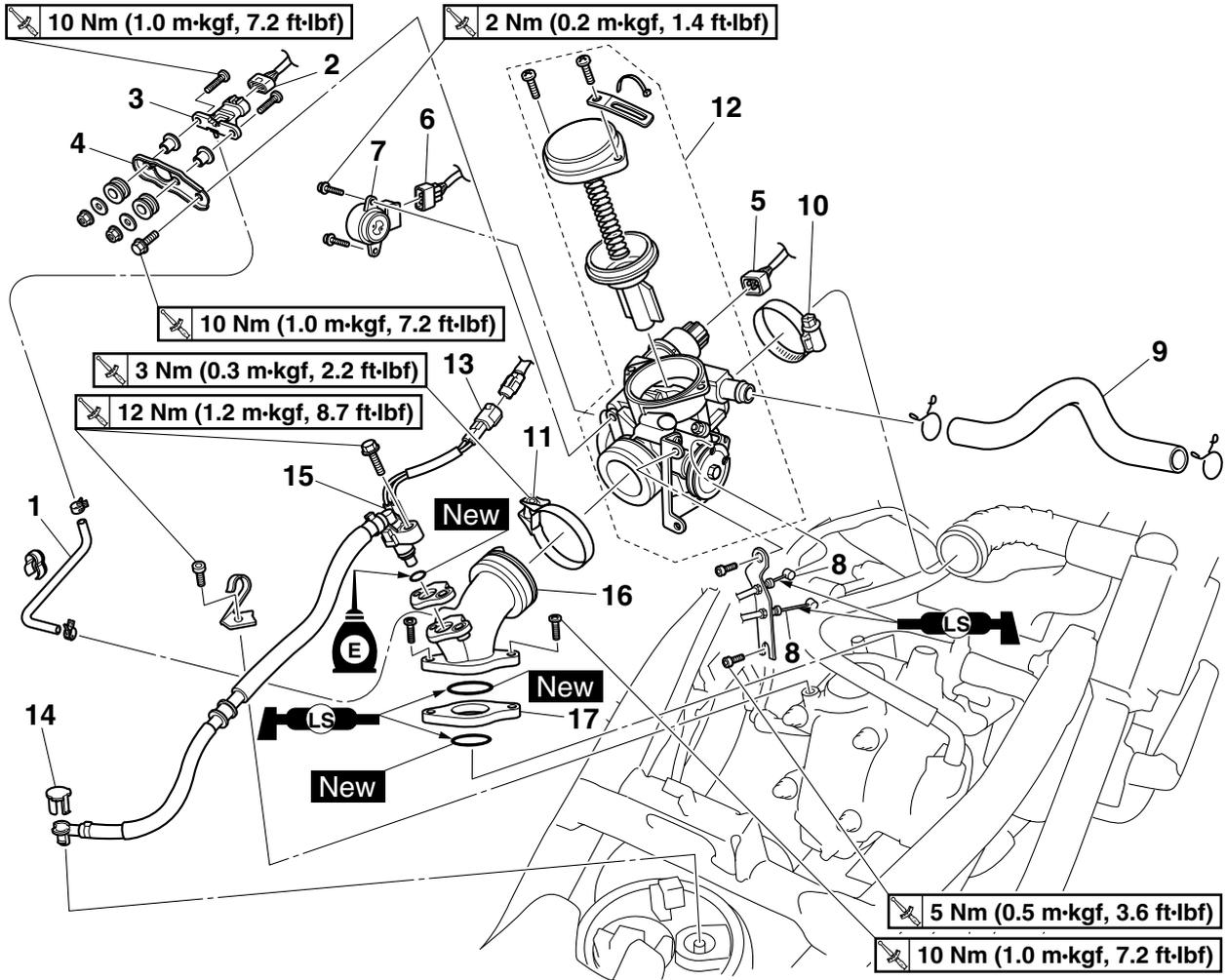
Removing the throttle body (YP250R)



Order	Job/Parts to remove	Q'ty	Remarks
	Storage box/Footrest board		Refer to "GENERAL CHASSIS" on page 4-1.
1	Intake air pressure sensor hose	1	
2	Intake air pressure sensor coupler	1	Disconnect.
3	Intake air pressure sensor	1	
4	Intake air pressure sensor bracket	1	
5	ISC (idle speed control) unit coupler	1	Disconnect.
6	Throttle position sensor coupler	1	Disconnect.
7	Throttle position sensor	1	
8	Throttle cable	2	Disconnect.
9	Breather hose (air filter case to throttle body)	1	
10	Air filter case joint clamp screw	1	Loosen.
11	Throttle body joint clamp screw	1	Loosen.
12	Throttle body	1	
13	Fuel injector coupler	1	Disconnect.
14	Fuel hose connector cover	1	
15	Fuel injector assembly	1	
16	Intake manifold	1	

THROTTLE BODY

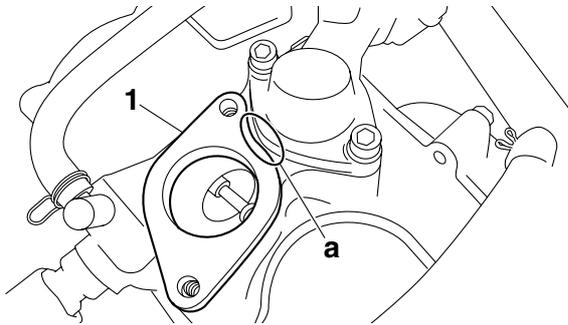
Removing the throttle body (YP250R)



Order	Job/Parts to remove	Q'ty	Remarks
17	Intake manifold joint	1	
			For installation, reverse the removal procedure.

TIP

Make sure that the recess “a” in the intake manifold joint is aligned with the thermostat cover.



EAS37P1075

INSTALLING THE FUEL HOSE

1. Install:

- Fuel hose
- Fuel hose connector cover

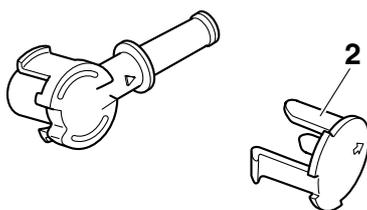
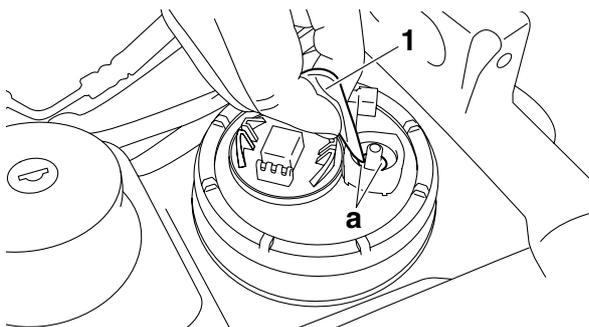
ECA37P1026

NOTICE

When installing the fuel hose, make sure that it is securely connected, and that the fuel hose connector cover is in the correct position, otherwise the fuel hose will not be properly installed.

TIP

- Wipe up any fuel remaining in the recess “a” in the fuel pump with a dry rag “1”.
- After installing the fuel hose connector cover “2”, make sure that it is installed securely.



EAS37P1076

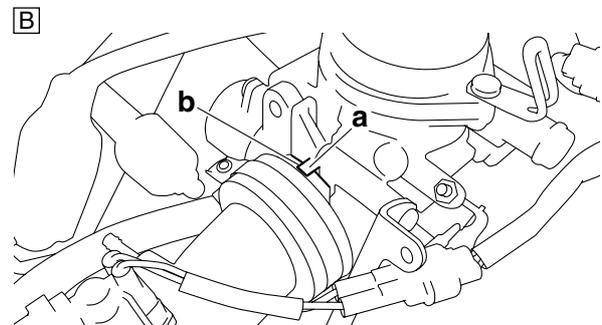
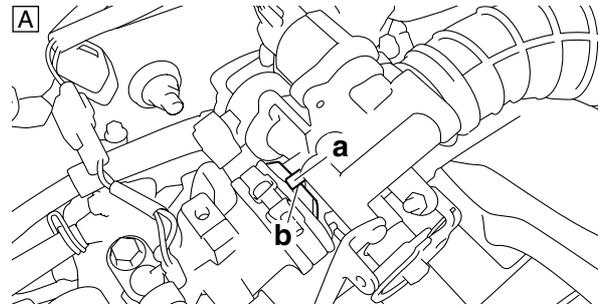
INSTALLING THE THROTTLE BODY

1. Install:

- Throttle body

TIP

Align the projection “a” on the throttle body with the slot “b” in the throttle body joint.



- A. YP125R
- B. YP250R

EAS37P1077

CHECKING THE THROTTLE POSITION SENSOR

1. Check:

- Throttle position sensor
Refer to “CHECKING THE THROTTLE POSITION SENSOR” on page 8-88.

EAS37P1078

CHECKING THE ISC (IDLE SPEED CONTROL) UNIT

1. Check:

- ISC (idle speed control) unit
Refer to “CHECKING THE ISC (IDLE SPEED CONTROL) UNIT” on page 8-90.

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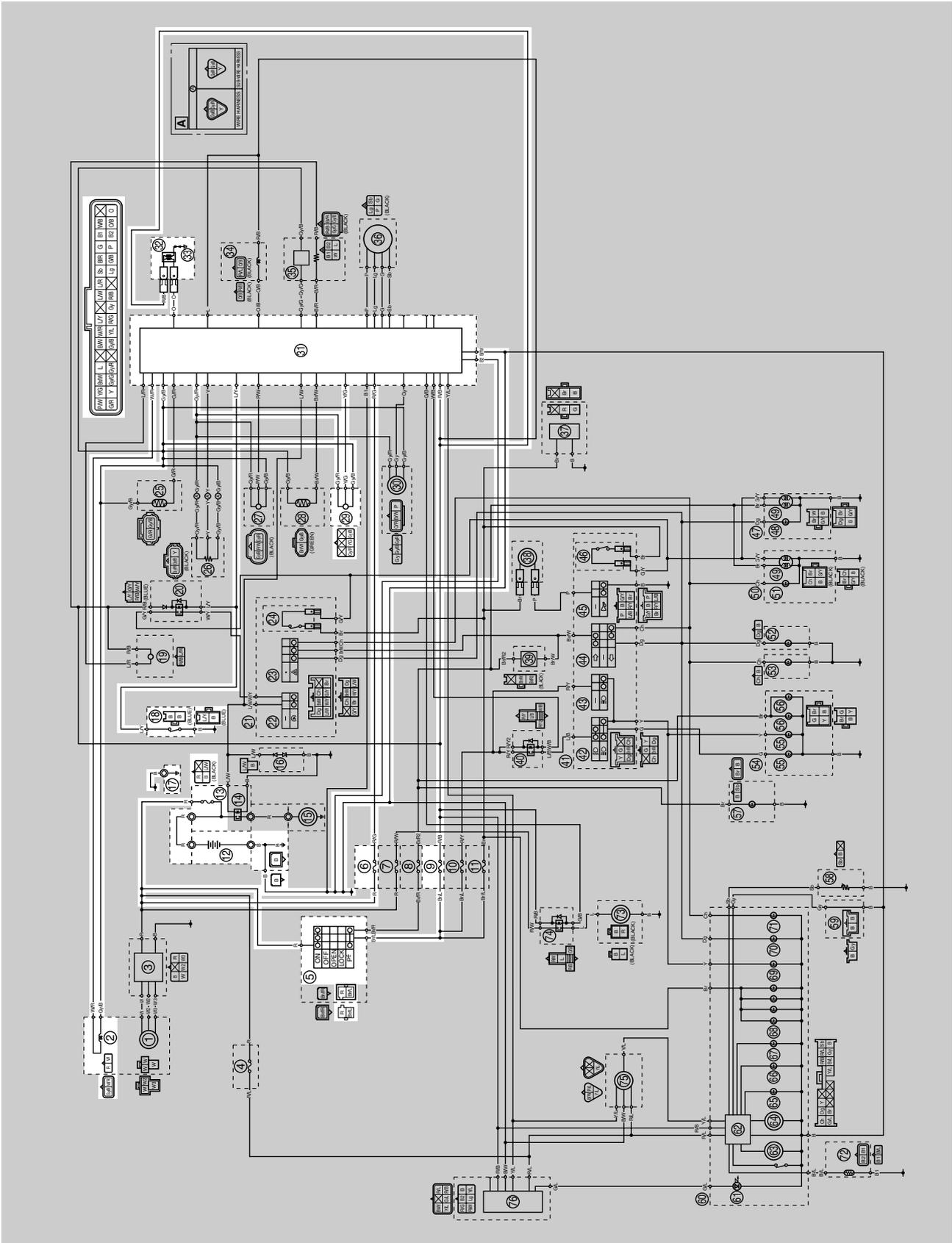
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EAS27090

IGNITION SYSTEM

EAS27100

CIRCUIT DIAGRAM



IGNITION SYSTEM

- 2. Crankshaft position sensor
- 5. Main switch
- 6. ECU fuse
- 9. Ignition fuse
- 12. Battery
- 13. Main fuse
- 17. Frame ground
- 18. Sidestand switch
- 29. Lean angle sensor
- 31. ECU (engine control unit)
- 32. Ignition coil
- 33. Spark plug

EAS27120

TROUBLESHOOTING

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

TIP

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

1. Storage box
2. Front cowling
3. Storage compartment
4. Footrest board

<p>1. Check the fuses. (Main, ECU, and ignition) Refer to "CHECKING THE FUSES" on page 8-77.</p>	<p>NG →</p>	<p>Replace the fuse(s).</p>
<p>OK ↓</p>		
<p>2. Check the battery. Refer to "CHECKING AND CHARGING THE BATTERY" on page 8-78.</p>	<p>NG →</p>	<ul style="list-style-type: none"> • Clean the battery terminals. • Recharge or replace the battery.
<p>OK ↓</p>		
<p>3. Check the spark plug. Refer to "CHECKING THE SPARK PLUG" on page 3-24.</p>	<p>NG →</p>	<p>Re-gap or replace the spark plug.</p>
<p>OK ↓</p>		
<p>4. Check the ignition spark gap. Refer to "CHECKING THE IGNITION SPARK GAP" on page 8-83.</p>	<p>OK →</p>	<p>Ignition system is OK.</p>
<p>NG ↓</p>		
<p>5. Check the spark plug cap. Refer to "CHECKING THE SPARK PLUG CAP" on page 8-82.</p>	<p>NG →</p>	<p>Replace the spark plug cap.</p>
<p>OK ↓</p>		
<p>6. Check the ignition coil. Refer to "CHECKING THE IGNITION COIL" on page 8-82.</p>	<p>NG →</p>	<p>Replace the ignition coil.</p>
<p>OK ↓</p>		
<p>7. Check the crankshaft position sensor. Refer to "CHECKING THE CRANKSHAFT POSITION SENSOR" on page 8-83.</p>	<p>NG →</p>	<p>Replace the crankshaft position sensor/stator assembly.</p>
<p>OK ↓</p>		

IGNITION SYSTEM

8. Check the main switch.
Refer to "CHECKING THE SWITCHES" on page 8-73.

NG →

Replace the main switch/immobilizer unit.

OK ↓

9. Check the sidestand switch.
Refer to "CHECKING THE SWITCHES" on page 8-73.

NG →

Replace the sidestand switch.

OK ↓

10. Check the lean angle sensor.
Refer to "CHECKING THE LEAN ANGLE SENSOR" on page 8-84.

NG →

Replace the lean angle sensor.

OK ↓

11. Check the entire ignition system wiring.
Refer to "CIRCUIT DIAGRAM" on page 8-1.

NG →

Properly connect or repair the ignition system wiring.

OK ↓

Replace the ECU.

ELECTRIC STARTING SYSTEM

- 5. Main switch
- 9. Ignition fuse
- 11. Signaling system fuse
- 12. Battery
- 13. Main fuse
- 14. Starter relay
- 15. Starter motor
- 16. Diode
- 17. Frame ground
- 18. Sidestand switch
- 20. Starting circuit cut-off relay
- 22. Start switch
- 24. Front brake light switch
- 46. Rear brake light switch

ELECTRIC STARTING SYSTEM

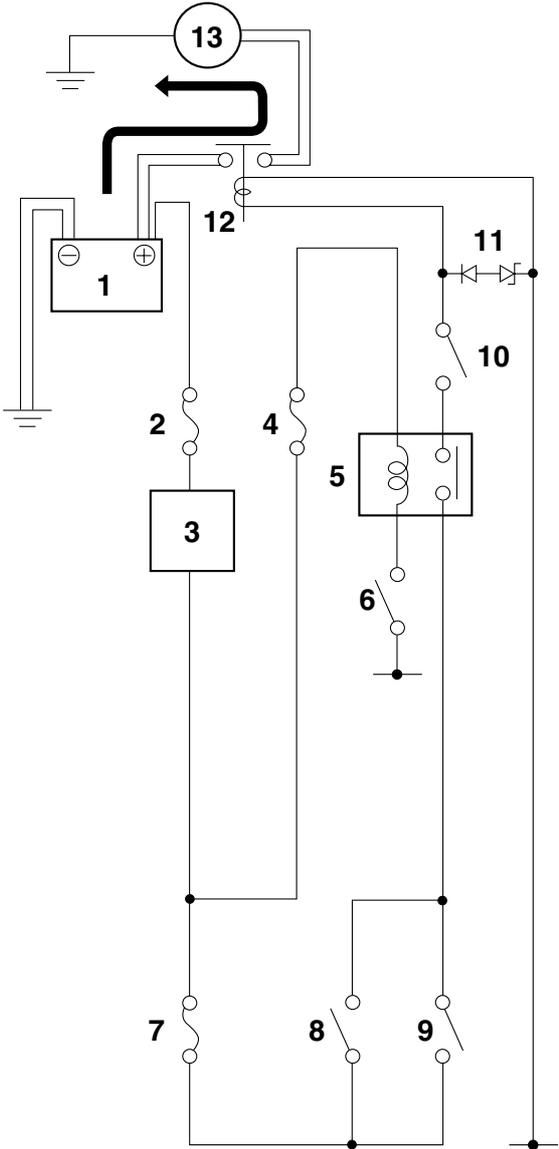
EAS27180

STARTING CIRCUIT CUT-OFF SYSTEM OPERATION

If the main switch is set to “ON” (switch circuit is closed), the starter motor can only operate if the following conditions are met:

- The brake lever is pulled to the handlebar (the brake switch is closed) and the sidestand is up (the sidestand switch is closed).

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



ELECTRIC STARTING SYSTEM

1. Battery
2. Main fuse
3. Main switch
4. Ignition fuse
5. Starting circuit cut-off relay
6. Sidestand switch
7. Signaling system fuse
8. Front brake light switch
9. Rear brake light switch
10. Start switch
11. Diode
12. Starter relay
13. Starter motor

ELECTRIC STARTING SYSTEM

EAS27190

TROUBLESHOOTING

The starter motor fails to turn.

TIP

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

1. Storage box
2. Front cowling
3. Storage compartment

1. Check the fuses. (Main, ignition, and signaling system) Refer to "CHECKING THE FUSES" on page 8-77.	NG →	Replace the fuse(s).
OK ↓		
2. Check the battery. Refer to "CHECKING AND CHARGING THE BATTERY" on page 8-78.	NG →	<ul style="list-style-type: none">• Clean the battery terminals.• Recharge or replace the battery.
OK ↓		
3. Check the starter motor operation. Refer to "CHECKING THE STARTER MOTOR OPERATION" on page 8-84.	OK →	Starter motor is OK. Perform the electric starting system troubleshooting, starting with step 5.
NG ↓		
4. Check the starter motor. Refer to "CHECKING THE STARTER MOTOR" on page 5-46 and "CHECKING THE STARTER MOTOR" on page 5-106.	NG →	Repair or replace the starter motor.
OK ↓		
5. Check the starting circuit cut-off relay. Refer to "CHECKING THE RELAYS" on page 8-80.	NG →	Replace the starting circuit cut-off relay.
OK ↓		
6. Check the starter relay. Refer to "CHECKING THE RELAYS" on page 8-80.	NG →	Replace the starter relay.
OK ↓		
7. Check the main switch. Refer to "CHECKING THE SWITCHES" on page 8-73.	NG →	Replace the main switch/immobilizer unit.
OK ↓		

ELECTRIC STARTING SYSTEM

8. Check the sidestand switch.
Refer to "CHECKING THE SWITCHES" on page 8-73.

NG →

Replace the sidestand switch.

OK ↓

9. Check the brake light switches
(front and rear).
Refer to "CHECKING THE SWITCHES" on page 8-73.

NG →

Replace the brake light switch(es).

OK ↓

10. Check the start switch.
Refer to "CHECKING THE SWITCHES" on page 8-73.

NG →

The start switch is faulty. Replace the right handlebar switch.

OK ↓

11. Check the entire starting system wiring.
Refer to "CIRCUIT DIAGRAM" on page 8-5.

NG →

Properly connect or repair the starting system wiring.

OK ↓

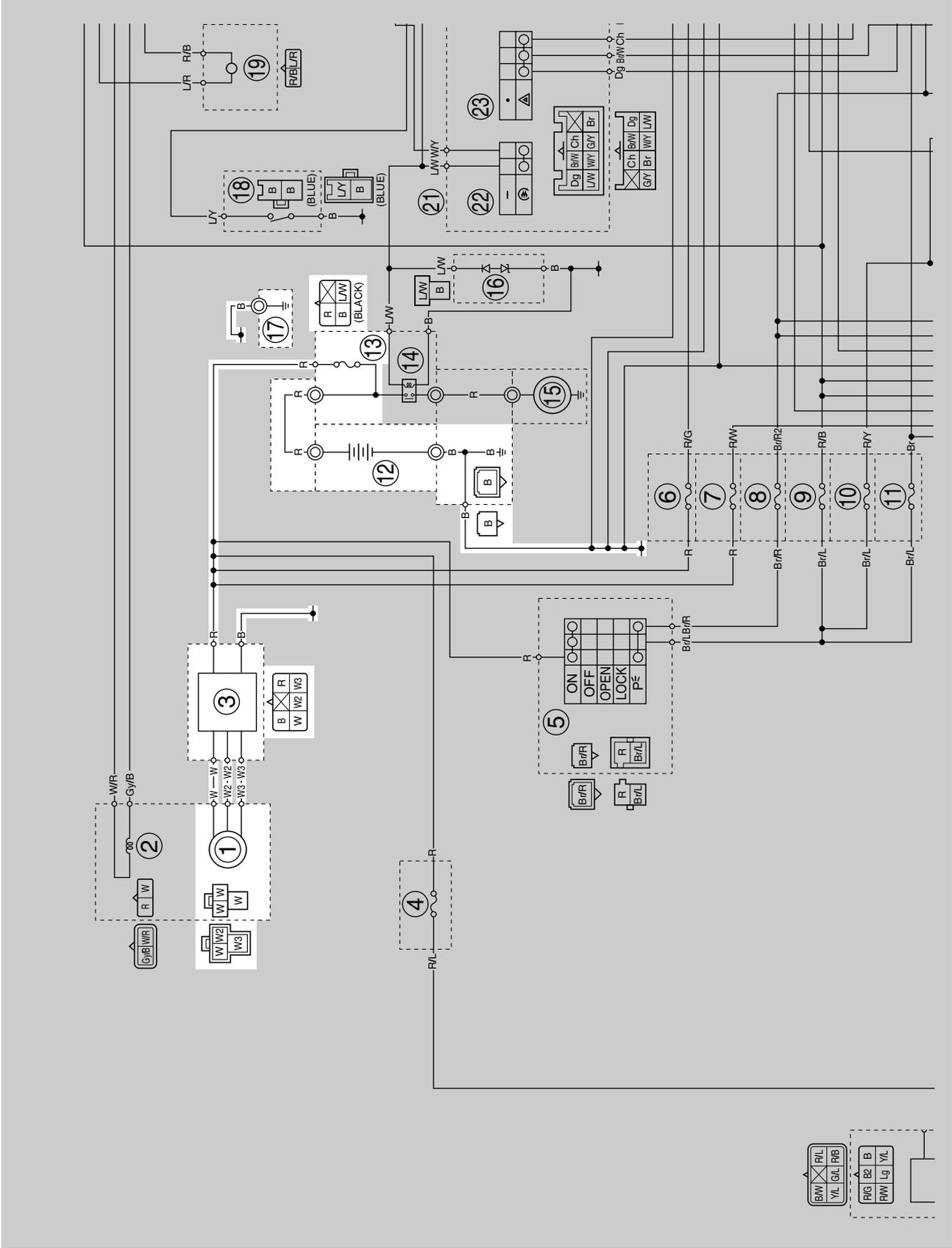
The starting system circuit is OK.

EAS27200

CHARGING SYSTEM

EAS27210

CIRCUIT DIAGRAM



CHARGING SYSTEM

1. AC magneto
3. Rectifier/regulator
12. Battery
13. Main fuse
17. Frame ground

EAS27230

TROUBLESHOOTING

The battery is not being charged.

TIP

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

1. Storage box
2. Front cowling

1. Check the fuse. (Main) Refer to "CHECKING THE FUSES" on page 8-77.	NG →	Replace the fuse.
OK ↓		
2. Check the battery. Refer to "CHECKING AND CHARGING THE BATTERY" on page 8-78.	NG →	<ul style="list-style-type: none">• Clean the battery terminals.• Recharge or replace the battery.
OK ↓		
3. Check the stator coil. Refer to "CHECKING THE STATOR COIL" on page 8-85.	NG →	Replace the crankshaft position sensor/stator assembly.
OK ↓		
4. Check the rectifier/regulator. Refer to "CHECKING THE RECTIFIER/REGULATOR" on page 8-85.	NG →	Replace the rectifier/regulator.
OK ↓		
5. Check the entire charging system wiring. Refer to "CIRCUIT DIAGRAM" on page 8-11.	NG →	Properly connect or repair the charging system wiring.
OK ↓		
The charging system circuit is OK.		

- 5. Main switch
- 6. ECU fuse
- 8. Turn signal/hazard fuse
- 9. Ignition fuse
- 10. Headlight fuse
- 11. Signaling system fuse
- 12. Battery
- 13. Main fuse
- 17. Frame ground
- 31. ECU (engine control unit)
- 40. Headlight relay
- 42. Dimmer switch
- 43. Pass switch
- 49. Tail/brake light
- 55. Headlight
- 56. Auxiliary light
- 57. License plate light
- 68. Meter light
- 69. High beam indicator light

EAS27260

TROUBLESHOOTING

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

TIP

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

1. Front cowling

<p>1. Check the condition of each bulb and bulb socket. Refer to "CHECKING THE BULBS AND BULB SOCKETS" on page 8-76.</p>	<p>NG →</p>	<p>Replace the bulb(s) and bulb socket(s).</p>
OK ↓		
<p>2. Check the fuses. (Main, headlight, ignition, ECU, turn signal/hazard, and signaling system) Refer to "CHECKING THE FUSES" on page 8-77.</p>	<p>NG →</p>	<p>Replace the fuse(s).</p>
OK ↓		
<p>3. Check the battery. Refer to "CHECKING AND CHARGING THE BATTERY" on page 8-78.</p>	<p>NG →</p>	<ul style="list-style-type: none"> • Clean the battery terminals. • Recharge or replace the battery.
OK ↓		
<p>4. Check the main switch. Refer to "CHECKING THE SWITCHES" on page 8-73.</p>	<p>NG →</p>	<p>Replace the main switch/immobilizer unit.</p>
OK ↓		
<p>5. Check the dimmer switch. Refer to "CHECKING THE SWITCHES" on page 8-73.</p>	<p>NG →</p>	<p>The dimmer switch is faulty. Replace the left handlebar switch.</p>
OK ↓		
<p>6. Check the pass switch. Refer to "CHECKING THE SWITCHES" on page 8-73.</p>	<p>NG →</p>	<p>The pass switch is faulty. Replace the left handlebar switch.</p>
OK ↓		
<p>7. Check the headlight relay. Refer to "CHECKING THE RELAYS" on page 8-80.</p>	<p>NG →</p>	<p>Replace the headlight relay.</p>
OK ↓		

LIGHTING SYSTEM

8. Check the entire lighting system wiring.
Refer to "CIRCUIT DIAGRAM" on page 8-15.

NG →

Properly connect or repair the lighting system wiring.

OK ↓

Replace the ECU or meter assembly.

2. Crankshaft position sensor
5. Main switch
6. ECU fuse
8. Turn signal/hazard fuse
9. Ignition fuse
11. Signaling system fuse
12. Battery
13. Main fuse
17. Frame ground
23. Hazard switch
24. Front brake light switch
25. Coolant temperature sensor
30. Speed sensor
31. ECU (engine control unit)
38. Horn
39. Turn signal/hazard relay
44. Turn signal switch
45. Horn switch
46. Rear brake light switch
48. Right rear turn signal light
49. Tail/brake light
51. Left rear turn signal light
52. Right front turn signal light
53. Left front turn signal light
58. Fuel sender
59. V-belt replacement indicator reset coupler
62. Multifunction meter
63. Speedometer
64. Tachometer
65. Engine oil change indicator
66. V-belt replacement indicator
70. Right turn signal indicator light
71. Left turn signal indicator light
72. Air temperature sensor
75. Self-diagnosis signal coupler

EAS27290

TROUBLESHOOTING

- Any of the following fail to light: turn signal lights, brake lights, warning light or indicator lights.
- The horn fails to sound.
- The fuel meter fails to operate.
- The coolant temperature meter fails to operate.
- The speedometer fails to operate.
- The tachometer fails to operate.
- The air temperature meter fails to operate.

TIP

- Before troubleshooting, remove the following part(s):
 1. Storage box
 2. Front cowling

<p>1. Check the fuses. (Main, signaling system, ignition, ECU, and turn signal/hazard) Refer to "CHECKING THE FUSES" on page 8-77.</p>	<p>NG →</p>	<p>Replace the fuse(s).</p>
<p>OK ↓</p>		
<p>2. Check the battery. Refer to "CHECKING AND CHARGING THE BATTERY" on page 8-78.</p>	<p>NG →</p>	<ul style="list-style-type: none"> • Clean the battery terminals. • Recharge or replace the battery.
<p>OK ↓</p>		
<p>3. Check the main switch. Refer to "CHECKING THE SWITCHES" on page 8-73.</p>	<p>NG →</p>	<p>Replace the main switch/immobilizer unit.</p>
<p>OK ↓</p>		
<p>4. Check the entire signaling system wiring. Refer to "CIRCUIT DIAGRAM" on page 8-19.</p>	<p>NG →</p>	<p>Properly connect or repair the signaling system wiring.</p>
<p>OK ↓</p>		
<p>Check the condition of each of the signaling system circuits. Refer to "Checking the signaling system".</p>		

Checking the signaling system

The horn fails to sound.

<p>1. Check the horn switch. Refer to "CHECKING THE SWITCHES" on page 8-73.</p>	<p>NG →</p>	<p>The horn switch is faulty. Replace the left handlebar switch.</p>
<p>OK ↓</p>		

SIGNALING SYSTEM

2. Check the horn.
Refer to "CHECKING THE HORN"
on page 8-85.

NG →

Replace the horn.

OK ↓

3. Check the entire signaling system
wiring.
Refer to "CIRCUIT DIAGRAM" on
page 8-19.

NG →

Properly connect or repair the signaling
system wiring.

OK ↓

This circuit is OK.

The tail/brake light fails to come on.

1. Check the tail/brake light bulb and
socket.
Refer to "CHECKING THE BULBS
AND BULB SOCKETS" on page
8-76.

NG →

Replace the tail/brake light bulb, socket or
both.

OK ↓

2. Check the front brake light switch.
Refer to "CHECKING THE
SWITCHES" on page 8-73.

NG →

Replace the front brake light switch.

OK ↓

3. Check the rear brake light switch.
Refer to "CHECKING THE
SWITCHES" on page 8-73.

NG →

Replace the rear brake light switch.

OK ↓

4. Check the entire signaling system
wiring.
Refer to "CIRCUIT DIAGRAM" on
page 8-19.

NG →

Properly connect or repair the signaling
system wiring.

OK ↓

This circuit is OK.

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

1. Check the turn signal light bulb and
socket.
Refer to "CHECKING THE BULBS
AND BULB SOCKETS" on page
8-76.

NG →

Replace the turn signal light bulb, socket or
both.

OK ↓

SIGNALING SYSTEM

2. Check the turn signal switch. Refer to "CHECKING THE SWITCHES" on page 8-73.	NG →	The turn signal switch is faulty. Replace the left handlebar switch.
OK ↓		
3. Check the hazard switch. Refer to "CHECKING THE SWITCHES" on page 8-73.	NG →	The hazard switch is faulty. Replace the right handlebar switch.
OK ↓		
4. Check the turn signal/hazard relay. Refer to "CHECKING THE TURN SIGNAL/HAZARD RELAY" on page 8-81.	NG →	Replace the turn signal/hazard relay.
OK ↓		
5. Check the entire signaling system wiring. Refer to "CIRCUIT DIAGRAM" on page 8-19.	NG →	Properly connect or repair the signaling system wiring.
OK ↓		
Replace the meter assembly.		
<u>The fuel meter, fuel level warning light, or both fail to come on.</u>		
1. Check the fuel sender. Refer to "CHECKING THE FUEL SENDER" on page 8-86.	NG →	Replace the fuel sender.
OK ↓		
2. Check the entire signaling system wiring. Refer to "CIRCUIT DIAGRAM" on page 8-19.	NG →	Properly connect or repair the signaling system wiring.
OK ↓		
Replace the meter assembly.		
<u>The coolant temperature meter, coolant temperature warning light, or both fail to come on.</u>		
1. Check the coolant temperature sensor. Refer to "CHECKING THE COOLANT TEMPERATURE SENSOR" on page 8-87.	NG →	Replace the coolant temperature sensor.
OK ↓		

SIGNALING SYSTEM

2. Check the entire signaling system wiring.
Refer to "CIRCUIT DIAGRAM" on page 8-19.

NG →

Properly connect or repair the signaling system wiring.

OK ↓

Replace the ECU or meter assembly.

The speedometer fails to operate.

1. Check the speed sensor.
Refer to "CHECKING THE SPEED SENSOR" on page 8-87.

NG →

Replace the speed sensor.

OK ↓

2. Check the entire signaling system wiring.
Refer to "CIRCUIT DIAGRAM" on page 8-19.

NG →

Properly connect or repair the signaling system wiring.

OK ↓

Replace the ECU or meter assembly.

The tachometer fails to operate.

1. Check the crankshaft position sensor.
Refer to "CHECKING THE CRANKSHAFT POSITION SENSOR" on page 8-83.

NG →

Replace the crankshaft position sensor/stator assembly.

OK ↓

2. Check the entire signaling system wiring.
Refer to "CIRCUIT DIAGRAM" on page 8-19.

NG →

Properly connect or repair the signaling system wiring.

OK ↓

Replace the ECU or meter assembly.

The air temperature meter fails to operate.

1. Check the air temperature sensor.
Refer to "CHECKING THE AIR TEMPERATURE SENSOR" on page 8-89.

NG →

Replace the air temperature sensor.

OK ↓

SIGNALING SYSTEM

2. Check the entire signaling system wiring.
Refer to "CIRCUIT DIAGRAM" on page 8-19.

NG →

Properly connect or repair the signaling system wiring.

OK ↓

Replace the meter assembly.

The V-belt replacement indicator fails to come on.

1. Check the V-belt replacement indicator reset coupler.
Refer to "CHECKING THE V-BELT REPLACEMENT INDICATOR RESET COUPLER" on page 8-90.

NG →

Replace the V-belt replacement indicator reset coupler.

OK ↓

2. Check the entire signaling system wiring.
Refer to "CIRCUIT DIAGRAM" on page 8-19.

NG →

Properly connect or repair the signaling system wiring.

OK ↓

Replace the meter assembly.

The engine oil change indicator fails to come on.

1. Check the entire signaling system wiring.
Refer to "CIRCUIT DIAGRAM" on page 8-19.

NG →

Properly connect or repair the signaling system wiring.

OK ↓

Replace the meter assembly.

- 5. Main switch
- 6. ECU fuse
- 7. Radiator fan motor fuse
- 9. Ignition fuse
- 12. Battery
- 13. Main fuse
- 17. Frame ground
- 25. Coolant temperature sensor
- 31. ECU (engine control unit)
- 73. Radiator fan motor
- 74. Radiator fan motor relay

EAS27320

TROUBLESHOOTING

- The radiator fan motor fails to turn.

TIP

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

1. Storage box
2. Front cowling
3. Radiator cover

<p>1. Check the fuses. (Main, ignition, ECU, and radiator fan motor) Refer to "CHECKING THE FUSES" on page 8-77.</p>	<p>NG →</p>	<p>Replace the fuse(s).</p>
<p>OK ↓</p>		
<p>2. Check the battery. Refer to "CHECKING AND CHARGING THE BATTERY" on page 8-78.</p>	<p>NG →</p>	<ul style="list-style-type: none"> • Clean the battery terminals. • Recharge or replace the battery.
<p>OK ↓</p>		
<p>3. Check the main switch. Refer to "CHECKING THE SWITCHES" on page 8-73.</p>	<p>NG →</p>	<p>Replace the main switch/immobilizer unit.</p>
<p>OK ↓</p>		
<p>4. Check the radiator fan motor. Refer to "CHECKING THE RADIATOR FAN MOTOR" on page 8-87.</p>	<p>NG →</p>	<p>Replace the radiator fan motor.</p>
<p>OK ↓</p>		
<p>5. Check the radiator fan motor relay. Refer to "CHECKING THE RELAYS" on page 8-80.</p>	<p>NG →</p>	<p>Replace the radiator fan motor relay.</p>
<p>OK ↓</p>		
<p>6. Check the coolant temperature sensor. Refer to "CHECKING THE COOLANT TEMPERATURE SENSOR" on page 8-87.</p>	<p>NG →</p>	<p>Replace the coolant temperature sensor.</p>
<p>OK ↓</p>		
<p>7. Check the entire cooling system wiring. Refer to "CIRCUIT DIAGRAM" on page 8-27.</p>	<p>NG →</p>	<p>Properly connect or repair the cooling system wiring.</p>
<p>OK ↓</p>		
<p>Replace the ECU.</p>		

FUEL INJECTION SYSTEM

- 2. Crankshaft position sensor
- 4. Backup fuse (immobilizer unit and meter assembly)
- 5. Main switch
- 6. ECU fuse
- 7. Radiator fan motor fuse
- 9. Ignition fuse
- 10. Headlight fuse
- 12. Battery
- 13. Main fuse
- 17. Frame ground
- 18. Sidestand switch
- 19. Fuel pump
- 25. Coolant temperature sensor
- 26. Throttle position sensor
- 27. Intake air pressure sensor
- 28. Intake air temperature sensor
- 29. Lean angle sensor
- 30. Speed sensor
- 31. ECU (engine control unit)
- 32. Ignition coil
- 33. Spark plug
- 34. Fuel injector
- 35. O₂ sensor
- 36. ISC (idle speed control) unit
- 40. Headlight relay
- 62. Multifunction meter
- 67. Engine trouble warning light
- 73. Radiator fan motor
- 74. Radiator fan motor relay
- 75. Self-diagnosis signal coupler
- A. YP250R only

FUEL INJECTION SYSTEM

EAS27350

ECU SELF-DIAGNOSTIC FUNCTION

The ECU is equipped with a self-diagnostic function in order to ensure that the fuel injection system is operating normally. If this function detects a malfunction in the system, it immediately operates the engine under substitute characteristics and illuminates the engine trouble warning light to alert the rider that a malfunction has occurred in the system. Once a malfunction has been detected, a fault code is stored in the memory of the ECU.

- To inform the rider that the fuel injection system is not functioning, the engine trouble warning light flashes when the start switch is being pushed to start the engine.
- If a malfunction is detected in the system by the self-diagnostic function, the ECU provides an appropriate substitute characteristic operation, and alerts the rider of the detected malfunction by illuminating the engine trouble warning light.
- After the engine has been stopped, the lowest fault code number appears on the odometer LCD. Once a fault code has been displayed, it remains stored in the memory of the ECU until it is deleted.

Engine trouble warning light indication and fuel injection system operation

Warning light indication	ECU operation	FI operation	Vehicle operation
Flashing*	Warning provided when unable to start engine	Operation stopped	Cannot be operated
Remains on	Malfunction detected	Operated with substitute characteristics in accordance with the description of the malfunction	Can or cannot be operated depending on the fault code

* The warning light flashes when any one of the conditions listed below is present and the start switch is pushed:

12:	Crankshaft position sensor	30:	Lean angle sensor (latch up detected)
13:	Intake air pressure sensor (open or short circuit)	33:	Faulty ignition
14:	Intake air pressure sensor (clogged or detached hose)	39:	Fuel injector (open or short circuit)
15:	Throttle position sensor (open or short circuit)	41:	Lean angle sensor (open or short circuit)
16:	Throttle position sensor (stuck)	50:	ECU internal malfunction (memory check error)
19:	Blue/yellow ECU lead (broken or disconnected)		

Checking for a defective engine trouble warning light

The engine trouble warning light comes on for 2.0 seconds after the main switch has been set to "ON" and when the start switch is being pushed. If the warning light does not come on under these conditions, the warning light bulb may be defective.

ECU detects an abnormal signal from a sensor

If the ECU detects an abnormal signal from a sensor while the vehicle is being driven, the ECU illuminates the engine trouble warning light and provides the engine with alternate operating instructions that are appropriate for the type of malfunction.

FUEL INJECTION SYSTEM

When an abnormal signal is received from a sensor, the ECU processes the specified values that are programmed for each sensor in order to provide the engine with alternate operating instructions that enable the engine to continue operating or stop operating, depending on the conditions.

EAS27400

TROUBLESHOOTING METHOD

The engine operation is not normal and the engine trouble warning light comes on.

1. Check:

- Fault code number



- Check the fault code number displayed on the meter.
- Identify the faulty system with the fault code number.
- Identify the probable cause of the malfunction.



2. Check and repair the probable cause of the malfunction.

Fault code No.	No fault code No.
Check and repair. Refer to "TROUBLESHOOTING DETAILS" on page 8-36. Monitor the operation of the sensors and actuators in the diagnostic mode. Refer to "TROUBLESHOOTING DETAILS" on page 8-36 and "DIAGNOSTIC CODE TABLE" on page 8-54.	Check and repair.

- Perform the reinstatement action for the fuel injection system.
Refer to "Reinstatement method" in the appropriate table in "TROUBLESHOOTING DETAILS" on page 8-36.
- Set the main switch to "OFF", then to "ON" again, and then check that no fault code number is displayed.

TIP

If another fault code number is displayed, repeat steps (1) to (4) until no fault code number is displayed.

- Erase the malfunction history in the diagnostic mode. Refer to "DIAGNOSTIC CODE TABLE" on page 8-54 (Diagnostic code No. 62).

TIP

Setting the main switch to "OFF" will not erase the malfunction history.

The engine operation is not normal, but the engine trouble warning light does not come on.

- Check the operation of the following sensors and actuators in the Diagnostic mode. Refer to "TROUBLESHOOTING DETAILS" on page 8-36.

01: Throttle position sensor (throttle angle)
30: Ignition coil
36: Fuel injector

If a malfunction is detected in the sensors or actuators, repair or replace all faulty parts. If no malfunction is detected in the sensors and actuators, check and repair the inner parts of the engine.

EAS27441

DIAGNOSTIC MODE

It is only possible to monitor the sensor output data or check the activation of actuators by connecting the FI diagnostic tool to the vehicle and setting the diagnostic mode.

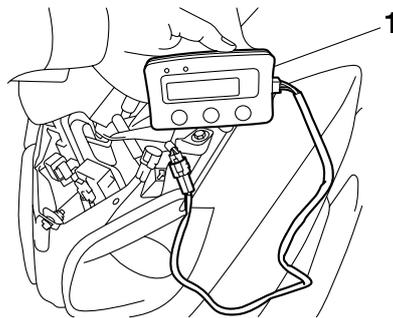
TIP

The diagnostic mode can only be set using the FI diagnostic tool. The diagnostic mode cannot be set using the meter.



Setting the diagnostic mode

1. Set the main switch to "OFF".
2. Disconnect the self-diagnosis signal coupler, and then connect the FI diagnostic tool "1" as shown.



3. While pressing the "MODE" button, set the main switch to "ON".

TIP

- "DIAG" appears on the LCD of the FI diagnostic tool. If "CO" appears on the LCD of the FI diagnostic tool, press the "UP" button to select "DIAG".
- The "POWER" LED (green) comes on.

4. Press the "MODE" button.

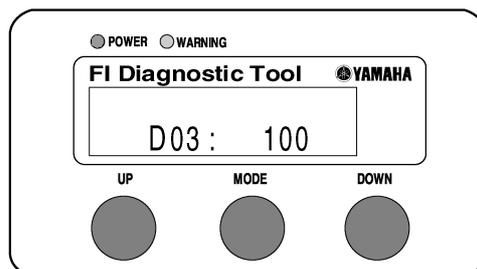
TIP

The diagnostic code number "D01" appears on the LCD of the FI diagnostic tool.

5. Select the diagnostic code number corresponding to the fault code number by pressing the "UP" and "DOWN" buttons.

TIP

- The diagnostic code number appears on the LCD (01-70).
- To decrease the selected diagnostic code number, press the "DOWN" button. Press the "DOWN" button for 1 second or longer to automatically decrease the diagnostic code numbers.
- To increase the selected diagnostic code number, press the "UP" button. Press the "UP" button for 1 second or longer to automatically increase the diagnostic code numbers.



6. Check the operation of the sensor or actuator.

- Sensor operation

The data representing the operating conditions of the sensor appear on the LCD.

- Actuator operation

Press the "MODE" button.

7. Set the main switch to "OFF" to cancel the diagnostic mode.

8. Disconnect the FI diagnostic tool and connect the self-diagnosis signal coupler.

TIP

Information about each diagnostic code number is organized in this manual as follows:

- If a diagnostic code number has a corresponding fault code number, the information is shown in "TROUBLESHOOTING DETAILS". (Refer to "TROUBLESHOOTING DETAILS" on page 8-36.)

FUEL INJECTION SYSTEM

- If a diagnostic code number does not have a corresponding fault code number, the information is shown in “DIAGNOSTIC CODE TABLE”. (Refer to “DIAGNOSTIC CODE TABLE” on page 8-54.)

EAS27481

TROUBLESHOOTING DETAILS

This section describes the measures per fault code number displayed on the meter. Check and service the items or components that are the probable cause of the malfunction following the order given. After the check and service of the malfunctioning part have been completed, reset the meter display according to the reinstatement method.

Fault code No.:

Fault code number displayed on the meter when the engine failed to work normally.

Diagnostic code No.:

Diagnostic code number to be used when the diagnostic mode is operated. Refer to “DIAGNOSTIC MODE” on page 8-34.

Fault code No.	12	
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.	—	
FI diagnostic tool display	—	
Checking method	—	
Probable cause of malfunction		Check or maintenance job
1	Installed condition of crankshaft position sensor.	<ul style="list-style-type: none"> • Check for looseness or pinching.
2	Connections <ul style="list-style-type: none"> • Crankshaft position sensor coupler • Wire harness ECU coupler 	<ul style="list-style-type: none"> • 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.
3	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between the crankshaft position sensor coupler and ECU coupler. (gray/black–gray/black) (white/red–white/red)
4	Defective crankshaft position sensor.	<ul style="list-style-type: none"> • Replace if defective. Refer to “CHECKING THE CRANKSHAFT POSITION SENSOR” on page 8-83.
Reinstatement method	Cranking the engine.	

FUEL INJECTION SYSTEM

Fault code No.	13	
Item	Intake air pressure sensor: open or short circuit detected.	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	03	
FI diagnostic tool display	Displays the intake air pressure.	
Checking method	Operate the throttle while pulling the brake lever and pushing the start switch “  ”. (If the display value changes, the performance is OK.)	
Probable cause of malfunction		Check or maintenance job
1	Connections <ul style="list-style-type: none"> • Intake air pressure sensor coupler • Wire harness ECU coupler 	<ul style="list-style-type: none"> • 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.
2	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between intake air pressure sensor coupler and ECU coupler. (gray/red–gray/red) (pink/white–pink/white) (gray/black–gray/black)
3	Defective intake air pressure sensor.	<ul style="list-style-type: none"> • Execute the diagnostic mode. (Code No. 03) • Replace if defective. Refer to “CHECKING THE INTAKE AIR PRESSURE SENSOR” on page 8-88.
Reinstatement method	Turning the main switch to “ON”.	

Fault code No.	14	
Item	Intake air pressure sensor: hose line malfunction (clogged or detached hose).	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	03	
FI diagnostic tool display	Displays the intake air pressure.	
Checking method	Operate the throttle while pulling the brake lever and pushing the start switch “  ”. (If the display value changes, the performance is OK.)	
Probable cause of malfunction		Check or maintenance job
1	Intake air pressure sensor hose	<ul style="list-style-type: none"> • Check the intake air pressure sensor hose condition. • Repair or replace the sensor hose.
2	Intake air pressure sensor malfunction at intermediate electrical potential.	<ul style="list-style-type: none"> • Check and repair the connection. • Replace it if there is a malfunction.

FUEL INJECTION SYSTEM

Fault code No.	14	
Item	Intake air pressure sensor: hose line malfunction (clogged or detached hose).	
3	Connections <ul style="list-style-type: none"> • Intake air pressure sensor coupler • Wire harness ECU coupler 	<ul style="list-style-type: none"> • 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.
4	Defective intake air pressure sensor.	<ul style="list-style-type: none"> • Execute the diagnostic mode. (Code No. 03) • Replace if defective. Refer to "CHECKING THE INTAKE AIR PRESSURE SENSOR" on page 8-88.
Reinstatement method	Starting the engine and operating it at idle.	

Fault code No.	15	
Item	Throttle position sensor: open or short circuit detected.	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	01	
FI diagnostic tool display	Throttle angle <ul style="list-style-type: none"> • 9–22 (fully closed position) • 93–106 (fully opened position) 	
Checking method	<ul style="list-style-type: none"> • Check with throttle fully closed. • Check with throttle fully opened. 	
Probable cause of malfunction		Check or maintenance job
1	Installed condition of throttle position sensor.	<ul style="list-style-type: none"> • Check for looseness or pinching. • Check that the sensor is installed in the specified position.
2	Connections <ul style="list-style-type: none"> • Throttle position sensor coupler • Wire harness ECU coupler 	<ul style="list-style-type: none"> • 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.
3	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between throttle position sensor coupler and ECU coupler. (gray/red–gray/red) (yellow–yellow) (gray/black–gray/black)
4	Defective throttle position sensor.	<ul style="list-style-type: none"> • Execute the diagnostic mode. (Code No. 01) • Replace if defective. Refer to "CHECKING THE THROTTLE POSITION SENSOR" on page 8-88.
Reinstatement method	Turning the main switch to "ON".	

FUEL INJECTION SYSTEM

Fault code No.	16	
Item	Throttle position sensor: stuck throttle position sensor is detected.	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	01	
FI diagnostic tool display	Throttle angle <ul style="list-style-type: none"> • 9–22 (fully closed position) • 93–106 (fully opened position) 	
Checking method	<ul style="list-style-type: none"> • Check with throttle fully closed. • Check with throttle fully opened. 	
Probable cause of malfunction		Check or maintenance job
1	Installed condition of throttle position sensor.	<ul style="list-style-type: none"> • Check for looseness or pinching. • Check that the sensor is installed in the specified position.
2	Defective throttle position sensor.	<ul style="list-style-type: none"> • Execute the diagnostic mode. (Code No. 01) • Replace if defective. Refer to "CHECKING THE THROTTLE POSITION SENSOR" on page 8-88.
Reinstatement method	Turning the main switch to "ON".	

Fault code No.	19	
Item	Sidestand switch: a break or disconnection of the blue/yellow lead of the ECU is detected.	
Fail-safe system	Unable to start engine	
	Unable to drive vehicle	
Diagnostic code No.	20	
FI diagnostic tool display	Sidestand switch <ul style="list-style-type: none"> • ON (stand retracted) • OFF (stand extended) 	
Checking method	Extend and retract the sidestand.	
Probable cause of malfunction		Check or maintenance job
1	Connections <ul style="list-style-type: none"> • Wire harness ECU coupler 	<ul style="list-style-type: none"> • 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.
2	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between ECU and blue/yellow lead.
3	Defective sidestand switch.	<ul style="list-style-type: none"> • Execute the diagnostic mode. (Code No. 20) • Replace if defective. Refer to "CHECKING THE SWITCHES" on page 8-73.

FUEL INJECTION SYSTEM

Fault code No.	19
Item	Sidestand switch: a break or disconnection of the blue/yellow lead of the ECU is detected.
Reinstatement method	Reconnecting the wiring and retracting the sidestand.

Fault code No.	21	
Item	Coolant temperature sensor: open or short circuit detected.	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	06	
FI diagnostic tool display	Displays the coolant temperature.	
Checking method	Compare the actually measured coolant temperature with the FI diagnostic tool display value.	
Probable cause of malfunction		Check or maintenance job
1	Installed condition of coolant temperature sensor.	<ul style="list-style-type: none"> • Check for looseness or pinching.
2	Connections <ul style="list-style-type: none"> • Coolant temperature sensor coupler • Wire harness ECU coupler 	<ul style="list-style-type: none"> • 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.
3	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between coolant temperature sensor coupler and ECU coupler. (green/red–green/red) (gray/black–gray/black)
4	Defective coolant temperature sensor.	<ul style="list-style-type: none"> • Execute the diagnostic mode. (Code No. 06) • Replace if defective. Refer to “CHECKING THE COOLANT TEMPERATURE SENSOR” on page 8-87.
Reinstatement method	Turning the main switch to “ON”.	

Fault code No.	22	
Item	Intake air temperature sensor: open or short circuit detected.	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	05	
FI diagnostic tool display	Displays the intake air temperature.	
Checking method	Compare the actually measured intake air temperature with the FI diagnostic tool display value.	
Probable cause of malfunction		Check or maintenance job

FUEL INJECTION SYSTEM

Fault code No.		22
Item		Intake air temperature sensor: open or short circuit detected.
1	Installed condition of intake air temperature sensor.	<ul style="list-style-type: none"> • Check for looseness or pinching.
2	Connections <ul style="list-style-type: none"> • Intake air temperature sensor coupler • Wire harness ECU coupler 	<ul style="list-style-type: none"> • 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.
3	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between intake air temperature sensor coupler and ECU coupler. (gray/black–gray/black) (brown/white–brown/white)
4	Defective intake air temperature sensor.	<ul style="list-style-type: none"> • Execute the diagnostic mode. (Code No. 05) • Replace if defective. Refer to “CHECKING THE INTAKE AIR TEMPERATURE SENSOR” on page 8-89.
Reinstatement method		Turning the main switch to “ON”.

Fault code No.		24
Item		O₂ sensor: no normal signal is received from the O₂ sensor.
Fail-safe system		Able to start engine
		Able to drive vehicle
Diagnostic code No.		—
FI diagnostic tool display		—
Checking method		—
Probable cause of malfunction		Check or maintenance job
1	Installed condition of O ₂ sensor.	<ul style="list-style-type: none"> • Check for looseness or pinching.
2	Connections <ul style="list-style-type: none"> • O₂ sensor coupler • Wire harness ECU coupler 	<ul style="list-style-type: none"> • 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.
3	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between O₂ sensor coupler and ECU coupler. (gray/green–gray/green) (gray/black–gray/black) (black/red–black/red) (red/black–red/black)
4	Check fuel pressure.	<ul style="list-style-type: none"> • Refer to “CHECKING THE FUEL PRESSURE” on page 7-3.
5	Defective O ₂ sensor.	<ul style="list-style-type: none"> • Replace if defective.

FUEL INJECTION SYSTEM

Fault code No.	24
Item	O₂ sensor: no normal signal is received from the O₂ sensor.
Reinstatement method	Starting the engine and operating it at idle.

Fault code No.	30	
Item	Latch up detected. No normal signal is received from the lean angle sensor.	
Fail-safe system	Unable to start engine	
	Unable to drive vehicle	
Diagnostic code No.	08	
FI diagnostic tool display	Lean angle sensor • 0.4–1.4 (upright) • 3.7–4.4 (overturned)	
Checking method	Remove the lean angle sensor and incline it more than 45 degrees.	
	Probable cause of malfunction	Check or maintenance job
1	The vehicle has overturned.	• Raise the vehicle upright.
2	Installed condition of the lean angle sensor.	• Check the installed direction and condition of the sensor.
3	Connections • Lean angle sensor coupler • Wire harness ECU coupler	• 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.
4	Defective lean angle sensor.	• Execute the diagnostic mode. (Code No. 08) • Replace if defective. Refer to “CHECKING THE LEAN ANGLE SENSOR” on page 8-84.
Reinstatement method	Turning the main switch to “ON” (however, the engine cannot be restarted unless the main switch is first turned “OFF”).	

Fault code No.	31	
Item	O₂ sensor: The amount of air-fuel ratio feedback compensation is maintained continuously in the vicinity of the upper limit.	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	—	
FI diagnostic tool display	—	
Checking method	—	
	Probable cause of malfunction	Check or maintenance job

FUEL INJECTION SYSTEM

Fault code No.	31	
Item	O₂ sensor: The amount of air-fuel ratio feedback compensation is maintained continuously in the vicinity of the upper limit.	
1	Installed condition of O ₂ sensor.	<ul style="list-style-type: none"> • Check for looseness or pinching.
2	Connections <ul style="list-style-type: none"> • O₂ sensor coupler • Wire harness ECU coupler 	<ul style="list-style-type: none"> • 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.
3	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between O₂ sensor coupler and ECU coupler. (gray/green–gray/green) (gray/black–gray/black) (black/red–black/red) (red/black–red/black)
4	Check fuel pressure.	<ul style="list-style-type: none"> • Refer to “CHECKING THE FUEL PRESSURE” on page 7-3.
5	Defective O ₂ sensor.	<ul style="list-style-type: none"> • Replace if defective.
Reinstatement method	Starting the engine and operating it at idle.	

Fault code No.	32	
Item	O₂ sensor: The amount of air-fuel ratio feedback compensation is maintained continuously in the vicinity of the lower limit.	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	—	
FI diagnostic tool display	—	
Checking method	—	
	Probable cause of malfunction	Check or maintenance job
1	Installed condition of O ₂ sensor.	<ul style="list-style-type: none"> • Check for looseness or pinching.
2	Connections <ul style="list-style-type: none"> • O₂ sensor coupler • Wire harness ECU coupler 	<ul style="list-style-type: none"> • 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.
3	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between O₂ sensor coupler and ECU coupler. (gray/green–gray/green) (gray/black–gray/black) (black/red–black/red) (red/black–red/black)

FUEL INJECTION SYSTEM

Fault code No.		32
Item		O₂ sensor: The amount of air-fuel ratio feedback compensation is maintained continuously in the vicinity of the lower limit.
4	Check fuel pressure.	<ul style="list-style-type: none"> • Refer to “CHECKING THE FUEL PRESSURE” on page 7-3.
5	Defective O ₂ sensor.	<ul style="list-style-type: none"> • Replace if defective.
Reinstatement method		Starting the engine and operating it at idle.

Fault code No.		33
Item		Ignition coil: open or short circuit detected in the primary lead of the ignition coil.
Fail-safe system		Unable to start engine Unable to drive vehicle
Diagnostic code No.		30
Actuation		Actuates the ignition coil five times at one-second intervals. Illuminates the “WARNING” LED on the FI diagnostic tool and the engine trouble warning light.
Checking method		Check the spark five times. <ul style="list-style-type: none"> • Connect an ignition checker.
Probable cause of malfunction		Check or maintenance job
1	Connections <ul style="list-style-type: none"> • Ignition coil connector (primary coil side) • Wire harness ECU coupler 	<ul style="list-style-type: none"> • Check the connector and coupler for any pins that may be pulled out. • Check the locking condition of the connector and coupler. • If there is a malfunction, repair it and connect the coupler or connector securely.
2	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between ignition coil connector and ECU coupler. (orange–orange) (red/black–red/black)
3	Defective ignition coil.	<ul style="list-style-type: none"> • Execute the diagnostic mode. (Code No. 30) • Test the primary and secondary coils for continuity. • Replace if defective. Refer to “CHECKING THE IGNITION COIL” on page 8-82.
Reinstatement method		Starting the engine and operating it at idle.

FUEL INJECTION SYSTEM

Fault code No.	37	
Item	ISC valve: engine speed is high when the engine is idling.	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	54	
Actuation	Actuates and fully closes the ISC valve, then opens it to the standby opening position when the engine is started. This operation takes approximately 12 seconds until it is completed.	
Checking method	The ISC unit vibrates when the ISC valve operates.	
	Probable cause of malfunction	Check or maintenance job
1	Throttle valve does not fully close.	<ul style="list-style-type: none"> • Check the throttle body. Refer to "THROTTLE BODY" on page 7-5. • Check the throttle cables. Refer to "ADJUSTING THE THROTTLE CABLE FREE PLAY" on page 3-9 and "ADJUSTING THE THROTTLE CABLE FREE PLAY" on page 3-23.
2	ISC valve is stuck fully open due to disconnected ISC unit coupler. (High engine idle speed is detected with the ISC valve stuck fully open even though signals for the valve to close are continuously being transmitted by the ECU.)	<ul style="list-style-type: none"> • Check that the ISC unit coupler is not disconnected. • The ISC valve is stuck fully open if it does not operate when the main switch is turned "OFF". (Touch the ISC unit with your hand and check if it is vibrating to confirm if the ISC valve is operating.)
3	ISC valve is not moving correctly.	<ul style="list-style-type: none"> • Execute the diagnostic mode. (Code No. 54) • After the ISC valve is fully closed, it opens to the standby opening position when the engine is started. This operation takes approximately 12 seconds. Start the engine. If the error recurs, replace the throttle body assembly.
Reinstatement method	ISC valve returns to its original position by turning the main switch to "ON" and back to "OFF". Reinstated if the engine idle speed is within specification after starting the engine.	

Fault code No.	39	
Item	Injector: open or short circuit detected.	
Fail-safe system	Unable to start engine	
	Unable to drive vehicle	
Diagnostic code No.	36	
Actuation	Actuates the injector five times at one-second intervals. Illuminates the "WARNING" LED on the FI diagnostic tool and the engine trouble warning light.	
Checking method	Check that the injector actuates five times by listening to the operating sound.	

FUEL INJECTION SYSTEM

Fault code No.	39	
Item	Injector: open or short circuit detected.	
	Probable cause of malfunction	Check or maintenance job
1	Connections <ul style="list-style-type: none"> • Injector coupler • Wire harness ECU coupler 	<ul style="list-style-type: none"> • Check the couplers for any pins that may be pulled out. • Check the locking condition of the couplers. • If there is a malfunction, repair it and connect the coupler securely.
2	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between injector coupler and ECU coupler. (red/black–red/black) (orange/black–orange/black)
3	Defective injector.	<ul style="list-style-type: none"> • Execute the diagnostic mode. (Code No. 36) • Replace if defective. Refer to “CHECKING THE FUEL INJECTOR” on page 7-9.
Reinstatement method	Cranking the engine. (Connect the fuel injector coupler.)	

Fault code No.	41	
Item	Lean angle sensor: open or short circuit detected.	
Fail-safe system	Unable to start engine	
	Unable to drive vehicle	
Diagnostic code No.	08	
FI diagnostic tool display	Lean angle sensor <ul style="list-style-type: none"> • 0.4–1.4 (upright) • 3.7–4.4 (overtuned) 	
Checking method	Remove the lean angle sensor and incline it more than 45 degrees.	
	Probable cause of malfunction	Check or maintenance job
1	Connections <ul style="list-style-type: none"> • Lean angle sensor coupler • Wire harness ECU coupler 	<ul style="list-style-type: none"> • 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.
2	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between lean angle sensor coupler and ECU coupler. (gray/red–gray/red) (yellow/green–yellow/green) (gray/black–gray/black)
3	Defective lean angle sensor.	<ul style="list-style-type: none"> • Execute the diagnostic mode. (Code No. 08) • Replace if defective. Refer to “CHECKING THE LEAN ANGLE SENSOR” on page 8-84.
Reinstatement method	Turning the main switch to “ON”.	

FUEL INJECTION SYSTEM

Fault code No.	42	
Item	Speed sensor: no normal signals are received from the speed sensor.	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	07	
FI diagnostic tool display	0-999	
Checking method	Check that the number increases when the front wheel is rotated. The number is cumulative and does not reset each time the wheel is stopped.	
	Probable cause of malfunction	Check or maintenance job
1	Connections <ul style="list-style-type: none"> • Speed sensor coupler • Wire harness ECU coupler 	<ul style="list-style-type: none"> • 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.
2	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between speed sensor coupler and ECU coupler. (gray/red-gray/red) (gray-gray) (gray/black-gray/black)
3	Defective speed sensor.	<ul style="list-style-type: none"> • Execute the diagnostic mode. (Code No. 07) • Replace if defective. Refer to "CHECKING THE SPEED SENSOR" on page 8-87.
4	This fault code will appear on the multi-function display if the vehicle speed is less than 2 km/h, the throttle is opened 70 degrees or more, and the engine speed exceeds 7000 r/min with the vehicle on the centerstand. This, therefore, does not indicate a malfunction.	—
Reinstatement method	Starting the engine, and inputting the vehicle speed signals by operating the vehicle at a 20 to 30 km/h.	

Fault code No.	43	
Item	Fuel system voltage: the ECU is unable to monitor the battery voltage (an open or short circuit in the line to the ECU).	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	09	
FI diagnostic tool display	Approximately 12.0	

FUEL INJECTION SYSTEM

Fault code No.	43	
Item	Fuel system voltage: the ECU is unable to monitor the battery voltage (an open or short circuit in the line to the ECU).	
Checking method	Compare with the actually measured battery voltage. (If the battery voltage is low, perform recharging.)	
	Probable cause of malfunction	Check or maintenance job
1	Connections <ul style="list-style-type: none"> • Wire harness ECU coupler • Main switch coupler 	<ul style="list-style-type: none"> • 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.
2	Open or short circuit in the wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between battery terminal and main switch coupler. (red–red) • Between main switch coupler and ignition fuse terminal. (brown/blue–brown/blue) • Between ignition fuse terminal and ECU coupler. (red/black–red/black)
3	Malfunction or open circuit in fuel system.	<ul style="list-style-type: none"> • Execute the diagnostic mode. (Code No. 09)
Reinstatement method	Starting the engine and operating it at idle.	

Fault code No.	44	
Item	EEPROM fault code No.: an error is detected while reading or writing on EEPROM (CO adjustment value).	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	60	
FI diagnostic tool display	EEPROM fault code display <ul style="list-style-type: none"> • 00 (no history) • 01/03/04 (history exists) 	
Checking method	—	
	Probable cause of malfunction	Check or maintenance job
1	Malfunction in ECU.	<ul style="list-style-type: none"> • Execute the diagnostic mode (Code No. 60). • Replace ECU if defective.
Reinstatement method	Turning the main switch to “ON”.	

FUEL INJECTION SYSTEM

Fault code No.	46	
Item	Power supply to the fuel injection system is not normal.	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	—	
FI diagnostic tool display	—	
Checking method	—	
	Probable cause of malfunction	Check or maintenance job
1	Connections • Wire harness ECU coupler	<ul style="list-style-type: none"> • 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.
2	Faulty battery.	<ul style="list-style-type: none"> • Charge or replace the battery. Refer to “CHECKING AND CHARGING THE BATTERY” on page 8-78.
3	Malfunction in rectifier/regulator	<ul style="list-style-type: none"> • Replace if defective. Refer to “CHARGING SYSTEM” on page 8-11.
4	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between battery terminal and ECU fuse terminal. (red–red) • Between ECU fuse terminal and ECU coupler. (red/green–red/green)
Reinstatement method	Starting the engine and operating it at idle.	

Fault code No.	50	
Item	Faulty ECU memory. (When this malfunction is detected in the ECU, the fault code number might not appear on the meter.)	
Fail-safe system	Unable to start engine	
	Unable to drive vehicle	
Diagnostic code No.	—	
FI diagnostic tool display	—	
Checking method	—	
	Probable cause of malfunction	Check or maintenance job
1	Malfunction in ECU.	<ul style="list-style-type: none"> • Replace the ECU. TIP _____ Do not perform this procedure with the main switch turned to “ON”.
Reinstatement method	Turning the main switch to “ON”.	

FUEL INJECTION SYSTEM

Fault code No.	61	
Item	ISC (idle speed control) unit: open or short circuit detected.	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	54	
Actuation	Actuates and fully closes the ISC valve, then opens it to the stand-by opening position when the engine is started. This operation takes approximately 12 seconds until it is completed.	
Checking method	The ISC unit vibrates when the ISC valve operates.	
Probable cause of malfunction		Check or maintenance job
1	Connections <ul style="list-style-type: none"> • ISC (idle speed control) unit coupler • Wire harness ECU coupler 	<ul style="list-style-type: none"> • 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.
2	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between ISC (idle speed control) unit and ECU coupler. (pink–pink) (light green–light green) (green–green) (sky blue–sky blue)
3	Defective ISC (idle speed control) unit.	<ul style="list-style-type: none"> • Execute the diagnostic mode. (Code No. 54) • Replace if defective. Refer to “THROTTLE BODY” on page 7-5.
Reinstatement method	Turning the main switch to “ON”.	

Fault code No.	Er-1	
Item	ECU internal malfunction (output signal error): no signals are received from the ECU.	
Fail-safe system	Able/unable to start engine	
	Able/unable to drive vehicle	
Diagnostic code No.	—	
Meter display	—	
Checking method	—	
Probable cause of malfunction		Check or maintenance job
1	Connections <ul style="list-style-type: none"> • Meter assembly coupler • Wire harness ECU coupler • Self-diagnosis signal coupler 	<ul style="list-style-type: none"> • 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.

FUEL INJECTION SYSTEM

Fault code No.		Er-1
Item		ECU internal malfunction (output signal error): no signals are received from the ECU.
2	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between meter assembly coupler and self-diagnosis signal coupler. (yellow/blue–yellow/blue) • Between self-diagnosis signal coupler and ECU coupler. (yellow/blue–yellow/blue)
3	Malfunction in meter assembly.	<ul style="list-style-type: none"> • Replace the meter assembly.
4	Malfunction in ECU.	<ul style="list-style-type: none"> • Replace the ECU.
Reinstatement method		Turning the main switch to “ON”.

Fault code No.		Er-2
Item		ECU internal malfunction (output signal error): no signals are received from the ECU within the specified duration.
Fail-safe system		Able to start engine
		Able to drive vehicle
Diagnostic code No.		—
Meter display		—
Checking method		—
Probable cause of malfunction		Check or maintenance job
1	Connections <ul style="list-style-type: none"> • Meter assembly coupler • Wire harness ECU coupler • Self-diagnosis signal coupler 	<ul style="list-style-type: none"> • 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.
2	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between meter assembly coupler and self-diagnosis signal coupler. (yellow/blue–yellow/blue) • Between self-diagnosis signal coupler and ECU coupler. (yellow/blue–yellow/blue)
3	Malfunction in meter assembly.	<ul style="list-style-type: none"> • Replace the meter assembly.
4	Malfunction in ECU.	<ul style="list-style-type: none"> • Replace the ECU.
Reinstatement method		Turning the main switch to “ON”.

FUEL INJECTION SYSTEM

Fault code No.	Er-3	
Item	ECU internal malfunction (output signal error): data from the ECU cannot be received correctly.	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	—	
Meter display	—	
Checking method	—	
Probable cause of malfunction		Check or maintenance job
1	Connections <ul style="list-style-type: none"> • Meter assembly coupler • Wire harness ECU coupler • Self-diagnosis signal coupler 	<ul style="list-style-type: none"> • 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.
2	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between meter assembly coupler and self-diagnosis signal coupler. (yellow/blue–yellow/blue) • Between self-diagnosis signal coupler and ECU coupler. (yellow/blue–yellow/blue)
3	Malfunction in meter assembly.	<ul style="list-style-type: none"> • Replace the meter assembly.
4	Malfunction in ECU.	<ul style="list-style-type: none"> • Replace the ECU.
Reinstatement method	Turning the main switch to “ON”.	

Fault code No.	Er-4	
Item	ECU internal malfunction (input signal error): non-registered data has been received from the meter.	
Fail-safe system	Able to start engine	
	Able to drive vehicle	
Diagnostic code No.	—	
Meter display	—	
Checking method	—	
Probable cause of malfunction		Check or maintenance job
1	Connections <ul style="list-style-type: none"> • Meter assembly coupler • Wire harness ECU coupler • Self-diagnosis signal coupler 	<ul style="list-style-type: none"> • 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.

FUEL INJECTION SYSTEM

Fault code No.		Er-4
Item		ECU internal malfunction (input signal error): non-registered data has been received from the meter.
2	Open or short circuit in wire harness.	<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between meter assembly coupler and self-diagnosis signal coupler. (yellow/blue–yellow/blue) • Between self-diagnosis signal coupler and ECU coupler. (yellow/blue–yellow/blue)
3	Malfunction in meter assembly.	<ul style="list-style-type: none"> • Replace the meter assembly.
4	Malfunction in ECU.	<ul style="list-style-type: none"> • Replace the ECU.
Reinstatement method		Turning the main switch to “ON”.

FUEL INJECTION SYSTEM

EAS30700

DIAGNOSTIC CODE TABLE

TIP

The following tables contain information about diagnostic code numbers that do not have a corresponding fault code number. (These items are not listed in "TROUBLESHOOTING DETAILS".)

Diagnostic code No.	Item	FI diagnostic tool display/Actuation	Procedure
51	Radiator fan motor relay	Actuates the radiator fan motor relay for five cycles of five seconds. (ON 2 seconds, OFF 3 seconds) Illuminates the "WARNING" LED on the FI diagnostic tool and the engine trouble warning light and rotates the radiator fan motor.	Check that the radiator fan motor relay actuates five times by listening for the operating sound.
52	Headlight relay	Actuates the headlight relay for five cycles of five seconds. (ON 2 seconds, OFF 3 seconds) Illuminates the "WARNING" LED on the FI diagnostic tool, the engine trouble warning light and headlight.	Check that the headlight relay actuates five times by listening for the operating sound.
61	Malfunction history code display • No history • History exists	00 Fault codes 12–61 • (If more than one code number is detected, the display alternates every two seconds to show all the detected code numbers. When all code numbers are shown, the display repeats the same process.)	—
62	Malfunction history code erasure • No history • History exists	0 Up to 19 fault codes	— To erase the history, press the "MODE" button of the FI diagnostic tool.
70	Control number	0–255	—

FUEL INJECTION SYSTEM

Communication error with the FI diagnostic tool

LCD Display	Symptom	Probable cause of malfunction
Waiting for connection....	No signals are received from the ECU.	<ul style="list-style-type: none">• Improper connection in connecting lead.• The main switch is set to "OFF".• Malfunction in FI diagnostic tool.• Malfunction in ECU.
ERROR 4	Commands from the FI diagnostic tool are not accepted by the ECU.	<ul style="list-style-type: none">• Set the main switch to "OFF" once, and then set the FI diagnostic tool to the CO adjustment mode or the diagnostic mode.• Vehicle battery is insufficiently charged.• Malfunction in FI diagnostic tool.• Malfunction in ECU.

FUEL PUMP SYSTEM

- 5. Main switch
- 6. ECU fuse
- 9. Ignition fuse
- 12. Battery
- 13. Main fuse
- 17. Frame ground
- 19. Fuel pump
- 31. ECU (engine control unit)

FUEL PUMP SYSTEM

EAS27570

TROUBLESHOOTING

If the fuel pump fails to operate.

TIP

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

1. Storage box
2. Front cowling

1. Check the fuses. (Main, ECU, and ignition) Refer to "CHECKING THE FUSES" on page 8-77.	NG →	Replace the fuse(s).
OK ↓		
2. Check the battery. Refer to "CHECKING AND CHARGING THE BATTERY" on page 8-78.	NG →	<ul style="list-style-type: none">• Clean the battery terminals.• Recharge or replace the battery.
OK ↓		
3. Check the main switch. Refer to "CHECKING THE SWITCHES" on page 8-73.	NG →	Replace the main switch/immobilizer unit.
OK ↓		
4. Check the fuel pump operation. Refer to "CHECKING THE FUEL PRESSURE" on page 7-3.	NG →	Replace the fuel tank (with fuel pump).
OK ↓		
5. Check the entire fuel pump system wiring. Refer to "CIRCUIT DIAGRAM" on page 8-57.	NG →	Properly connect or repair the fuel pump system wiring.
OK ↓		
Replace the ECU.		

IMMOBILIZER SYSTEM

- 4. Backup fuse (immobilizer unit and meter assembly)
- 5. Main switch
- 6. ECU fuse
- 9. Ignition fuse
- 12. Battery
- 13. Main fuse
- 17. Frame ground
- 31. ECU (engine control unit)
- 61. Immobilizer system indicator light
- 62. Multifunction meter
- 75. Self-diagnosis signal coupler
- 76. Immobilizer unit

EAS27670

GENERAL INFORMATION

This vehicle is equipped with an immobilizer system to help prevent theft by re-registering codes in the standard keys. This system consists of the following:

- a code re-registering key (with a red bow)
- two standard keys (with a black bow) that can be re-registered with new codes
- a transponder (installed in the red key bow)
- an immobilizer unit
- the ECU
- an immobilizer system indicator light

The key with the red bow is used to register codes in each standard key. Do not use the key with the red bow for driving. It should only be used for re-registering new codes in the standard keys. The immobilizer system cannot be operated with a new key until the key is registered with a code. If you lose the code re-registering key, the ECU and main switch (equipped with the immobilizer unit) need to be replaced.

Therefore, always use a standard key for driving. (See NOTICE.)

TIP

Each standard key is registered during production, therefore re-registering at purchase is not necessary.

ECA37P1038

NOTICE

- **DO NOT LOSE THE CODE RE-REGISTERING KEY!** If the code re-registering key is lost, registering new codes in the standard keys is impossible. The standard keys can still be used to start the vehicle. However, if code re-registering is required (e.g., if a new standard key is made or all keys are lost) the entire immobilizer system must be replaced. Therefore, it is highly recommended to use either standard key for driving, and to keep the code re-registering key in a safe place.
 - **Do not submerge the keys in water.**
 - **Do not expose the keys to excessively high temperatures.**
 - **Do not place the keys close to magnets (this includes, but is not limited to, products such as speakers, etc.).**
 - **Do not place heavy items on the keys.**
 - **Do not grind the keys or alter their shape.**
 - **Do not disassemble the key bows.**
 - **Do not put two keys of any immobilizer system on the same key ring.**
 - **Keep the standard keys as well as other immobilizer system keys away from the code re-registering key.**
 - **Keep other immobilizer system keys away from the main switch as they may cause signal interference.**
-

EAS27690

PART REPLACEMENT AND KEY CODE REGISTRATION REQUIREMENTS

In the course of use, you may encounter the following cases where replacement of parts and registration of code re-registering/standard keys are required.

TIP

Each standard key is registered during production, therefore re-registering at purchase is not necessary.

IMMOBILIZER SYSTEM

	Parts to be replaced					Key registration requirement
	Main switch/immobilizer unit		Standard key	ECU	Accessory lock* and key	
	Main switch	Immobilizer unit				
Standard key is lost			√			New standard key
All keys have been lost (including code re-registering key)		√	√	√	√	Code re-registering key and standard keys
ECU is defective				√		Code re-registering key and standard keys
Immobilizer unit is defective		√				Code re-registering key and standard keys
Main switch is defective		√	√	√	√	Code re-registering key and standard keys
Accessory lock* is defective					√	Not required

* Accessory locks mean the seat lock and fuel tank cap.

Code re-registering key registration:

When the immobilizer unit or ECU is replaced, the code re-registering key must be registered to the unit.

To register a code re-registering key:

1. Turn the main switch to "ON" with the code re-registering key.

TIP

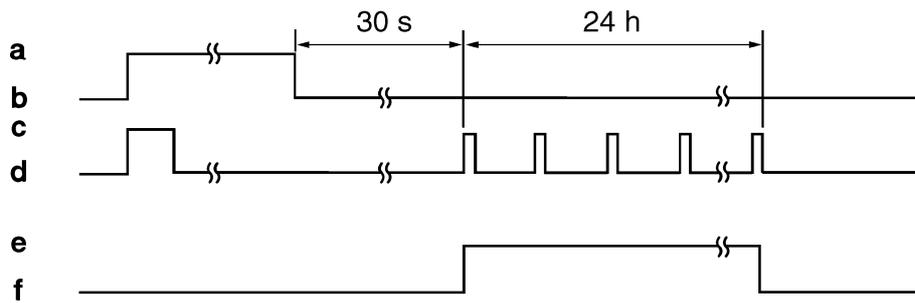
Check that the immobilizer system indicator light comes on for one second, then goes off. When the immobilizer system indicator light goes off, the code re-registering key has been registered.

2. Check that the engine can be started.
3. Register the standard key, following the instructions in the section below.

Standby mode:

To enable the immobilizer system, turn the ignition key to "OFF". 30 seconds later, the indicator light will start flashing continuously in the standby flashing mode pattern for up to 24 hours. After that time, the indicator light will stop flashing, but the immobilizer system is still enabled.

Standby mode



- a. Main switch "ON"
- b. Main switch "OFF"
- c. LED on
- d. LED off

- e. Standby mode on
- f. Standby mode off

Standard key registration:

Standard key registration is required when a standard key is lost and needs to be replaced, or when the code re-registering key is re-registered after the immobilizer unit or ECU are replaced.

TIP

Do not start the engine with a standard key that has not been registered. If the main switch is turned "ON" with a standard key that has not been registered, the immobilizer system indicator light flashes to indicate fault code "52". (Refer to "SELF-DIAGNOSIS FAULT CODE INDICATION" on page 8-67.)

1. Check that the immobilizer system indicator light signals the standby mode.
2. Using the code re-registering key, turn the main switch to "ON", then "OFF", and then remove the key within 5 seconds.
3. Insert the first standard key to be registered into the main switch, then turn the key to "ON" within 5 seconds to activate the key registration mode.

TIP

The existing standard key code is erased from the memory when the key registration mode is activated. When the key registration mode is activated, the immobilizer system indicator light flashes rapidly.

4. While the indicator light is flashing, turn the main switch to "OFF", remove the key, and within 5 seconds, insert the second standard key to be registered into the main switch.

TIP

If the immobilizer system indicator light stops flashing 5 seconds after the first standard key is registered, the registration mode is deactivated. If this occurs, the second standard key cannot be registered, and steps 2 to 4 need to be repeated to register both standard keys.

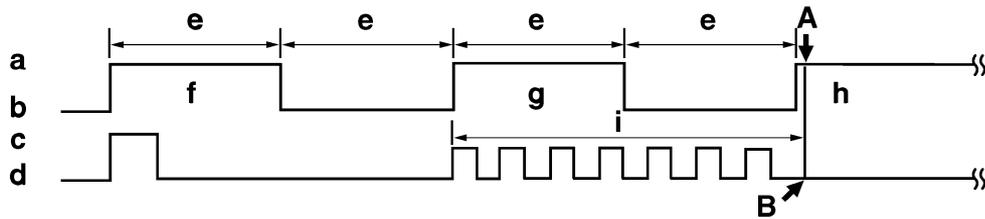
5. Turn the main switch to "ON".

TIP

When the indicator light goes off, the registration is complete.

6. Check that the engine can be started with the two registered standard keys.

Standard key registration

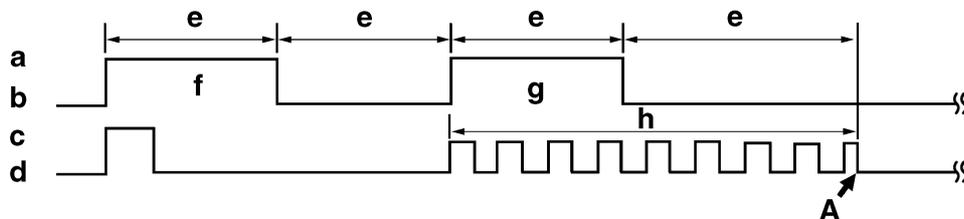


- a. Main switch "ON"
- b. Main switch "OFF"
- c. LED on
- d. LED off
- e. Less than 5.0 s
- f. Code re-registering key
- g. First standard key
- h. Second standard key
- i. Registration mode
- A. Registration of the second standard key is complete.
- B. Immobilizer system indicator light stops flashing when the registration of the second standard key is complete.

Voiding the standard key code:

If a standard key has been lost, it is possible to disable its use by re-registering the remaining standard key. Standard key registration erases the stored standard key code from the memory, thus disabling the lost standard key. To re-register, refer to "Standard key registration".

Standard key code voiding method



- a. Main switch "ON"
- b. Main switch "OFF"
- c. LED on
- d. LED off
- e. Less than 5.0 s
- f. Code re-registering key
- g. Remaining standard key
- h. Registration mode
- A. If the immobilizer system indicator light stops flashing 5 seconds after the first standard key is registered, the second standard key cannot be registered.

IMMOBILIZER SYSTEM

EAS27700

TROUBLESHOOTING

When the main switch is turned to "ON", the immobilizer system indicator light does not come on nor flashes.

<p>1. Check the fuses. (Main, ignition, ECU, and backup) Refer to "CHECKING THE FUSES" on page 8-77.</p>	<p>NG →</p>	<p>Replace the fuse(s).</p>
OK ↓		
<p>2. Check the battery. Refer to "CHECKING AND CHARGING THE BATTERY" on page 8-78.</p>	<p>NG →</p>	<ul style="list-style-type: none"> • Clean the battery terminals. • Recharge or replace the battery.
OK ↓		
<p>3. Check the main switch. Refer to "CHECKING THE SWITCHES" on page 8-73.</p>	<p>NG →</p>	<p>Replace the main switch/immobilizer unit.</p>
OK ↓		
<p>4. Check the entire immobilizer system wiring. Refer to "CIRCUIT DIAGRAM" on page 8-61.</p>	<p>NG →</p>	<p>Properly connect or repair the immobilizer system wiring.</p>
OK ↓		
<ul style="list-style-type: none"> • Check the condition each of the immobilizer system circuits. • Refer to "SELF-DIAGNOSIS FAULT CODE INDICATION" on page 8-67. 		

EAS27720

SELF-DIAGNOSIS FAULT CODE INDICATION

When a system malfunction occurs, the fault code number is indicated in the LCD display of the meter assembly and the immobilizer system indicator light flashes at the same time. The pattern of flashing also shows the fault code.

Fault code	Part	Symptom	Cause	Action
51	IMMOBILIZER UNIT	Code cannot be transmitted between the key and the immobilizer unit.	<ol style="list-style-type: none"> 1. Radio wave interference caused by objects around the keys and antenna. 2. Immobilizer unit malfunction. 3. Key malfunction. 	<ol style="list-style-type: none"> 1. Keep magnets, metal objects, and other immobilizer system keys away from the keys and antennas. 2. Replace the main switch/immobilizer unit. 3. Replace the key.

IMMOBILIZER SYSTEM

Fault code	Part	Symptom	Cause	Action
52	IMMOBILIZER UNIT	Codes between the key and immobilizer unit do not match.	<ol style="list-style-type: none"> 1. Signal received from other transponder (failed to recognize code after ten consecutive attempts). 2. Signal received from unregistered standard key. 	<ol style="list-style-type: none"> 1. Place the immobilizer unit at least 50 mm away from the transponder of other vehicles. 2. Register the standard key.
53	IMMOBILIZER UNIT	Codes cannot be transmitted between the ECU and the immobilizer unit.	<p>Noise interference or disconnected lead/cable.</p> <ol style="list-style-type: none"> 1. Interference due to radio wave noise. 2. Disconnected communication harness. 3. Immobilizer unit malfunction. 4. ECU malfunction. 	<ol style="list-style-type: none"> 1. Check the wire harness and connector. 2. Replace the main switch/immobilizer unit. 3. Replace the ECU.
54	IMMOBILIZER UNIT	Codes transmitted between the ECU and the immobilizer unit do not match.	<p>Noise interference or disconnected lead/cable.</p> <ol style="list-style-type: none"> 1. Interference due to radio wave noise. 2. Disconnected communication harness. 3. Immobilizer unit malfunction. 4. ECU failure. (The ECU or immobilizer unit was replaced with a used unit from another vehicle.) 	<ol style="list-style-type: none"> 1. Register the code re-registering key. 2. Check the wire harness and connector. 3. Replace the main switch/immobilizer unit. 4. Replace the ECU.
55	IMMOBILIZER UNIT	Key code registration malfunction.	Same standard key was attempted to be registered two consecutive times.	Register another standard key.
56	ECU	Unidentified code is received.	Noise interference or disconnected lead/cable.	<ol style="list-style-type: none"> 1. Check the wire harness and connector. 2. Replace the main switch/immobilizer unit. 3. Replace the ECU.

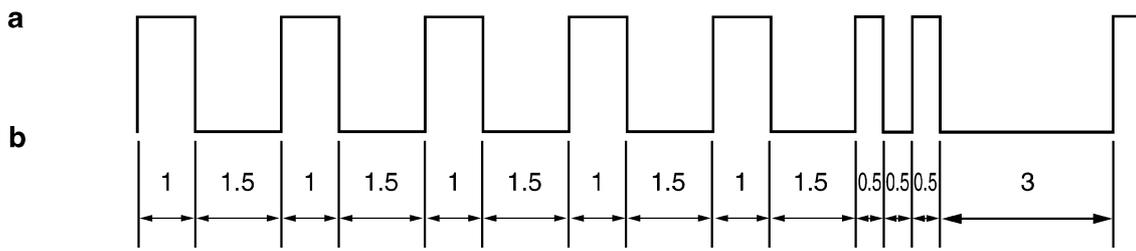
Immobilizer system indicator light fault code indication

Units of 10: Cycles of on for 1 second and off for 1.5 seconds.

Units of 1: Cycles of on for 0.5 second and off for 0.5 second.

Example: fault code 52

IMMOBILIZER SYSTEM

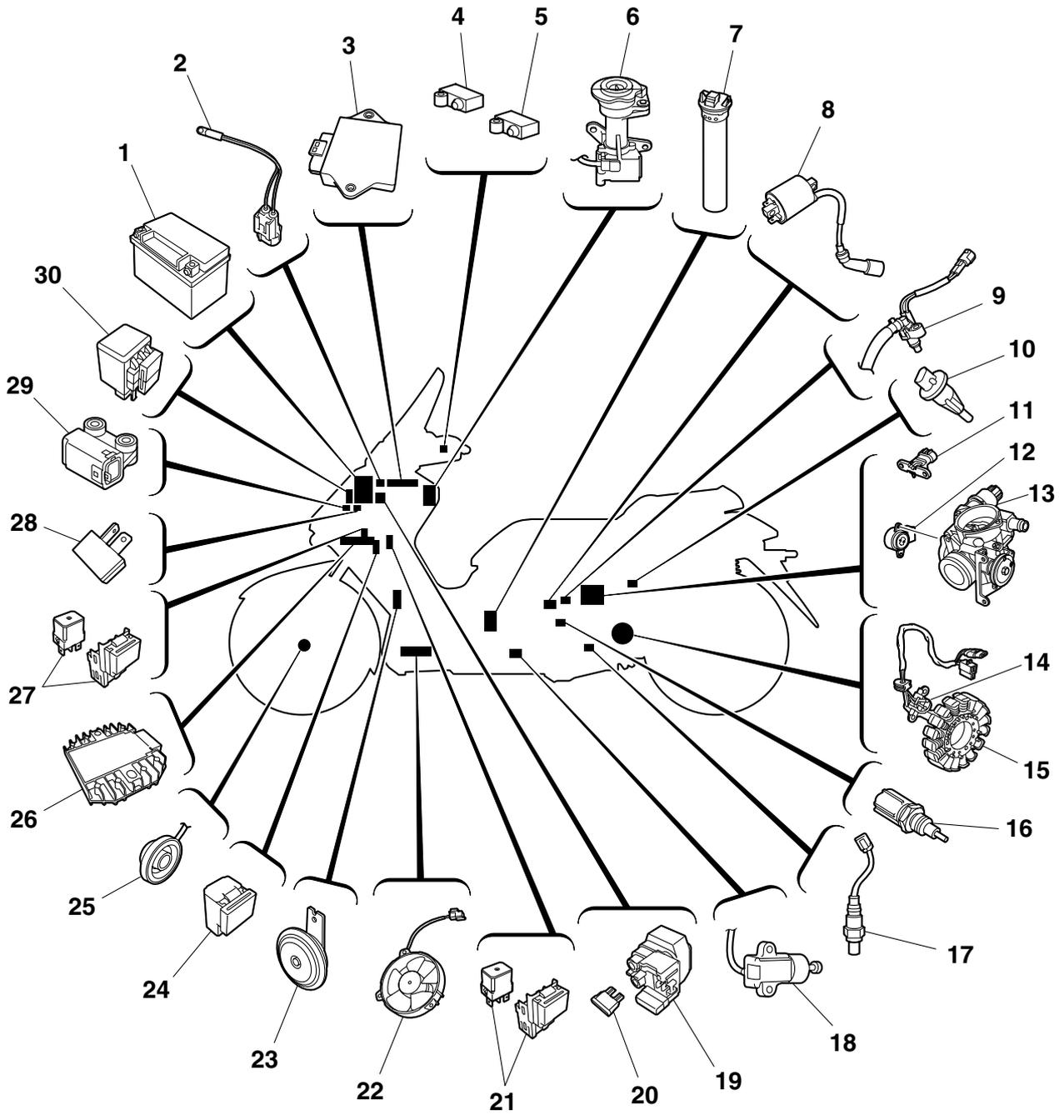


- a. Light on
- b. Light off

ELECTRICAL COMPONENTS

EAS27970

ELECTRICAL COMPONENTS



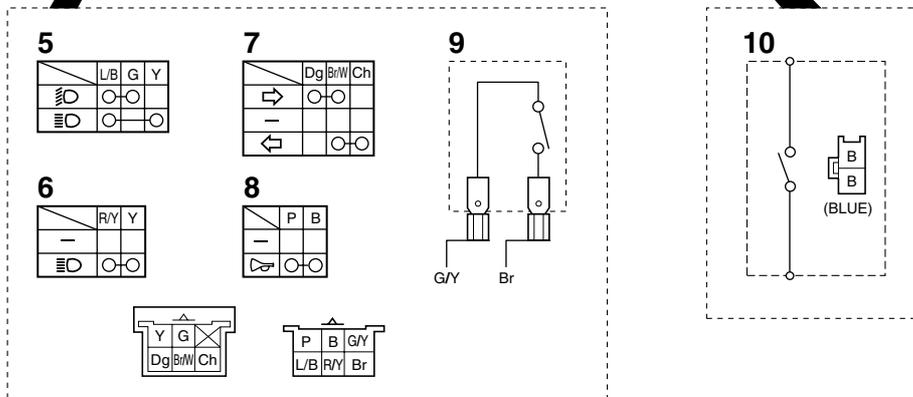
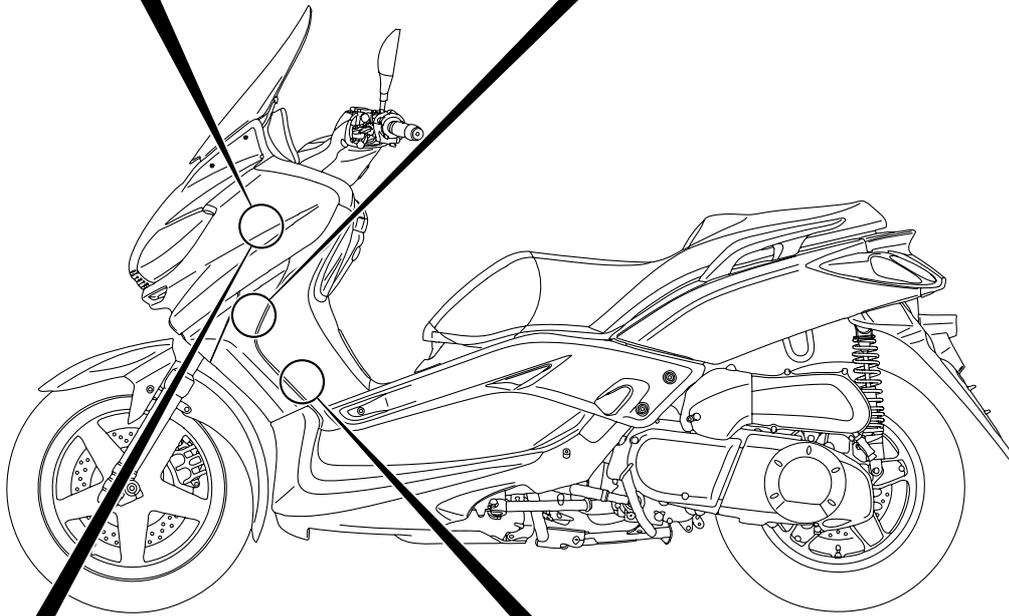
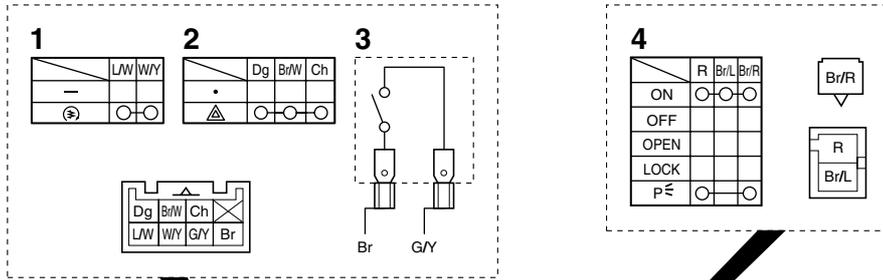
ELECTRICAL COMPONENTS

1. Battery
2. Air temperature sensor
3. ECU (engine control unit)
4. Front brake light switch
5. Rear brake light switch
6. Main switch/immobilizer unit
7. Fuel sender
8. Ignition coil
9. Fuel injector
10. Intake air temperature sensor
11. Intake air pressure sensor
12. Throttle position sensor
13. ISC (idle speed control) unit
14. Crankshaft position sensor
15. Stator coil
16. Coolant temperature sensor
17. O₂ sensor
18. Sidestand switch
19. Starter relay
20. Main fuse
21. Headlight relay
22. Radiator fan motor
23. Horn
24. Starting circuit cut-off relay
25. Speed sensor
26. Rectifier/regulator
27. Radiator fan motor relay
28. Diode
29. Lean angle sensor
30. Turn signal relay

ELECTRICAL COMPONENTS

EAS27980

CHECKING THE SWITCHES



ELECTRICAL COMPONENTS

1. Start switch
2. Hazard switch
3. Front brake light switch
4. Main switch
5. Dimmer switch
6. Pass switch
7. Turn signal switch
8. Horn switch
9. Rear brake light switch
10. Sidestand switch

ELECTRICAL COMPONENTS

Check each switch for continuity with the pocket tester. If the continuity reading is incorrect, check the wiring connections and, if necessary, replace the switch.

ECA14370

NOTICE

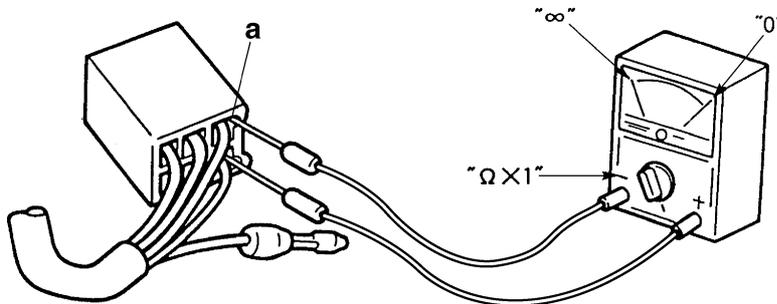
Never insert the tester probes into the coupler terminal slots "a". Always insert the probes from the opposite end of the coupler, taking care not to loosen or damage the leads.



Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

TIP

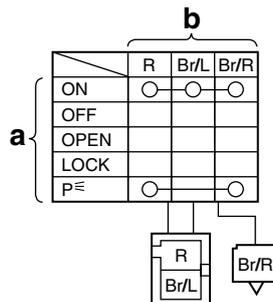
- Before checking for continuity, set the pocket tester to "0" and to the " $\Omega \times 1$ " range.
- When checking for continuity, switch back and forth between the switch positions a few times.



The switches and their terminal connections are illustrated as in the following example of the main switch.

The switch positions "a" are shown in the far left column and the switch lead colors "b" are shown in the top row.

The continuity (i.e., a closed circuit) between switch terminals at a given switch position is indicated by "○—○". There is continuity between red, brown/blue, and brown/red when the switch is set to "ON".



EAS27990

CHECKING THE BULBS AND BULB SOCKETS

TIP

Do not check any of the lights that use LEDs.

Check each bulb and bulb socket for damage or wear, proper connections, and also for continuity between the terminals.

Damage/wear → Repair or replace the bulb, bulb socket or both.

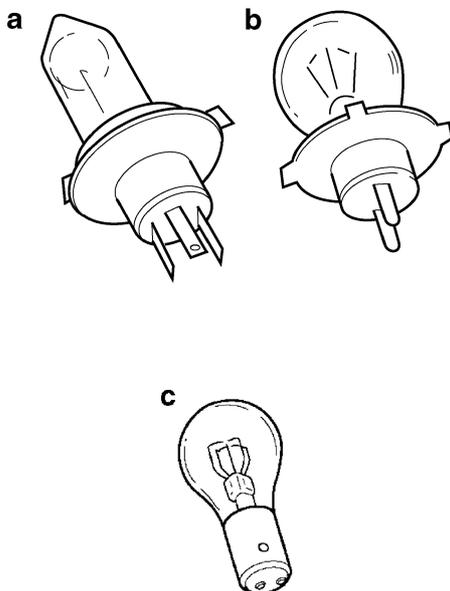
Improperly connected → Properly connect.

No continuity → Repair or replace the bulb, bulb socket or both.

Types of bulbs

The bulbs used on this vehicle are shown in the illustration.

- Bulbs “a” and “b” are used for the headlights and usually use a bulb holder that must be detached before removing the bulb. The majority of these types of bulbs can be removed from their respective socket by turning them counterclockwise.
- Bulbs “c” are used for turn signal and tail/brake lights and can be removed from the socket by pushing and turning the bulb counterclockwise.



Checking the condition of the bulbs

The following procedure applies to all of the bulbs.

1. Remove:
 - Bulb

EWA37P1018

WARNING

Since headlight bulbs get extremely hot, keep flammable products and your hands away from them until they have cooled down.

ECA37P1039

NOTICE

- Be sure to hold the socket firmly when removing the bulb. Never pull the lead, otherwise it may be pulled out of the terminal in the coupler.
- Avoid touching the glass part of a 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.

2. Check:

- Bulb (for continuity)
(with the pocket tester)
No continuity → Replace.

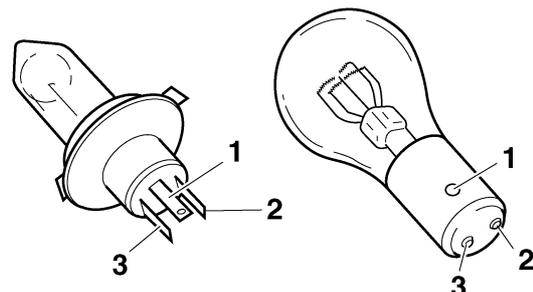


Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

TIP

Before checking for continuity, set the pocket tester to “0” and to the “Ω × 1” range.

- a. Connect the positive tester probe to terminal “1” and the negative tester probe to terminal “2”, and check the continuity.
- b. Connect the positive tester probe to terminal “1” and the negative tester probe to terminal “3”, and check the continuity.
- c. If either of the readings indicate no continuity, replace the bulb.



ELECTRICAL COMPONENTS

Checking the condition of the bulb sockets

The following procedure applies to all of the bulb sockets.

1. Check:
 - Bulb socket (for continuity)
(with the pocket tester)
No continuity → Replace.



Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

TIP

Check each bulb socket for continuity in the same manner as described in the bulb section, however, note the following.

- a. Install a good bulb into the bulb socket.
- b. Connect the pocket tester probes to the respective leads of the bulb socket.
- c. Check the bulb socket for continuity. If any of the readings indicate no continuity, replace the bulb socket.

EAS28000

CHECKING THE FUSES

The fuse box, which contains the fuses for the individual circuits, is located behind the upper panel. The main fuse and spare fuse (30.0 A) are located behind the front cowling assembly.

ECA37P1040

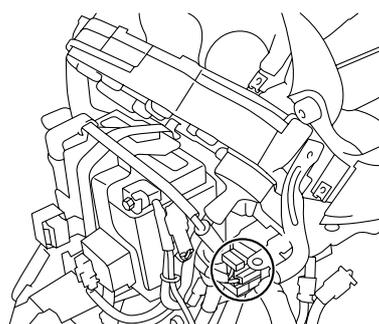
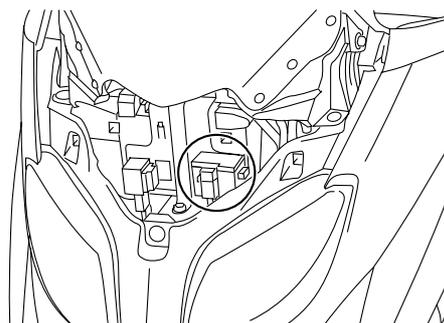
NOTICE

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

1. Remove:
 - Upper panel and/or front cowling assembly
Refer to “GENERAL CHASSIS” on page 4-1.
2. Check:
 - Fuse

Fuses	Amperage rating	Q'ty
Main	30.0 A	1
Headlight	15.0 A	1
Signaling system	10.0 A	1
Ignition	10.0 A	1
Turn signal/hazard	10.0 A	1
Radiator fan motor	7.5 A	1
ECU	5.0 A	1

Fuses	Amperage rating	Q'ty
Backup (immobilizer and meter assembly)	5.0 A	1
Spare	30.0 A	1
Spare	15.0 A	1
Spare	10.0 A	1
Spare	7.5 A	1
Spare	5.0 A	1



- a. Connect the pocket tester to the fuse and check the continuity.

TIP

Set the pocket tester selector to “ $\Omega \times 1$ ”.



Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

- b. If the pocket tester indicates “ ∞ ”, replace the fuse.

3. Replace:
 - Blown fuse

- a. Set the main switch to “OFF”.
- b. Install a new fuse of the correct amperage rating.

ELECTRICAL COMPONENTS

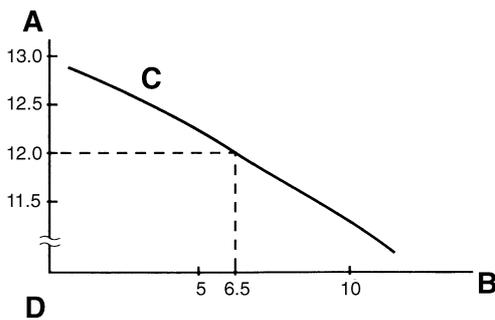
- Positive tester probe → positive battery terminal
- Negative tester probe → negative battery terminal

TIP

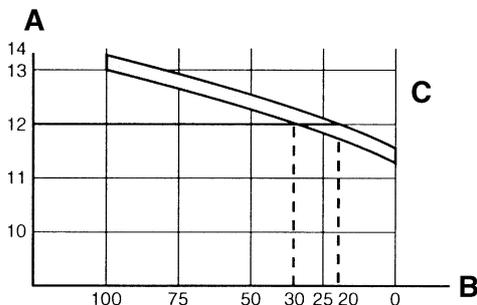
- The charge state of a VRLA (Valve Regulated Lead Acid) battery can be checked by measuring its open-circuit voltage (i.e., the voltage when the positive battery terminal is disconnected).
- No charging is necessary when the open-circuit voltage equals or exceeds 12.8 V.

b. Check the charge of the battery, as shown in the charts and the following example.

Example
 Open-circuit voltage = 12.0 V
 Charging time = 6.5 hours
 Charge of the battery = 20–30%



- A. Open-circuit voltage (V)
- B. Charging time (hours)
- C. Relationship between the open-circuit voltage and the charging time at 20 °C (68 °F)
- D. These values vary with the temperature, the condition of the battery plates, and the electrolyte level.



- A. Open-circuit voltage (V)
- B. Charging condition of the battery (%)
- C. Ambient temperature 20 °C (68 °F)



5. Charge:

- Battery (refer to the appropriate charging method)

EWA13300



WARNING

Do not quick charge a battery.

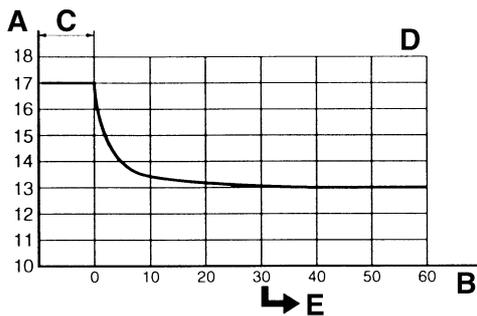
ECA13671



NOTICE

- **Do not use a high-rate battery charger since it forces a high-amperage current into the battery quickly and can cause battery overheating and battery plate damage.**
- **If it is impossible to regulate the charging current on the battery charger, be careful not to overcharge the battery.**
- **When charging a battery, be sure to remove it from the vehicle. (If charging has to be done with the battery mounted on the vehicle, disconnect the negative battery lead from the battery terminal.)**
- **To reduce the chance of sparks, do not plug in the battery charger until the battery charger leads are connected to the battery.**
- **Before removing the battery charger lead clips from the battery terminals, be sure to turn off the battery charger.**
- **Make sure the battery charger lead clips are in full contact with the battery terminal and that they are not shorted. A corroded battery charger lead clip may generate heat in the contact area and a weak clip spring may cause sparks.**
- **If the battery becomes hot to the touch at any time during the charging process, disconnect the battery charger and let the battery cool before reconnecting it. Hot batteries can explode!**
- **As shown in the following illustration, the open-circuit voltage of a VRLA (Valve Regulated Lead Acid) battery stabilizes about 30 minutes after charging has been completed. Therefore, wait 30 minutes after charging is completed before measuring the open-circuit voltage.**

ELECTRICAL COMPONENTS



- A. Open-circuit voltage (V)
- B. Time (minutes)
- C. Charging
- D. Ambient temperature 20 °C (68 °F)
- E. Check the open-circuit voltage.

Charging method using a constant voltage charger

- a. Measure the open-circuit voltage prior to charging.

TIP

Voltage should be measured 30 minutes after the engine is turned off.

- b. Connect a charger and ammeter to the battery and start charging.
- c. Make sure that the current is higher than the standard charging current written on the battery.

TIP

If the current is lower than the standard charging current written on the battery, this type of battery charger cannot charge the VRLA (Valve Regulated Lead Acid) battery. A variable voltage charger is recommended.

- d. Charge the battery until the battery's charging voltage is 15 V.

TIP

Set the charging time at 20 hours (maximum).

- e. Measure the battery open-circuit voltage after leaving the battery unused for more than 30 minutes.

12.8 V or more --- Charging is complete.
 12.7 V or less --- Recharging is required.
 Under 12.0 V --- Replace the battery.

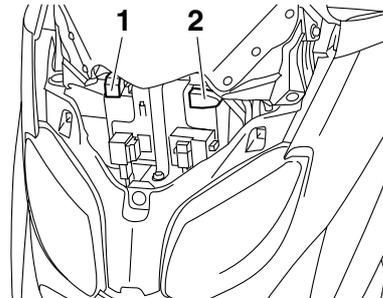
6. Install:
 - Battery

7. Connect:
 - Battery leads
(to the battery terminals)

ECA13630

NOTICE

First, connect the positive battery lead "1", and then the negative battery lead "2".



8. Check:
 - Battery terminals
Dirt → Clean with a wire brush.
Loose connection → Connect properly.
9. Install:
 - Upper panel
Refer to "GENERAL CHASSIS" on page 4-1.

EAS28040

CHECKING THE RELAYS

Check each switch for continuity with the pocket tester. If the continuity reading is incorrect, replace the relay.

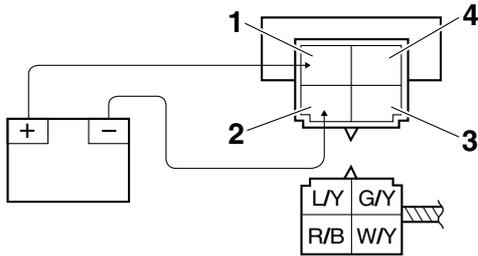


Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

1. Disconnect the relay from the wire harness.
2. Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the relay terminal as shown.
Check the relay operation.
Out of specification → Replace.

ELECTRICAL COMPONENTS

Starting circuit cut-off relay



1. Positive battery terminal
2. Negative battery terminal
3. Positive tester probe
4. Negative tester probe



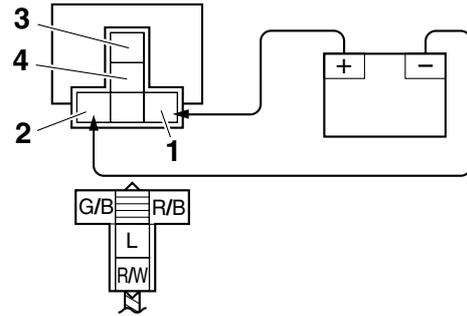
Result
Continuity
(between "3" and "4")

2. Negative battery terminal
3. Positive tester probe
4. Negative tester probe



Result
Continuity
(between "3" and "4")

Radiator fan motor relay

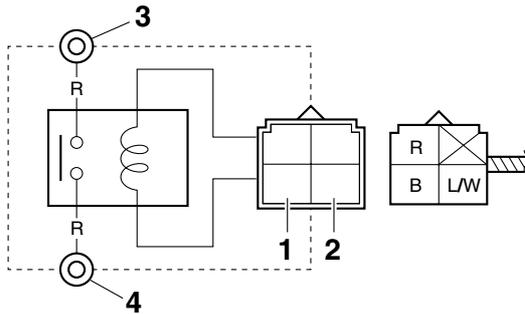


1. Positive battery terminal
2. Negative battery terminal
3. Positive tester probe
4. Negative tester probe



Result
Continuity
(between "3" and "4")

Starter relay



1. Positive battery terminal
2. Negative battery terminal
3. Positive tester probe
4. Negative tester probe



Result
Continuity
(between "3" and "4")

EAS37P1082

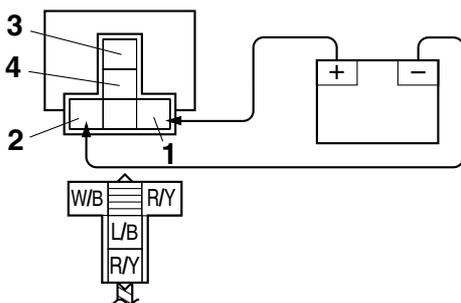
CHECKING THE TURN SIGNAL/HAZARD RELAY

1. Check:
 - Turn signal/hazard relay input voltage
Out of specification → The wiring circuit from the main switch to the turn signal/hazard relay coupler is faulty and must be repaired.



Turn signal/hazard relay input voltage
DC 12 V

Headlight relay



1. Positive battery terminal

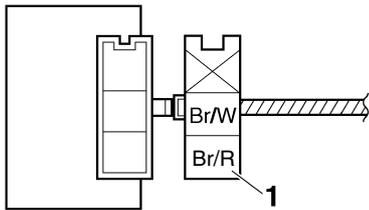
- a. Connect the pocket tester (DC 20 V) to the turn signal/hazard relay terminal as shown.



Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

- Positive tester probe → brown/red "1"
- Negative tester probe → ground

ELECTRICAL COMPONENTS



- b. Set the main switch to "ON".
- c. Measure the turn signal/hazard relay input voltage.

2. Check:

- Turn signal/hazard relay output voltage
Out of specification → Replace.



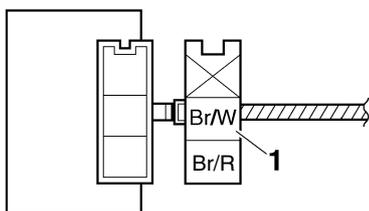
Turn signal/hazard relay output voltage
DC 12 V

- a. Connect the pocket tester (DC 20 V) to the turn signal/hazard relay terminal as shown.



Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

- Positive tester probe → brown/white "1"
- Negative tester probe → ground



- b. Set the main switch to "ON".
- c. Measure the turn signal/hazard relay output voltage.

EAS28060

CHECKING THE SPARK PLUG CAP

1. Check:

- Spark plug cap resistance
Out of specification → Replace.

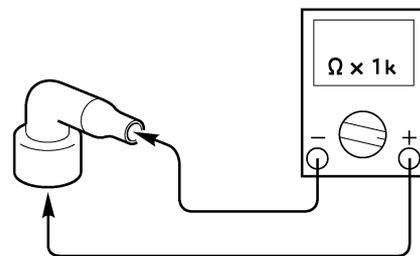


Resistance
10.0 kΩ

- a. Remove the spark plug cap from the spark plug lead.
- b. Connect the pocket tester ($\Omega \times 1k$) to the spark plug cap as shown.



Pocket tester
90890-03112
Analog pocket tester
YU-03112-C



- c. Measure the spark plug cap resistance.

EAS28090

CHECKING THE IGNITION COIL

1. Check:

- Primary coil resistance
Out of specification → Replace.



Primary coil resistance
2.16–2.64 Ω at 20 °C (68 °F)

- a. Disconnect the ignition coil connectors from the ignition coil terminals.
- b. Connect the pocket tester ($\Omega \times 1$) to the ignition coil as shown.

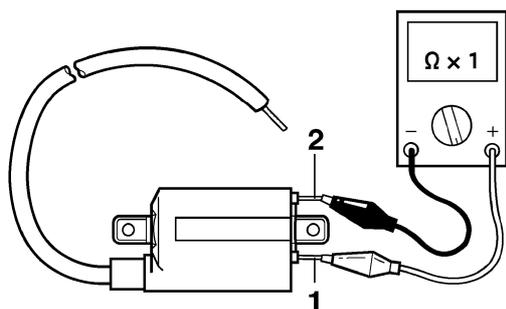


Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

- Positive tester probe → red/black "1"
- Negative tester probe → orange "2"

ELECTRICAL COMPONENTS

Refer to "TROUBLESHOOTING" on page 8-3.



c. Measure the primary coil resistance.



2. Check:

- Secondary coil resistance
Out of specification → Replace.

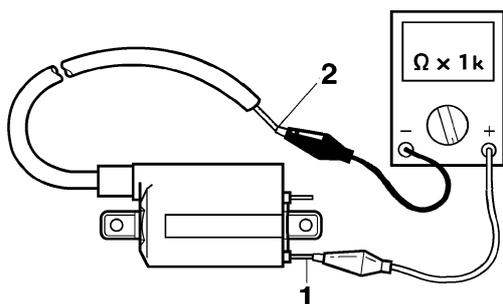
	Secondary coil resistance 8.64–12.96 kΩ at 20 °C (68 °F)
--	--



- Disconnect the spark plug cap from the ignition coil.
- Connect the pocket tester ($\Omega \times 1k$) to the ignition coil as shown.

	Pocket tester 90890-03112 Analog pocket tester YU-03112-C
--	--

- Positive tester probe → red/black "1"
- Negative tester probe → Spark plug lead "2"



c. Measure the secondary coil resistance.



CHECKING THE IGNITION SPARK GAP

1. Check:

- Ignition spark gap
Out of specification → Perform the ignition system troubleshooting, starting with step 5.

EAS28930

	Minimum ignition spark gap 6.0 mm (0.24 in)
--	---

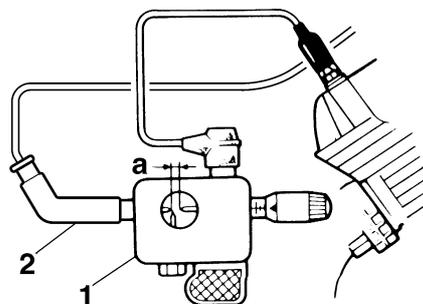
TIP

If the ignition spark gap is within specification, the ignition system circuit is operating normally.



- Disconnect the spark plug cap from the spark plug.
- Connect the ignition checker "1" as shown.

	Ignition checker 90890-06754 Oppama pet-4000 spark checker YM-34487
--	--



2. Spark plug cap

- Set the main switch to "ON".
- Measure the ignition spark gap "a".
- Crank the engine by pushing the start switch "⊗" and gradually increase the spark gap until a misfire occurs.



EAS28120

CHECKING THE CRANKSHAFT POSITION SENSOR

1. Disconnect:

- Crankshaft position sensor coupler (from the wire harness)

2. Check:

- Crankshaft position sensor resistance
Out of specification → Replace the crankshaft position sensor/stator assembly.

	Crankshaft position sensor resistance 248–372 Ω at 20 °C (68 °F)
--	--

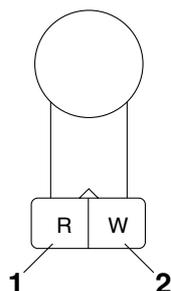


- Connect the pocket tester ($\Omega \times 100$) to the crankshaft position sensor coupler as shown.



Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

- Positive tester probe → red "1"
- Negative tester probe → white "2"



- b. Measure the crankshaft position sensor resistance.

EAS28130

CHECKING THE LEAN ANGLE SENSOR

1. Remove:
 - Lean angle sensor
2. Check:
 - Lean angle sensor output voltage
 Out of specification → Replace.



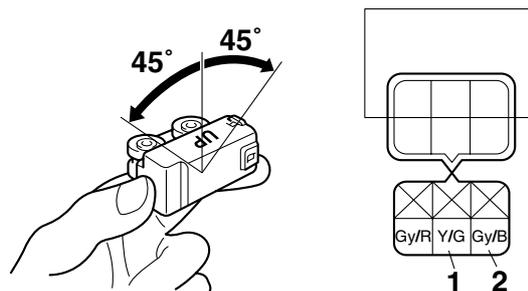
Lean angle sensor output voltage
Less than 45°: 0.4–1.4 V
More than 45°: 3.7–4.4 V

- a. Connect the test harness-lean angle sensor (6P) between the lean angle sensor and wire harness.
- b. Connect the pocket tester (DC 20 V) to the test harness-lean angle sensor (6P).



Test harness-lean angle sensor (6P)
90890-03209
Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

- Positive tester probe → yellow/green "1"
- Negative tester probe → gray/black "2"



- c. Set the main switch to "ON".
- d. Turn the lean angle sensor 45°.
- e. Measure the lean angle sensor output voltage.

EAS28940

CHECKING THE STARTER MOTOR OPERATION

1. Check:
 - Starter motor operation
 Does not operate → Perform the electric starting system troubleshooting, starting with step 4.
 Refer to "TROUBLESHOOTING" on page 8-9.

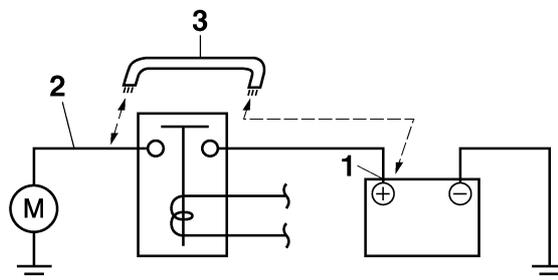
- a. Connect the positive battery terminal "1" and starter motor lead "2" with a jumper lead "3".

EWA13810



WARNING

- A wire that is used as a jumper lead must have at least the same capacity of the battery lead, otherwise the jumper lead may burn.
- This check is likely to produce sparks, therefore, make sure no flammable gas or fluid is in the vicinity.

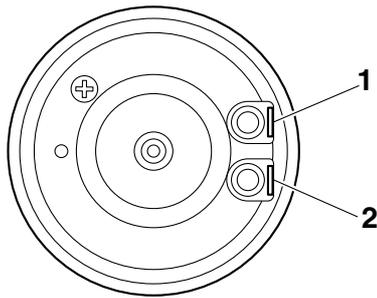


- b. Check the starter motor operation.



Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

- Positive tester probe → horn terminal “1”
- Negative tester probe → horn terminal “2”



c. Measure the horn resistance.



EAS28230

CHECKING THE FUEL SENDER

1. Remove:
 - Fuel sender
2. Check:
 - Fuel sender resistance
 Out of specification → Replace the fuel sender.



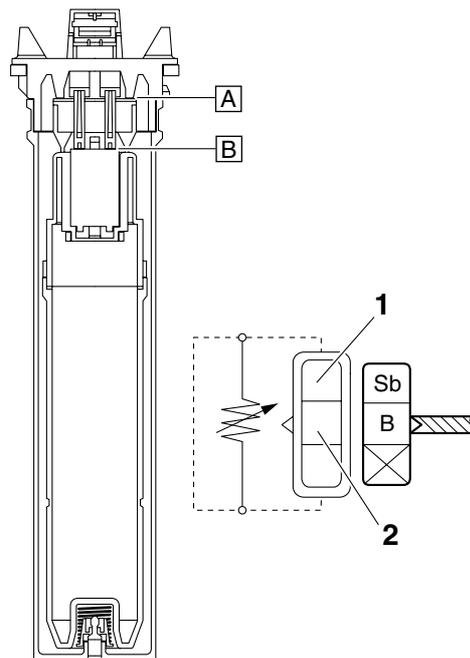
Sender unit resistance (full)
20.0 Ω
Sender unit resistance (empty)
140.0 Ω

a. Connect the pocket tester ($\Omega \times 10$) to the fuel sender terminal as shown.



Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

- Positive tester probe → sky blue “1”
- Negative tester probe → black “2”



- A. Full fuel tank position
- B. Empty fuel tank position

b. Measure the fuel sender resistance.



EAS29040

CHECKING THE FUEL LEVEL WARNING LIGHT

This model is equipped with a self-diagnosis device for the fuel level detection circuit.

1. Check:
 - Fuel level warning light “1”
(Set the main switch to “ON”.)
The warning light comes on for a few seconds, then goes off → The warning light is OK.
The warning light does not come on → Replace the meter assembly.
- All LCD segments of the fuel meter “2” and the fuel level warning light “1” flash (open or short circuit detected in fuel sender) → Replace the fuel sender.



EAS28240

CHECKING THE SPEED SENSOR

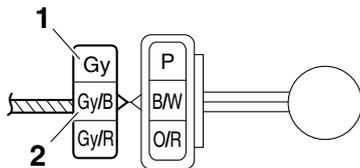
- Check:
 - Speed sensor output voltage
Out of specification → Replace.

	Output voltage reading cycle 0.6 V to 4.8 V to 0.6 V to 4.8 V
---	---

- Connect the pocket tester (DC 20 V) to the speed sensor coupler (wire harness end) as shown.

	Pocket tester 90890-03112 Analog pocket tester YU-03112-C
---	--

- Positive tester probe → gray “1”
- Negative tester probe → gray/black “2”



- Set the main switch to “ON”.
- Elevate the front wheel and slowly rotate it.
- Measure the voltage of gray and gray/black. With each full rotation of the front wheel, the voltage reading should cycle from 0.6 V to 4.8 V to 0.6 V to 4.8 V.

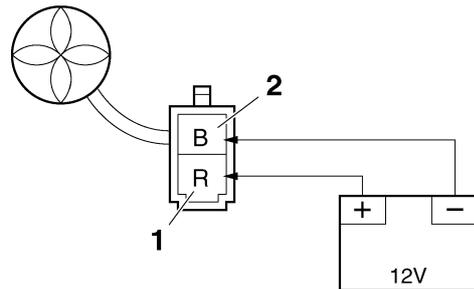
EAS28250

CHECKING THE RADIATOR FAN MOTOR

- Check:
 - Radiator fan motor
Faulty/rough movement → Replace.

- Disconnect the radiator fan motor coupler from the wire harness.
- Connect the battery (DC 12 V) as shown.

- Positive tester probe → red “1”
- Negative tester probe → black “2”



- Measure the radiator fan motor movement.

EAS28260

CHECKING THE COOLANT TEMPERATURE SENSOR

- Remove:
 - Coolant temperature sensor
Refer to “CYLINDER HEAD (YP125R)” on page 5-7 and “CYLINDER HEAD (YP250R)” on page 5-67.

EWA14130

WARNING

- Handle the coolant temperature sensor with special care.
- Never subject the coolant temperature sensor to strong shocks. If the coolant temperature sensor is dropped, replace it.

- Check:
 - Coolant temperature sensor resistance
Out of specification → Replace.

	Coolant temperature sensor resistance 2.32–2.59 kΩ at 20 °C (68 °F) 310–326 Ω at 80 °C (176 °F)
---	--

- Connect the pocket tester ($\Omega \times 1k \times 100$) to the coolant temperature sensor terminals as shown.

	Pocket tester 90890-03112 Analog pocket tester YU-03112-C
---	--

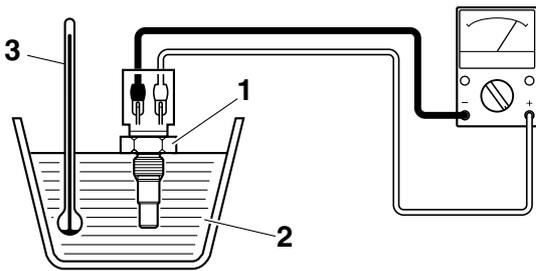
- Immerse the coolant temperature sensor “1” in a container filled with coolant “2”.

TIP

Make sure the coolant temperature sensor terminals do not get wet.

- Place a thermometer “3” in the coolant.

ELECTRICAL COMPONENTS



- d. Heat the coolant or let it cool down to the specified temperatures.
- e. Measure the coolant temperature sensor resistances.



3. Install:

- Coolant temperature sensor



Coolant temperature sensor
18 Nm (1.8 m-kgf, 13 ft-lbf)

EAS28300

CHECKING THE THROTTLE POSITION SENSOR

1. Check:

- Throttle position sensor

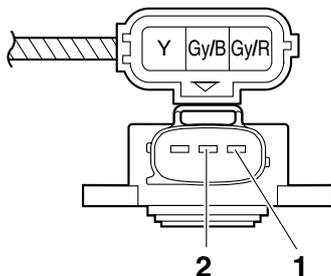


- a. Connect the digital circuit tester to the throttle position sensor as shown.



Digital circuit tester
90890-03174
Model 88 Multimeter with tachometer
YU-A1927

- Positive tester probe → gray/red "1"
- Negative tester probe → gray/black "2"



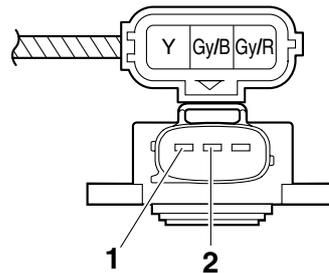
- b. Measure the throttle position sensor voltage. Out of specification → Replace or repair the wire harness.



Throttle position sensor voltage
5 V
(gray/red–gray/black)

- c. Connect the digital circuit tester to the throttle position sensor as shown.

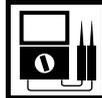
- Positive tester probe → yellow "1"
- Negative tester probe → gray/black "2"



- d. While slowly opening the throttle, check that the throttle position sensor voltage is increased.

Voltage does not change or it changes abruptly → Replace the throttle position sensor.

Out of specification (closed position) → Replace the throttle position sensor.



Throttle position sensor voltage (closed position)
0.40–0.90 V
(yellow–gray/black)

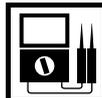


EAS28410

CHECKING THE INTAKE AIR PRESSURE SENSOR

1. Check:

- Intake air pressure sensor output voltage
Out of specification → Replace.



Intake air pressure sensor output voltage
3.57–3.71 V

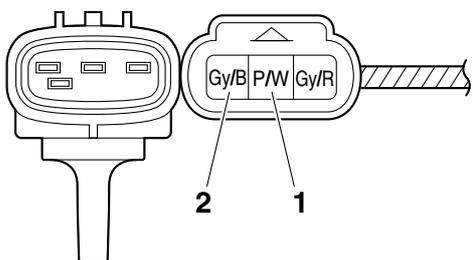
- a. Connect the test harness between the intake air pressure sensor and wire harness.
- b. Connect the pocket tester (DC 20 V) to the test harness.

ELECTRICAL COMPONENTS



Test harness
90890-03204
Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

- Positive tester probe → pink/white “1”
- Negative tester probe → gray/black “2”



- Set the main switch to “ON”.
- Measure the intake air pressure sensor output voltage.



EAS28420

CHECKING THE INTAKE AIR TEMPERATURE SENSOR

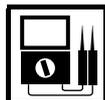
- Remove:
 - Intake air temperature sensor (from the air filter case)

EWA14110

⚠ WARNING

- Handle the intake air temperature sensor with special care.
- Never subject the intake air temperature sensor to strong shocks. If the intake air temperature sensor is dropped, replace it.

- Check:
 - Intake air temperature sensor resistance
Out of specification → Replace.



Intake air temperature sensor resistance
2.21–2.69 kΩ at 20 °C (68 °F)

- Connect the pocket tester ($\Omega \times 1k$) to the intake air temperature sensor terminal as shown.



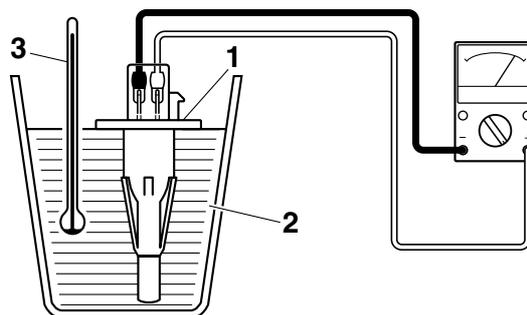
Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

- Immerse the intake air temperature sensor “1” in a container filled with water “2”.

TIP

Make sure that the intake air temperature sensor terminals do not get wet.

- Place a thermometer “3” in the water.



- Heat the water or let it cool down to the specified temperature.
- Measure the intake air temperature sensor resistance.



EAS37P1083

CHECKING THE AIR TEMPERATURE SENSOR

- Remove:
 - Air temperature sensor

EWA37P1017

⚠ WARNING

- Handle the air temperature sensor with special care.
- Never subject the air temperature sensor to strong shocks. If the air temperature sensor is dropped, replace it.

- Check:
 - Air temperature sensor resistance
Out of specification → Replace.



Air temperature sensor resistance
4.19–4.63 kΩ at 50 °C (122 °F)

- Connect the pocket tester ($\Omega \times 1k$) to the air temperature sensor terminal as shown.

ELECTRICAL COMPONENTS



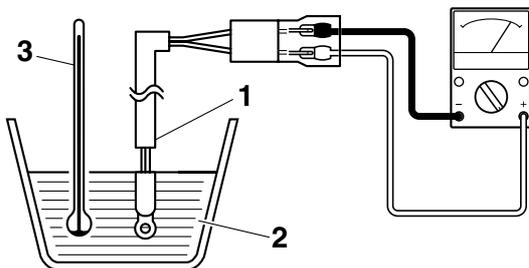
Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

b. Immerse the air temperature sensor "1" in a container filled with water "2".

TIP

Make sure that the air temperature sensor terminals do not get wet.

c. Place a thermometer "3" in the water.



d. Heat the water or let it cool down to the specified temperatures.

e. Measure the air temperature sensor resistance.

EAS37P1085

CHECKING THE ISC (IDLE SPEED CONTROL) UNIT

TIP

Do not remove the ISC unit completely from the throttle body.

1. Check:
 - ISC unit

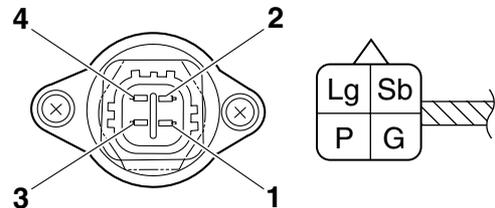
- a. Disconnect the ISC unit coupler from the ISC unit.
- b. Connect the pocket tester ($\Omega \times 10$) to the terminals of the ISC unit.



Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

- Positive tester probe → pink "1"
- Negative tester probe → light green "2"

- Positive tester probe → green "3"
- Negative tester probe → sky blue "4"



- c. Measure the ISC unit resistance.
 Out of specification → Replace the throttle body.



ISC unit resistance
27–33 Ω at 20 °C (68 °F)

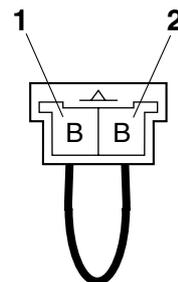
EAS37P1084

CHECKING THE V-BELT REPLACEMENT INDICATOR RESET COUPLER

1. Remove:
 - V-belt replacement indicator reset coupler
2. Check:
 - V-belt replacement indicator reset coupler
 Out of specification → Replace the V-belt replacement indicator coupler.



- Continuity**
Positive tester probe → black "1"
Negative tester probe → black "2"
- Continuity**
Positive tester probe → black "2"
Negative tester probe → black "1"



TROUBLESHOOTING

TROUBLESHOOTING	9-1
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EAS28450

TROUBLESHOOTING

EAS28460

GENERAL INFORMATION

TIP

The following guide for troubleshooting does not cover all the possible causes of trouble. It should be helpful, however, as a guide to basic troubleshooting. Refer to the relative procedure in this manual for checks, adjustments, and replacement of parts.

EAS28480

STARTING FAILURE/HARD STARTING

Engine

1. Cylinder and cylinder head
 - Loose spark plug
 - Loose cylinder head or cylinder
 - Damaged cylinder head gasket
 - Damaged cylinder gasket
 - Worn or damaged cylinder
 - Incorrect valve clearance
 - Improperly sealed valve
 - Incorrect valve-to-valve-seat contact
 - Incorrect valve timing
 - Faulty valve spring
 - Seized valve
2. Piston and piston ring(s)
 - Improperly installed piston ring
 - Damaged, worn or fatigued piston ring
 - Seized piston ring
 - Seized or damaged piston
3. Air filter
 - Improperly installed air filter
 - Clogged air filter element
4. Crankcase and crankshaft
 - Improperly assembled crankcase
 - Seized crankshaft

Fuel system

1. Fuel tank
 - Empty fuel tank
 - Clogged fuel tank cap breather hole
 - Deteriorated or contaminated fuel
 - Clogged or damaged fuel hose
2. Fuel pump
 - Faulty fuel pump
 - Clogged fuel pump filter
3. Throttle body
 - Deteriorated or contaminated fuel
 - Sucked-in air

Electrical system

1. Battery
 - Discharged battery
 - Faulty battery
2. Fuse(s)
 - Blown, damaged or incorrect fuse
 - Improperly installed fuse
3. Spark plug
 - Incorrect spark plug gap
 - Incorrect spark plug heat range
 - Fouled spark plug
 - Worn or damaged electrode
 - Worn or damaged insulator
 - Faulty spark plug cap
4. Ignition coil
 - Cracked or broken ignition coil body
 - Broken or shorted primary or secondary coils
 - Faulty spark plug lead
5. Ignition system
 - Faulty ECU
 - Faulty crankshaft position sensor
 - Broken generator rotor woodruff key
6. Switches and wiring
 - Faulty main switch
 - Broken or shorted wiring
 - Faulty front, rear or both brake light switches
 - Faulty start switch
 - Faulty sidestand switch
 - Improperly grounded circuit
 - Loose connections
7. Starting system
 - Faulty starter motor
 - Faulty starter relay
 - Faulty starting circuit cut-off relay
 - Faulty starter clutch

EAS28500

INCORRECT ENGINE IDLING SPEED

Engine

1. Cylinder and cylinder head
 - Incorrect valve clearance
 - Damaged valve train components
2. Air filter
 - Clogged air filter element

Fuel system

1. Throttle body
 - Damaged or loose throttle body joint
 - Improper throttle cable free play

Electrical system

1. Battery
 - Discharged battery

- Faulty battery
2. Spark plug
 - Incorrect spark plug gap
 - Incorrect spark plug heat range
 - Fouled spark plug
 - Worn or damaged electrode
 - Worn or damaged insulator
 - Faulty spark plug cap
 3. Ignition coil
 - Faulty spark plug lead
 4. Ignition system
 - Faulty ECU
 - Faulty crankshaft position sensor

EAS28510

POOR MEDIUM-AND-HIGH-SPEED PERFORMANCE

Refer to "STARTING FAILURE/HARD STARTING" on page 9-1.

Engine

1. Air filter
 - Clogged air filter element

Fuel system

1. Fuel pump
 - Faulty fuel pump

EAS28580

FAULTY CLUTCH

Engine operates but vehicle will not move

1. V-belt
 - Bent, damaged or worn V-belt
 - Slipping V-belt
2. Primary pulley cam and primary pulley slider(s)
 - Damaged or worn primary pulley cam
 - Damaged or worn primary pulley slider
3. Transmission gear(s)
 - Damaged transmission gear

Clutch slips

1. Clutch shoe spring(s)
 - Damaged, loose or worn clutch shoe spring
2. Clutch shoe(s)
 - Damaged or worn clutch shoe
3. Primary sliding sheave
 - Seized primary sliding sheave

Poor starting performance

1. V-belt
 - V-belt slips
 - Oil or grease on the V-belt

2. Primary sliding sheave
 - Faulty operation
3. Clutch shoe(s)
 - Bent, damaged or worn clutch shoe

Poor speed performance

1. V-belt
 - Oil or grease on the V-belt
2. Primary pulley weight(s)
 - Faulty operation
 - Worn primary pulley weight
3. Primary fixed sheave
 - Worn primary fixed sheave
4. Primary sliding sheave
 - Worn primary sliding sheave
5. Secondary fixed sheave
 - Worn secondary fixed sheave
6. Secondary sliding sheave
 - Worn secondary sliding sheave

EAS28600

OVERHEATING

Engine

1. Clogged coolant passages
 - Cylinder head and piston
 - Heavy carbon buildup
2. Engine oil
 - Incorrect oil level
 - Incorrect oil viscosity
 - Inferior oil quality

Cooling system

1. Coolant
 - Low coolant level
2. Radiator
 - Damaged or leaking radiator
 - Faulty radiator cap
 - Bent or damaged radiator fin
3. Water pump
 - Damaged or faulty water pump
4. Thermostat
 - Thermostat stays closed
5. Hose(s)
 - Damaged hose
 - Improperly connected hose

Fuel system

1. Throttle body
 - Damaged or loose throttle body joint
2. Air filter
 - Clogged air filter element

Chassis

1. Brake(s)
 - Dragging brake

Electrical system

1. Spark plug
 - Incorrect spark plug gap
 - Incorrect spark plug heat range
2. Ignition system
 - Faulty ECU

EAS28610

OVERCOOLING

Cooling system

1. Thermostat
 - Thermostat stays open

EAS28620

POOR BRAKING PERFORMANCE

- Worn brake pad
- Worn brake disc
- Air in hydraulic brake system
- Leaking brake fluid
- Faulty brake caliper kit
- Faulty brake caliper seal
- Loose union bolt
- Damaged brake hose
- Oil or grease on the brake disc
- Oil or grease on the brake pad
- Incorrect brake fluid level

EAS28660

FAULTY FRONT FORK LEGS

Leaking oil

- Bent, damaged or rusty inner tube
- Cracked or damaged outer tube
- Improperly installed oil seal
- Damaged oil seal lip
- Incorrect oil level (high)
- Loose damper rod bolt
- Damaged damper rod bolt copper washer
- Cracked or damaged front fork cap O-ring

Malfunction

- Bent or damaged inner tube
- Bent or damaged outer tube
- Damaged fork spring
- Worn or damaged outer tube bushing
- Bent or damaged damper rod
- Incorrect oil viscosity
- Incorrect oil level

EAS28670

UNSTABLE HANDLING

1. Handlebar
 - Bent or improperly installed handlebar
2. Steering head components
 - Improperly installed lower handlebar holder
 - Improperly installed lower bracket (improperly tightened ring nut)
 - Bent steering stem
 - Damaged ball bearing or bearing race
3. Front fork leg(s)
 - Uneven oil levels (both front fork legs)
 - Unevenly tensioned fork spring (both front fork legs)
 - Broken fork spring
 - Bent or damaged inner tube
 - Bent or damaged outer tube
4. Swingarm
 - Worn bearing or bushing
 - Bent or damaged swingarm
5. Rear shock absorber assembly(-ies)
 - Faulty rear shock absorber spring
 - Leaking oil
6. Tire(s)
 - Uneven tire pressures (front and rear)
 - Incorrect tire pressure
 - Uneven tire wear
7. Wheel(s)
 - Incorrect wheel balance
 - Deformed cast wheel
 - Damaged wheel bearing
 - Bent or loose wheel axle
 - Excessive wheel runout
8. Frame
 - Bent frame
 - Damaged steering head pipe
 - Improperly installed bearing race

EAS28710

FAULTY LIGHTING OR SIGNALING SYSTEM

Headlight does not come on

- Wrong headlight bulb
- Too many electrical accessories
- Hard charging
- Incorrect connection
- Improperly grounded circuit
- Poor contacts (main switch)
- Burnt-out headlight bulb

Headlight bulb burnt out

- Wrong headlight bulb
- Faulty battery
- Faulty rectifier/regulator

- Improperly grounded circuit
- Faulty main switch
- Headlight bulb life expired

Tail/brake light does not come on

- Wrong tail/brake light bulb
- Too many electrical accessories
- Incorrect connection
- Burnt-out tail/brake light bulb

Tail/brake light bulb burnt out

- Wrong tail/brake light bulb
- Faulty battery
- Tail/brake light bulb life expired

Turn signal does not come on

- Faulty turn signal switch
- Faulty turn signal/hazard relay
- Burnt-out turn signal bulb
- Incorrect connection
- Damaged or faulty wire harness
- Improperly grounded circuit
- Faulty battery
- Blown, damaged or incorrect fuse

Turn signals flash slowly

- Faulty turn signal/hazard relay
- Faulty main switch
- Faulty turn signal switch
- Incorrect turn signal bulb

Turn signals remain lit

- Faulty turn signal/hazard relay
- Burnt-out turn signal bulb

Turn signals flash quickly

- Incorrect turn signal bulb
- Faulty turn signal/hazard relay
- Burnt-out turn signal bulb

Horn does not sound

- Damaged or faulty horn
- Faulty main switch
- Faulty horn switch
- Faulty battery
- Blown, damaged or incorrect fuse
- Faulty wire harness

WIRING DIAGRAM**YP125R/YP250R 2010**

1. AC magneto
2. Crankshaft position sensor
3. Rectifier/regulator
4. Backup fuse (immobilizer unit and meter assembly)
5. Main switch
6. ECU fuse
7. Radiator fan motor fuse
8. Turn signal/hazard fuse
9. Ignition fuse
10. Headlight fuse
11. Signaling system fuse
12. Battery
13. Main fuse
14. Starter relay
15. Starter motor
16. Diode
17. Frame ground
18. Sidestand switch
19. Fuel pump
20. Starting circuit cut-off relay
21. Right handlebar switch
22. Start switch
23. Hazard switch
24. Front brake light switch
25. Coolant temperature sensor
26. Throttle position sensor
27. Intake air pressure sensor
28. Intake air temperature sensor
29. Lean angle sensor
30. Speed sensor
31. ECU (engine control unit)
32. Ignition coil
33. Spark plug
34. Fuel injector
35. O₂ sensor
36. ISC (idle speed control) unit
37. Auxiliary DC jack (OPTION)
38. Horn
39. Turn signal/hazard relay
40. Headlight relay
41. Left handlebar switch
42. Dimmer switch
43. Pass switch
44. Turn signal switch
45. Horn switch
46. Rear brake light switch
47. Right tail/brake light assembly
48. Right rear turn signal light
49. Tail/brake light
50. Left tail/brake light assembly
51. Left rear turn signal light
52. Right front turn signal light
53. Left front turn signal light
54. Headlight assembly
55. Headlight
56. Auxiliary light

57. License plate light
58. Fuel sender
59. V-belt replacement indicator re-set coupler
60. Meter assembly
61. Immobilizer system indicator light
62. Multifunction meter
63. Speedometer
64. Tachometer
65. Engine oil change indicator
66. V-belt replacement indicator
67. Engine trouble warning light
68. Meter light
69. High beam indicator light
70. Right turn signal indicator light
71. Left turn signal indicator light
72. Air temperature sensor
73. Radiator fan motor
74. Radiator fan motor relay
75. Self-diagnosis signal coupler
76. Immobilizer unit
- A. YP250R only

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



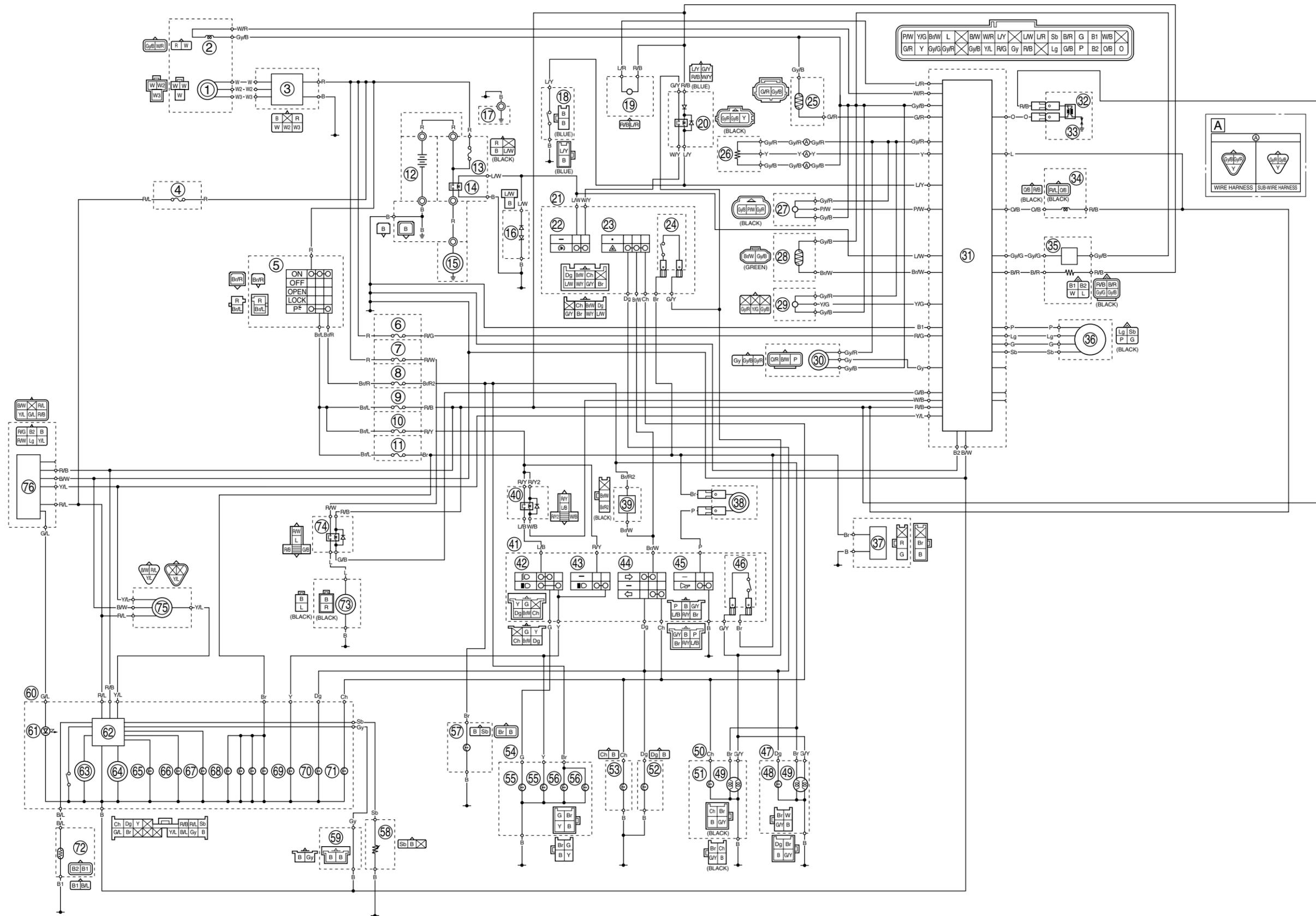
YP125R/YP250R 2010
WIRING DIAGRAM

YP125R/YP250R 2010
SCHEMA DE CÂBLAGE

YP125R/YP250R 2010
SCHALTPLAN

YP125R/YP250R 2010
SCHEMA ELETTRICO

YP125R/YP250R 2010
DIAGRAMA ELÉCTRICO



YP125R/YP250R 2010
WIRING DIAGRAM

YP125R/YP250R 2010
SCHEMA DE CÂBLAGE

YP125R/YP250R 2010
SCHALTPLAN

YP125R/YP250R 2010
SCHEMA ELETTRICO

YP125R/YP250R 2010
DIAGRAMA ELÉCTRICO

