

TABLE OF CONTENTS

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

EAS20170

FEATURES

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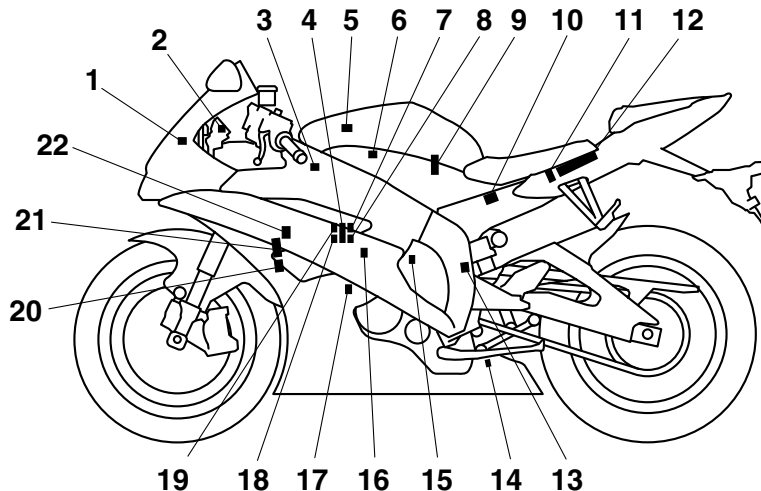
OUTLINE OF THE FI SYSTEM

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 by 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.

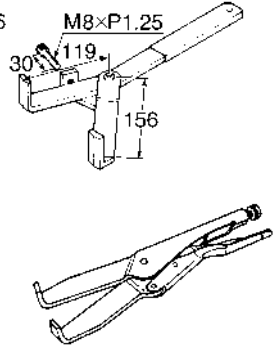
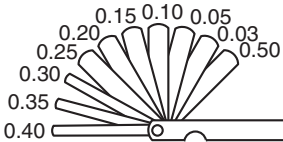
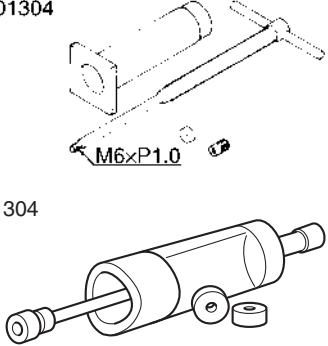
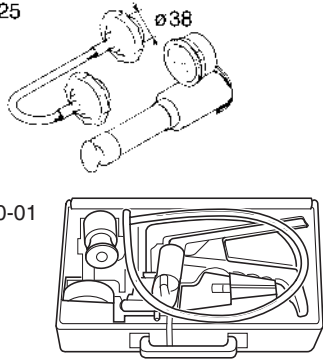
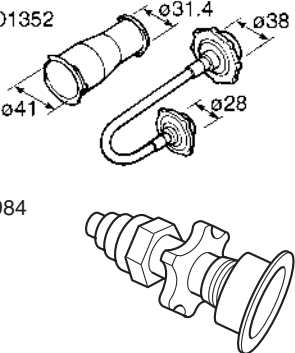
As the requirements for the engine to deliver more performance and cleaner exhaust gases increase, it becomes necessary to control the air-fuel ratio in a more precise and finely tuned manner. To accommodate this need, this model has adopted an electronically controlled fuel injection (FI) system, in 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. Air temperature sensor | 15. Speed sensor |
| 2. Engine trouble warning light | 16. Coolant temperature sensor |
| 3. Air induction system solenoid | 17. Crankshaft position sensor |
| 4. Throttle servo motor | 18. Throttle position sensor (for throttle cable pulley) |
| 5. Atmospheric pressure sensor | 19. Throttle position sensor (for throttle valves) |
| 6. Secondary injectors | 20. Spark plug |
| 7. Primary injectors | 21. Ignition coil |
| 8. Intake air pressure sensor | 22. Cylinder identification sensor |
| 9. Fuel pump | |
| 10. Relay unit (fuel pump relay) | |
| 11. Lean angle sensor | |
| 12. ECU (engine control unit) | |
| 13. EXUP servo motor | |
| 14. O ₂ sensor | |

SPECIAL TOOLS

Tool name/Tool No.	Illustration	Reference pages
Universal clutch holder 90890-04086 YM-91042	 <p>90890-04086</p> <p>M8xP1.25</p> <p>30° 119 156</p> <p>YM-91042</p>	5-41, 5-45
Thickness gauge 90890-03180 Feeler gauge set YU-26900-9	 <p>0.15 0.10 0.05 0.03 0.50</p> <p>0.20 0.25 0.30 0.35 0.40</p>	5-41
Piston pin puller set 90890-01304 Piston pin puller YU-01304	 <p>90890-01304</p> <p>M6xP1.0</p> <p>YU-01304</p>	5-60
Radiator cap tester 90890-01325 Radiator pressure tester YU-24460-01	 <p>90890-01325</p> <p>38</p> <p>YU-24460-01</p>	6-3
Radiator cap tester adapter 90890-01352 Radiator pressure tester adapter YU-33984	 <p>90890-01352</p> <p>41 31.4 38 28</p> <p>YU-33984</p>	6-3

CHASSIS SPECIFICATIONS

Brake disc thickness limit	4.0 mm (0.16 in)
Brake disc deflection limit	0.10 mm (0.0039 in)
Brake pad lining thickness (inner)	4.5 mm (0.18 in)
Limit	0.5 mm (0.02 in)
Brake pad lining thickness (outer)	4.5 mm (0.18 in)
Limit	0.5 mm (0.02 in)
Master cylinder inside diameter	16.00 mm (0.63 in)
Caliper cylinder inside diameter	30.23 mm × 1 (1.19 in × 1)
Caliper cylinder inside diameter	27.00 mm × 1 (1.06 in × 1)
Recommended fluid	DOT 4

Rear brake

Type	Single disc brake
Operation	Right foot operation
Rear disc brake	
Disc outside diameter × thickness	220.0 × 5.0 mm (8.66 × 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)	6.0 mm (0.24 in)
Limit	1.0 mm (0.04 in)
Brake pad lining thickness (outer)	6.0 mm (0.24 in)
Limit	1.0 mm (0.04 in)
Master cylinder inside diameter	12.7 mm (0.50 in)
Caliper cylinder inside diameter	38.18 mm (1.50 in)
Recommended fluid	DOT 4

Steering

Steering head tension	200–500 g
Steering bearing type	Angular bearing
Lock to lock angle (left)	25.0°
Lock to lock angle (right)	25.0°

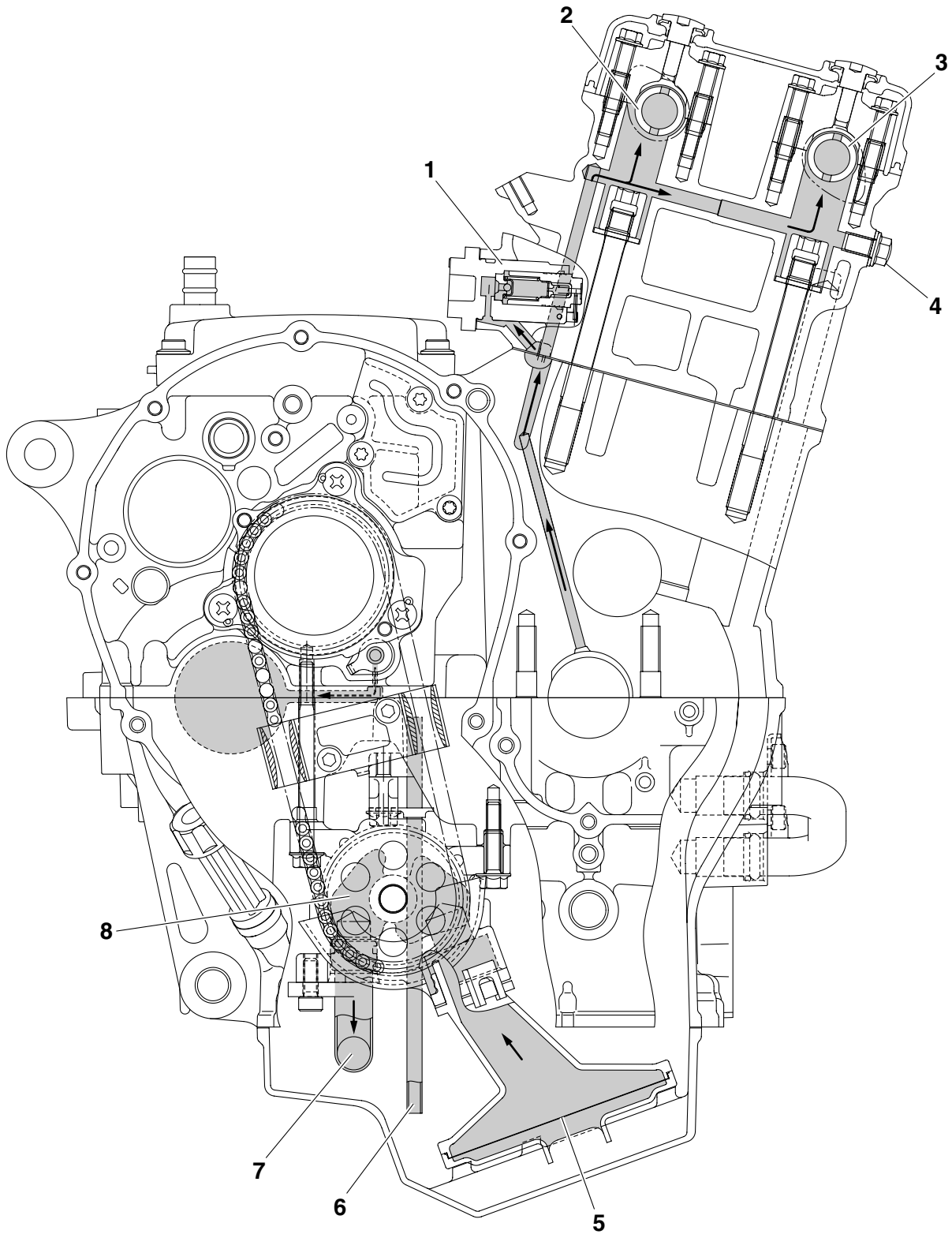
Front suspension

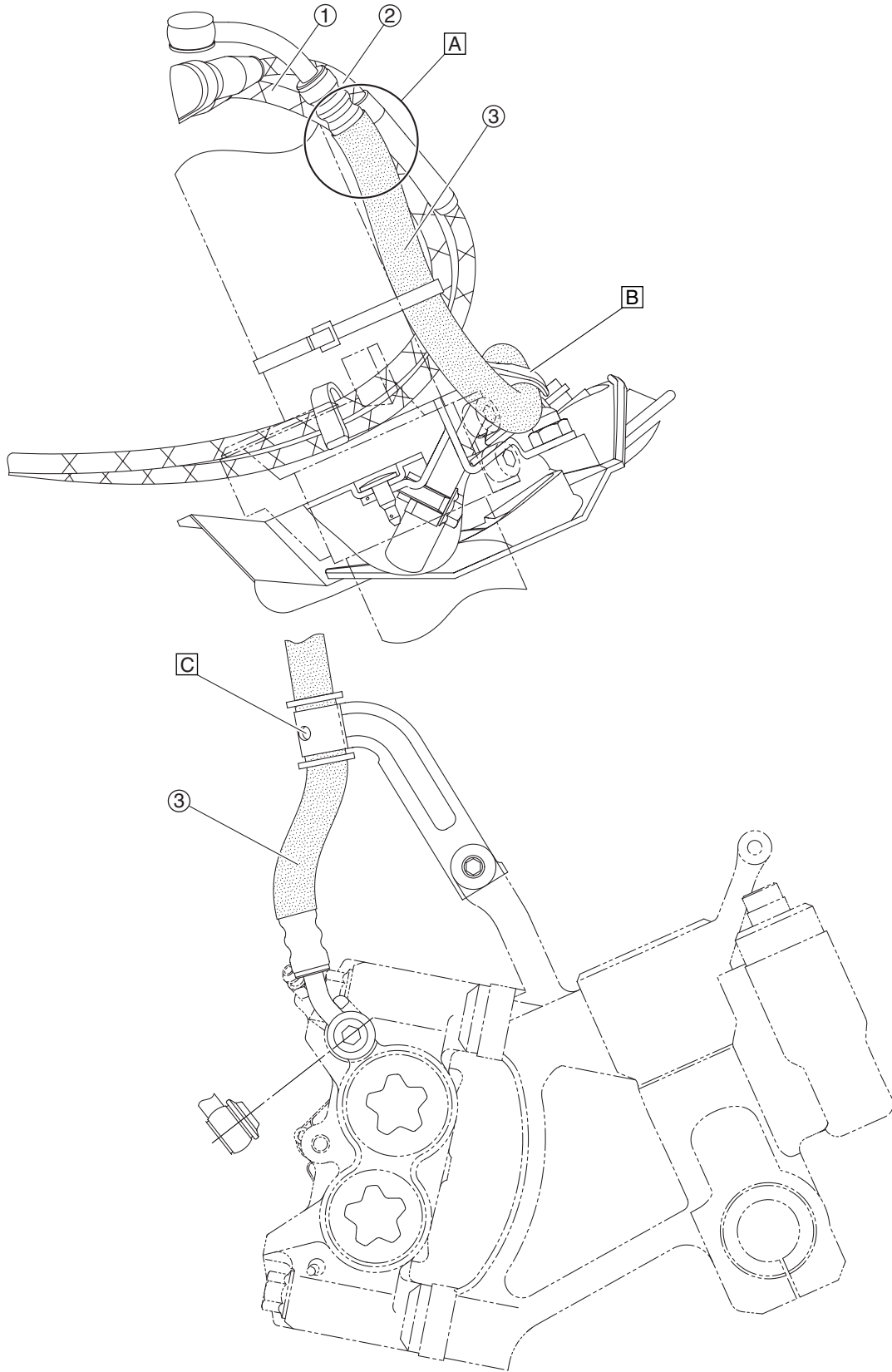
Type	Telescopic fork
Spring/shock absorber type	Coil spring/oil damper
Front fork travel	120.0 mm (4.72 in)
Fork spring free length	247.0 mm (9.72 in)
Limit	242.1 mm (9.53 in)
Collar length	80.0 mm (3.15 in)
Installed length	240.0 mm (9.45 in)
Spring rate K1	8.80 N/mm (50.25 lb/in) (0.90 kgf/mm)
Spring stroke K1	0.0–120.0 mm (0.00–4.72 in)
Inner tube outer diameter	41.0 mm (1.61 in)
Inner tube bending limit	0.2 mm (0.01 in)
Optional spring available	No
Recommended oil	Ohlins R & T43 (ACC-RT43F-00-00)
Quantity	465.0 cm ³ (15.72 US oz) (16.37 Imp.oz)
Level	108.0 mm (4.25 in)

Rear suspension

Type	Swingarm (link suspension)
Spring/shock absorber type	Coil spring/gas-oil damper
Rear shock absorber assembly travel	60.0 mm (2.36 in)

LUBRICATION SYSTEM CHART AND DIAGRAMS



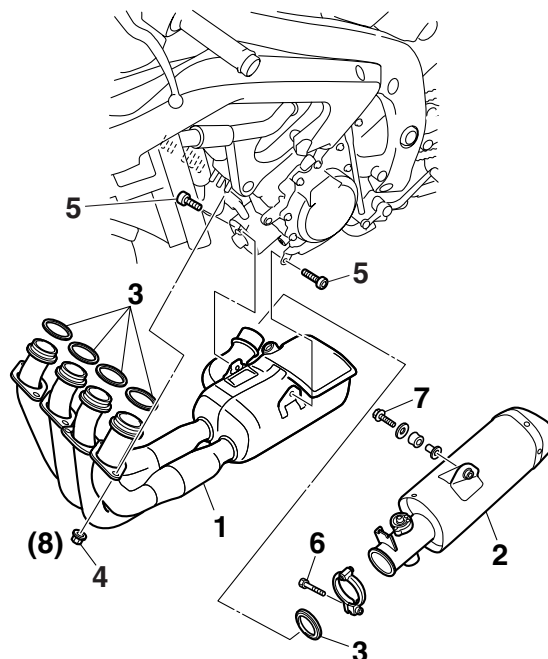


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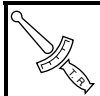
CHECKING THE EXHAUST SYSTEM

The following procedure applies to all of the exhaust pipe assembly and gaskets.

1. Remove:
 - Side cowlings
 - Bottom cowlings
 Refer to "GENERAL CHASSIS" on page 4-1.
2. Check:
 - Exhaust pipe assembly "1"
 - Muffler "2"
 Cracks/damage → Replace.
 - Gaskets "3"
 Exhaust gas leaks → Replace.
3. Check:
 - Tightening torque
 - Exhaust pipe assembly and cylinder head nuts "4"
 - Exhaust pipe assembly and exhaust pipe assembly bracket bolts "5"
 - Exhaust pipe assembly and muffler bolt "6"
 - Muffler and right rider footrest bracket bolt "7"



4. Install:
 - Bottom cowlings
 - Side cowlings
 Refer to "GENERAL CHASSIS" on page 4-1.



Exhaust pipe assembly and cylinder head nut

20 Nm (2.0 m·kg, 14 ft·lb)

Exhaust pipe assembly and exhaust pipe assembly bracket bolt

20 Nm (2.0 m·kg, 14 ft·lb)

Exhaust pipe assembly and muffler bolt

10 Nm (1.0 m·kg, 7.2 ft·lb)

Muffler and right rider footrest bracket bolt

20 Nm (2.0 m·kg, 14 ft·lb)

EAS21090

CHECKING THE CANISTER (for California only)

1. Remove:
 - Fuel tank
 Refer to "FUEL TANK" on page 7-1.
 - Air filter case
 Refer to "AIR FILTER CASE" on page 7-5.
2. Check:
 - Canister
 - Canister purge hoses
 - 3-way joint
 - Fuel tank breather hose (rollover valve to canister)
 Cracks/damage → Replace.
 Refer to "THROTTLE BODIES" on page 7-8.
3. Install:
 - Air filter case
 Refer to "AIR FILTER CASE" on page 7-5.
 - Fuel tank
 Refer to "FUEL TANK" on page 7-1.

EAS21100

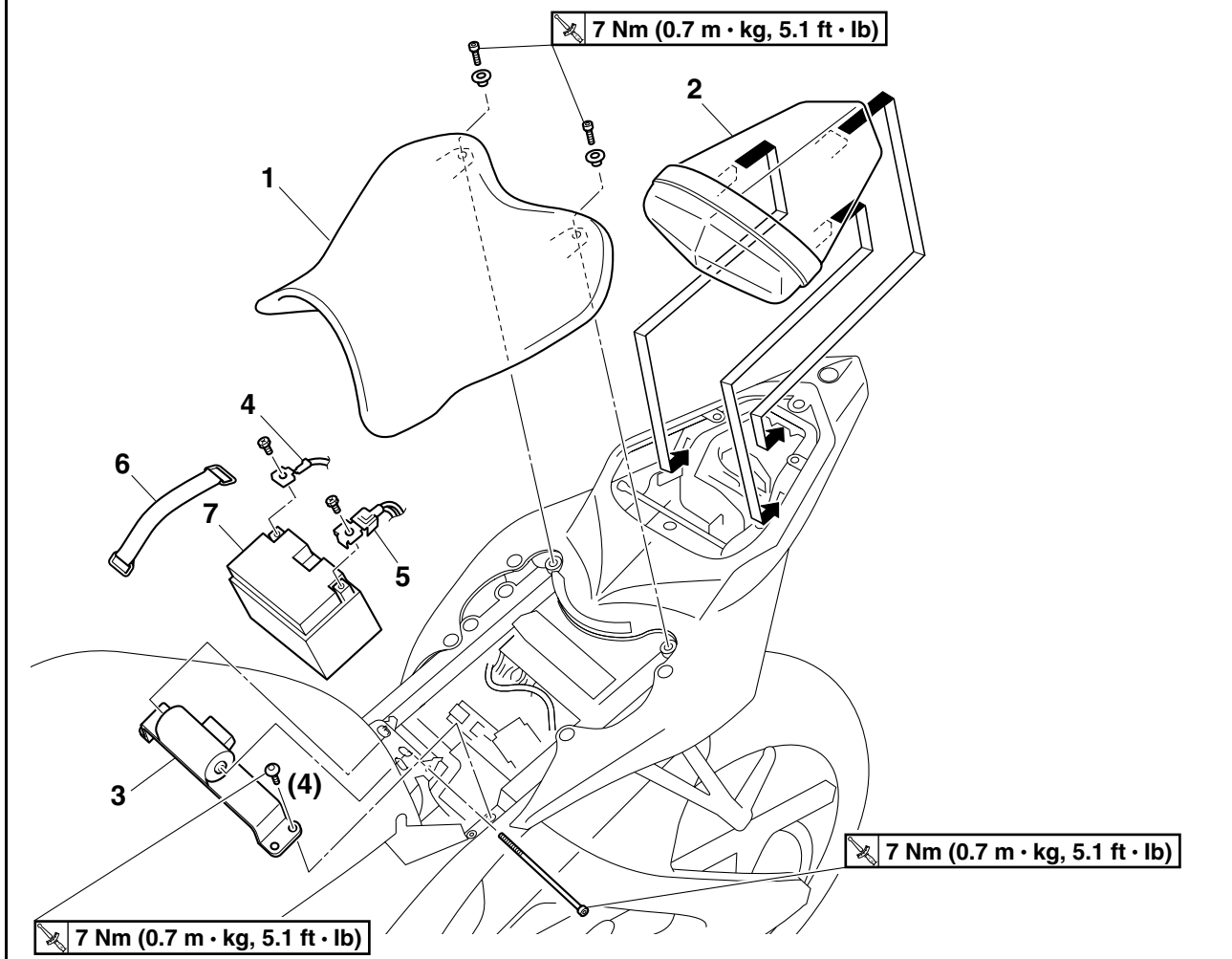
ADJUSTING THE EXUP CABLES

1. Remove:
 - EXUP valve pulley cover "1"

EAS21830

GENERAL CHASSIS

Removing the seat and battery



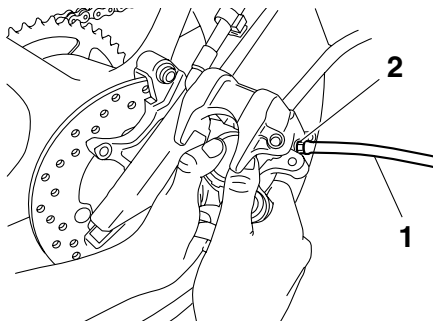
Order	Job/Parts to remove	Q'ty	Remarks
1	Rider seat	1	
2	Passenger seat	1	
3	Fuel tank bracket	1	
4	Negative battery lead	1	Disconnect.
5	Positive battery lead	1	Disconnect.
6	Battery band	1	
7	Battery	1	
			For installation, reverse the removal procedure.

- Brake pad spring

NOTE:

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

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

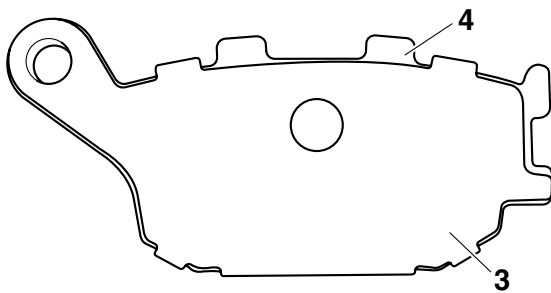


- Tighten the bleed screw.



Bleed screw
5 Nm (0.5 m·kg, 3.6 ft·lb)

- Install a new brake pad insulator and new brake pad shim "3" onto each new brake pad "4".



3. Install:

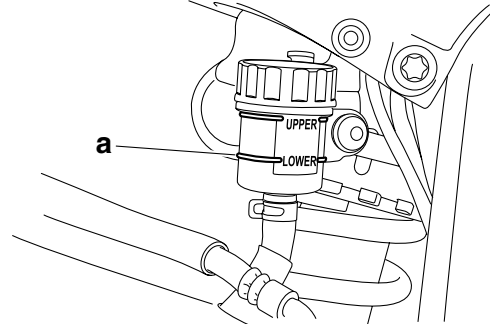
- Rear brake caliper
- Brake pad pin
- Screw plug



Rear brake caliper bolt (M12)
27 Nm (2.7 m·kg, 19 ft·lb)
Rear brake caliper bolt (M8)
22 Nm (2.2 m·kg, 16 ft·lb)
LOCTITE®

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 3-22.



5. Check:

- Brake pedal operation
Soft or spongy feeling → Bleed the brake system. Refer to "BLEEDING THE HYDRAULIC BRAKE SYSTEM" on page 3-24.

EAS22590

REMOVING THE REAR BRAKE CALIPER

NOTE:

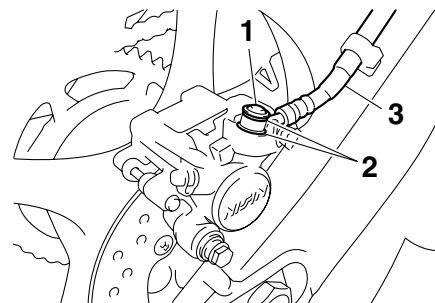
Before disassembling the brake caliper, drain the brake fluid from the entire brake system.

1. Remove:

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

NOTE:

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



EAS22600

DISASSEMBLING THE REAR BRAKE CALIPER

1. Remove:

- Brake caliper piston "1"
- Brake caliper piston seals "2"

EAS23410

REMOVING THE DRIVE CHAIN

- Stand the vehicle on a level surface.

EWA13120

WARNING

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

NOTE:

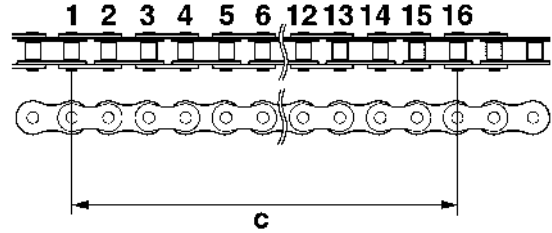
Place the vehicle on a suitable stand so that the rear wheel is elevated.

- Remove:

- Drive chain
(with the drive chain cutter)

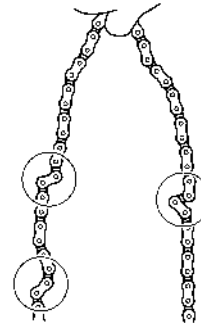
NOTE:

Only cut the drive chain if it or the swingarm is to be replaced.



- Check:

- Drive chain
Stiffness → Clean and lubricate or replace.



- Clean:

- Drive chain



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

EC2C01014

CAUTION:

- This vehicle has a drive chain with small rubber O-rings “1” between the drive chain side plates. Never use high-pressure water or air, steam, gasoline, certain solvents (e.g., benzene), or a coarse brush to clean the drive chain. High-pressure methods could force dirt or water into the drive chain’s internals, and solvents will deteriorate the O-rings. A coarse brush can also damage the O-rings. Therefore, use only kerosene to clean the drive chain.
- Do not soak the drive chain in kerosene for more than ten minutes, otherwise the O-rings can be damaged.

EAS23440

CHECKING THE DRIVE CHAIN

- Measure:

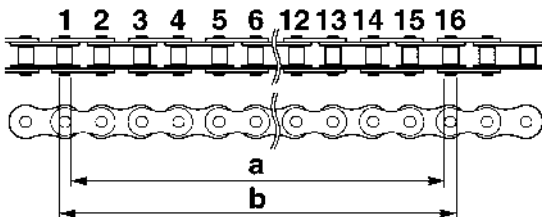
- 15-link section “a” of the drive chain
Out of specification → Replace the drive chain.



15-link length limit
239.3 mm (9.42 in)



- Measure the length “a” between the inner sides of the pins and the length “b” between the outer sides of the pins on a 15-link section of the drive chain as shown in the illustration.

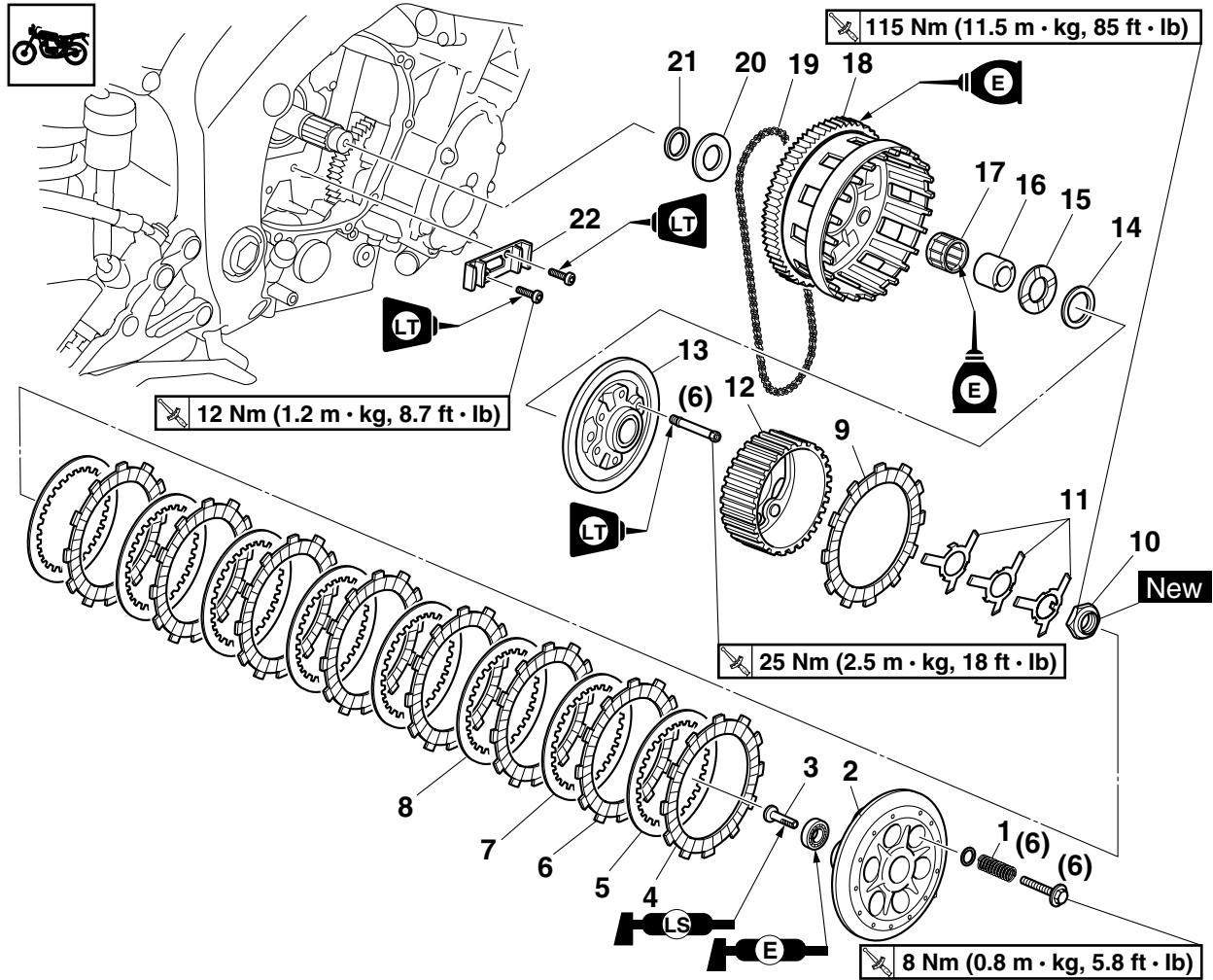


- Calculate the length “c” of the 15-link section of the drive chain using the following formula.
Drive chain 15-link section length “c” =
(length “a” between pin inner sides + length “b” between pin outer sides)/2

NOTE:

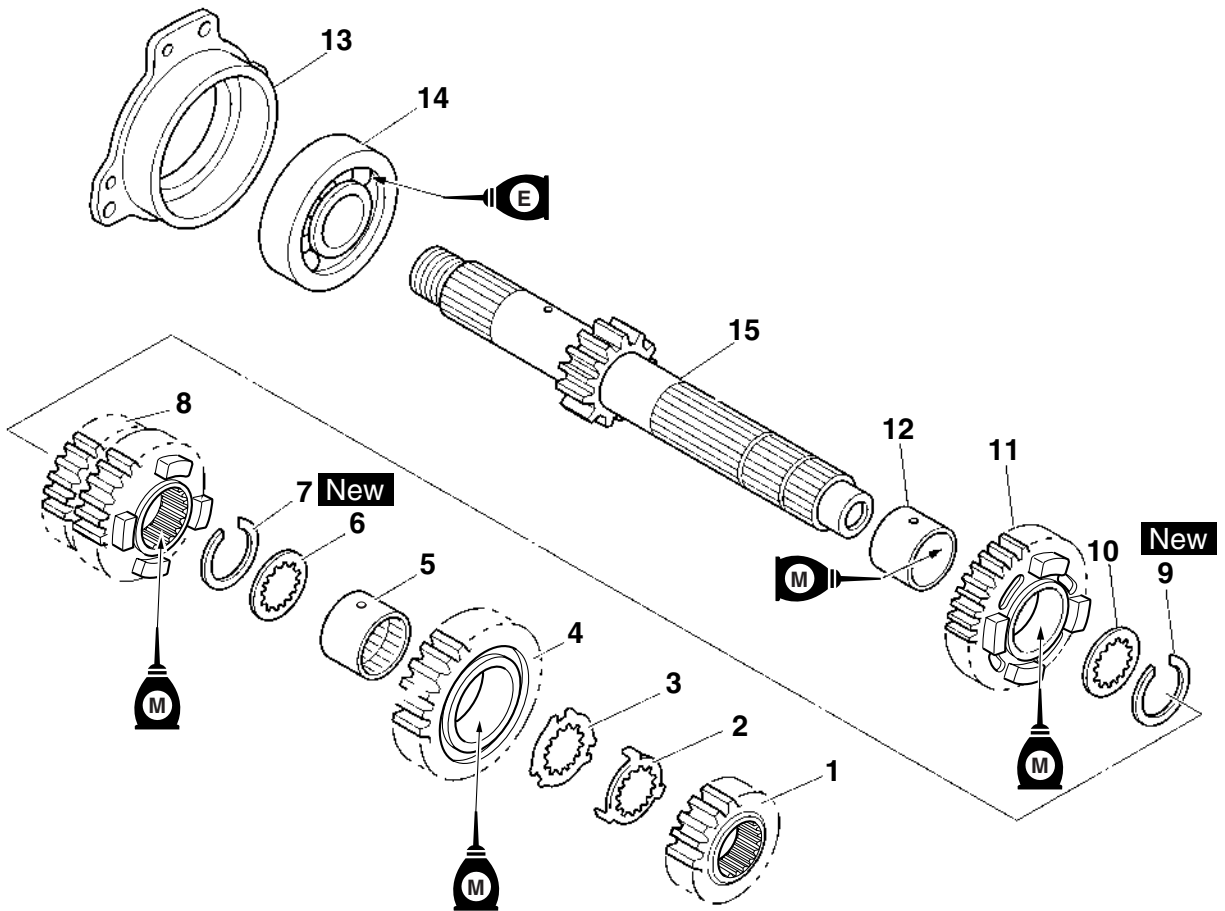
- When measuring a 15-link section of the drive chain, make sure that the drive chain is taut.
- Perform this procedure 2–3 times, at a different location each time.

Removing the clutch



Order	Job/Parts to remove	Q'ty	Remarks
	Ventilation chamber oil drain pipe		Refer to "OIL PUMP" on page 5-50.
1	Clutch spring	6	
2	Pressure plate	1	
3	Pull rod	1	
4	Friction plate 1	1	brown painting
5	Clutch plate 1	1	
6	Friction plate 2	7	black painting
7	Clutch plate 2	1	
8	Clutch plate 3	6	
9	Friction plate 3	1	purple painting
10	Clutch boss nut	1	
11	Spring	3	
12	Clutch boss	1	
13	Clutch boss plate	1	
14	Washer	1	
15	Thrust washer 1	1	
16	Spacer	1	

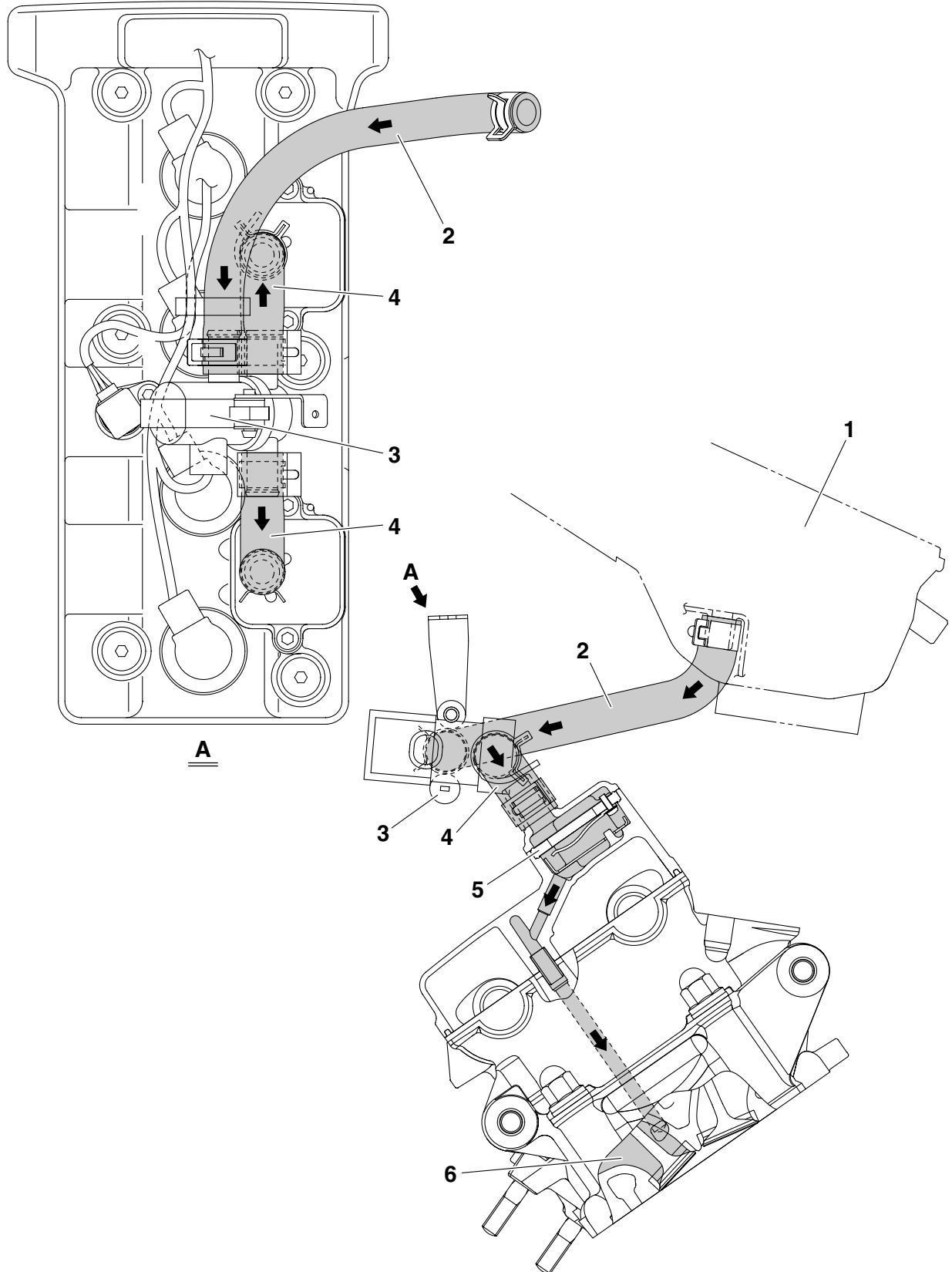
Disassembling the main axle assembly



Order	Job/Parts to remove	Q'ty	Remarks
1	2nd pinion gear	1	
2	Toothed lock washer	1	
3	Toothed lock washer retainer	1	
4	6th pinion gear	1	
5	Collar	1	
6	Washer	1	
7	Circlip	1	
8	3rd/4th pinion gear	1	
9	Circlip	1	
10	Washer	1	
11	5th pinion gear	1	
12	Collar	1	
13	Bearing housing	1	
14	Bearing	1	
15	Main axle/1st pinion gear	1	
			For assembly, reverse the disassembly procedure.

EAS27040

AIR INDUCTION SYSTEM



EAS27290

TROUBLESHOOTING

- Any of the following fail to light: turn signal light, brake light or indicator light.
- The horn fails to sound.

NOTE:

- Before troubleshooting, remove the following part(s):
 1. Rider seat
 2. Fuel tank
 3. Side cowlings
 4. Bottom cowlings
 5. Rear cowling

<p>1. Check the fuses. (Main, ignition and signaling system) Refer to "CHECKING THE FUSES" on page 8-85.</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 8-86.</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 8-81.</p>	<p>NG →</p>	<p>Replace the main switch.</p>
OK ↓		
<p>4. Check the entire signaling system's wiring. Refer to "CIRCUIT DIAGRAM" on page 8-21.</p>	<p>NG →</p>	<p>Properly connect or repair the signaling system's wiring.</p>
OK ↓		
<p>Check the condition of each of the signaling system's 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 8-81.</p>	<p>NG →</p>	<p>Replace the left handlebar switch.</p>
OK ↓		
<p>2. Check the horn. Refer to "CHECKING THE HORN" on page 8-95.</p>	<p>NG →</p>	<p>Replace the horn.</p>
OK ↓		

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FUEL PUMP SYSTEM

EAS27560

CIRCUIT DIAGRAM

