SERVICE MANUAL

2023 - 2025 CB300R

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A Few Words About Safety

Service Information

The service and repair information contained in this manual is intended for use by qualified, professional technicians.

Attempting service or repairs without the proper training, tools, and equipment could cause injury to you or others. It could also damage the vehicle or create an unsafe condition.

This manual describes the proper methods and procedures for performing service, maintenance and repairs. Some procedures require the use of specially designed tools and dedicated equipment. Any person who intends to use a replacement part, service procedure or a tool that is not recommended by Honda, must determine the risks to their personal safety and the safe operation of the vehicle.

If you need to replace a part, use genuine Honda parts with the correct part number or an equivalent part. We strongly recommend that you do not use replacement parts of inferior quality.

For Your Customer's Safety

Proper service and maintenance are essential to the customer's safety and the reliability of the vehicle. Any error or oversight while servicing a vehicle can result in faulty operation, damage to the vehicle, or injury to others.

⚠WARNING

Improper service or repairs can create an unsafe condition that can cause your customer to be seriously hurt or killed.

Follow the procedures and precautions in this manual and other service materials carefully.

For Your Safety

Because this manual is intended for the professional service technician, we do not provide warnings about many basic shop safety practices (e.g., Hot parts–wear gloves). If you have not received shop safety training or do not feel confident about your knowledge of safe servicing practice, we recommended that you do not attempt to perform the procedures described in this manual.

Some of the most important general service safety precautions are given below. However, we cannot warn you of every
conceivable hazard that can arise in performing service and repair procedures. Only you can decide whether or not you should perform a given task.

⚠WARNING

Failure to properly follow instructions and precautions can cause you to be seriously hurt or killed.

Follow the procedures and precautions in this manual carefully.

Important Safety Precautions

Make sure you have a clear understanding of all basic shop safety practices and that you are wearing appropriate clothing and using safety equipment. When performing any service task, be especially careful of the following:

- Read all of the instructions before you begin, and make sure you have the tools, the replacement or repair parts, and the skills required to perform the tasks safely and completely.
- Protect your eyes by using proper safety glasses, goggles or face shields any time you hammer, drill, grind, pry or work around pressurized air or liquids, and springs or other stored-energy components. If there is any doubt, put on eye protection.
- Use other protective wear when necessary, for example gloves or safety shoes. Handling hot or sharp parts can cause severe burns or cuts. Before you grab something that looks like it can hurt you, stop and put on gloves.
- Protect yourself and others whenever you have the vehicle up in the air. Any time you lift the vehicle, either with a hoist or a jack, make sure that it is always securely supported. Use jack stands.

Make sure the engine is off before you begin any servicing procedures, unless the instruction tells you to do otherwise. This will help eliminate several potential hazards:

- Carbon monoxide poisoning from engine exhaust. Be sure there is adequate ventilation whenever you run the engine.
- Burns from hot parts or coolant. Let the engine and exhaust system cool before working in those areas.
- Injury from moving parts. If the instruction tells you to run the engine, be sure your hands, fingers and clothing are out of the way.

Gasoline vapors and hydrogen gases from batteries are explosive. To reduce the possibility of a fire or explosion, be careful when working around gasoline or batteries.

- Use only a nonflammable solvent, not gasoline, to clean parts.
- Never drain or store gasoline in an open container.
- Keep all cigarettes, sparks and flames away from the battery and all fuel-related parts.

How To Use This Manual

This manual is the "Spec (Specific)" Service Manual. The service and repair information for this model is described in this manual as specific information. Refer to the “Basic" Service Manual for basic/common service information and instructions.

Follow the Maintenance Schedule recommendations to ensure that the vehicle is in peak operating condition. Performing the first scheduled maintenance is very important. It compensates for the initial wear that occurs during the break-in period.

Find the section you want on this page, then turn to the table of contents on the first page of the section.

Your safety, and the safety of others, is very important. To help you make informed decisions we have provided safety messages and other information throughout this manual. Of course, it is not practical or possible to warn you about all the hazards associated with servicing this vehicle.
You must use your own good judgment.
You will find important safety information in a variety of forms including:

- Safety Labels – on the vehicle
- Safety Messages – preceded by a safety alert symbol ⚠ and one of three signal words, DANGER, WARNING, or CAUTION. These signal words mean:

⚠DANGER You WILL be KILLED or SERIOUSLY HURT if you don’t follow instructions.

⚠WARNING You CAN be KILLED or SERIOUSLY HURT if you don’t follow instructions.

⚠CAUTION You CAN be HURT if you don’t follow instructions.

- Instructions – how to service this vehicle correctly and safely.

As you read this manual, you will find information that is preceded by a **NOTICE** symbol. The purpose of this message is to help prevent damage to your vehicle, other property, or the environment.

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SERVICE PUBLICATION OFFICE

Date of Issue: August, 2022

SYMBOLS

The symbols used throughout this manual show specific service procedures. If supplementary information is required pertaining to these symbols, it would be explained specifically in the text without the use of the symbols.

INSTRUCTION SYMBOL

	Removal or Disassembly procedure. Disconnect the connector.		Installation or Assembly procedure. Connect the connector.
	Order of removal/disassembly with a point of note.		Order of installation/assembly with a point of note.
	Tighten to the specified torque.		Replace with a new one before assembly.
	Inspect the part.		Measure the part for an inspection.
	Turn the ignition switch to OFF.		Turn the ignition switch to ON.
	Start the engine.		Measure the resistance or check continuity.
	Measure the voltage.		Measure the amps.
	Use a Honda special tool.		Refer to the "Basic" Service Manual for the instruction.

LUBRICATION AND SEAL SYMBOL

	Use the recommend engine oil.		Apply molybdenum oil solution (mixture of an engine oil and molybdenum grease in a ration of 1:1).
	Apply the specified grease. Use a multi-purpose grease unless otherwise specified.		Apply a liquid sealant.
	Apply a locking agent. Use a medium strength one unless otherwise specified.		Use DOT 3 or DOT 4 brake fluid.
	Use the specified fork oil or suspension fluid.		

MODEL IDENTIFICATION

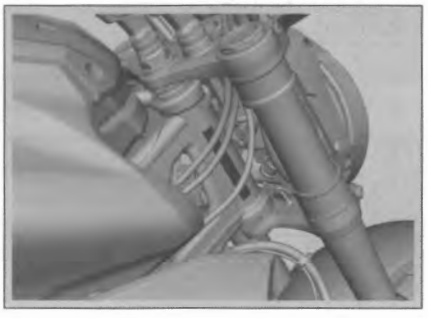
- Model name: CB300R

DESTINATION CODES

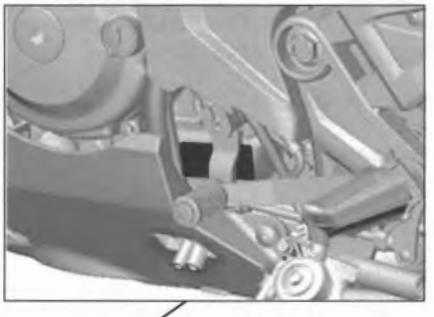
Throughout this manual, the following codes are used to identify individual types for each region.

Destination code	Region	EVAP canister
AC	USA 50 states (meet California)	O
CM	Canada	–

VEHICLE IDENTIFICATION NUMBER



ENGINE SERIAL NUMBER



SPECIFICATIONS

GENERAL SPECIFICATIONS

ITEM			SPECIFICATIONS
DIMENSIONS	Overall length		2,020 mm (79.5 in)
	Overall width		805 mm (31.7 in)
	Overall height		1,050 mm (41.3 in)
	Wheelbase		1,355 mm (53.3 in)
	Seat height		800 mm (31.5 in)
	Footpeg height		335 mm (13.2 in)
	Ground clearance		155 mm (6.1 in)
	Curb weight		144 kg (317 lbs)
	Maximum weight capacity		150 kg (331 lbs)
FRAME	Frame type		Diamond type
	Front suspension		Telescopic fork
	Front axle travel		118 mm (4.6 in)
	Rear suspension		Swingarm
	Rear axle travel		132 mm (5.2 in)
	Front tire size		110/70R17M/C 54H
	Rear tire size		150/60R17M/C 66H
	Front tire brand		GPR-300F M (DUNLOP)
	Rear tire brand		GPR-300 M (DUNLOP)
	Front brake		Hydraulic disc brake
	Rear brake		Hydraulic disc brake
	Caster angle		24°44'
	Trail length		93 mm (3.7 in)
	Fuel tank capacity		10.1 liter (2.67 US gal, 2.22 Imp gal)
ENGINE	Cylinder arrangement		Single cylinder 20° inclined from vertical
	Bore and stroke		76.0 x 63.0 mm (2.99 x 2.48 in)
	Displacement		286 cm^3 (17.4 cu-in)
	Compression ratio		10.7:1
	Valve train		Chain driven, DOHC
	Intake valve	opens	13° BTDC at 1.0 mm (0.04 in) lift
		closes	40° ABDC at 1.0 mm (0.04 in) lift
	Exhaust valve	opens	44° BBDC at 1.0 mm (0.04 in) lift
		closes	-4° ATDC at 1.0 mm (0.04 in) lift
	Lubrication system		Forced pressure and wet sump
	Oil pump type		Trochoid
	Cooling system		Liquid cooled
	Air filtration		Viscous paper filter
	Engine dry weight		35.8 kg (78.9 lbs)
	Emission control system	AC type	Crankcase emission control system Secondary air supply system Three-way catalytic converter Evaporative emission control system
		CM type	Crankcase emission control system Secondary air supply system Three-way catalytic converter
FUEL SYSTEM	Type		PGM-FI
	Throttle bore		38 mm (1.5 in)

ITEM			SPECIFICATIONS
DRIVE TRAIN	Clutch system		Multi-plate, wet
	Clutch operation system		Cable operating
	Transmission		6 speed
	Primary reduction		2.807 (73/26)
	Final reduction		2.571 (36/14)
	Gear ratio	1st	3.416 (41/12)
		2nd	2.250 (36/16)
		3rd	1.650 (33/20)
		4th	1.350 (27/20)
		5th	1.166 (28/24)
		6th	1.038 (27/26)
	Gearshift pattern		Left foot operated return system 1 - N - 2 - 3 - 4 - 5 - 6
ELECTRICAL	Ignition system		Full transistorized
	Starting system		Electric starter motor
	Charging system		Triple phase output alternator
	Regulator/rectifier		FET shorted/triple phase full wave rectification
	Lighting system		Battery

FUEL & ENGINE SPECIFICATIONS

FUEL SYSTEM

ITEM	SPECIFICATIONS
Throttle body identification number	GQ9SA
Idle speed	1,400 ± 100 rpm
Throttle grip freeplay	2 – 6 mm (0.1 – 0.2 in)
Fuel pressure at idle	267 – 326 kPa (2.7 – 3.3 kgf/cm^2, 39 – 47 psi)
Fuel pump flow (at 12 V)	103 cm^3 (3.5 US oz, 3.6 Imp oz) minimum/10 seconds

LUBRICATION SYSTEM

Unit: mm (in)

ITEM		STANDARD	LIMIT
Engine oil capacity	After draining	1.4 liter (1.5 US qt, 1.2 Imp qt)	–
	After draining/filter change	1.5 liter (1.6 US qt, 1.3 Imp qt)	–
	After disassembly	1.8 liter (1.9 US qt, 1.6 Imp qt)	–
Recommended engine oil		Pro Honda GN4 4-stroke oil (U.S.A. & Canada) or equivalent motorcycle oil API service classification: SJ or higher JASO T903 standard: MA Viscosity: SAE 10W-30	–
Oil pump rotor	Tip clearance	0.15 (0.006)	0.20 (0.008)

COOLING SYSTEM

ITEM		SPECIFICATIONS
Coolant capacity	Replacement	0.71 liter (0.75 US qt, 0.62 Imp qt)
	After disassembly	0.79 liter (0.83 US qt, 0.70 Imp qt)
Radiator cap relief pressure		107.9 – 137.3 kPa (1.1 – 1.4 kgf/cm^2,16 – 20 psi)
Thermostat	Begin to open	81 – 84°C (178 – 183°F)
	Fully open	95°C (203°F)
	Valve lift	3.5 mm (0.14 in) minimum
Recommended antifreeze		Pro Honda HP Coolant or an equivalent high quality ethylene glycol antifreeze containing corrosion protection inhibitors
Standard coolant concentration		1:1 mixture with distilled water

CYLINDER HEAD/VALVE

Unit: mm (in)

ITEM			STANDARD	LIMIT
Cylinder compression at 490 rpm			1,294 kPa (13.2 kgf/cm^2,188 psi)	–
Valve clearance		IN	0.16 ± 0.03 (0.006 ± 0.001)	–
		EX	0.27 ± 0.03 (0.011 ± 0.001)	–
Camshaft	Cam lobe height	IN	30.971 – 31.131 (1.2193 – 1.2256)	30.941 (1.2181)
		EX	30.879 – 31.039 (1.2157 – 1.2220)	30.849 (1.2145)
	Oil clearance		0.020 – 0.062 (0.0008 – 0.0024)	0.10 (0.004)
Rocker arm, rocker arm shaft	Shaft O.D.	IN/EX	9.972 – 9.987 (0.3926 – 0.3932)	–
	Arm I.D.	IN/EX	10.000 – 10.015 (0.3937 – 0.3943)	10.055 (0.3959)
Valve, valve guide	Valve stem O.D.	IN	4.475 – 4.490 (0.1762 – 0.1768)	4.465 (0.1758)
		EX	4.465 – 4.480 (0.1758 – 0.1764)	4.455 (0.1754)
	Valve guide I.D.	IN/EX	4.500 – 4.512 (0.1772 – 0.1776)	4.542 (0.1788)
	Valve guide height	IN/EX	13.8 – 14.0 (0.54 – 0.55)	–
	Valve seat width	IN/EX	0.90 – 1.10 (0.035 – 0.043)	1.50 (0.059)
Valve spring free length	Inner		35.24 (1.387)	34.5 (1.36)
	Outer		39.85 (1.569)	39.1 (1.54)
Cylinder head warpage			–	0.10 (0.004)
Exhaust pipe stud bolt height			21.5 – 22.5 (0.85 – 0.89)	–

CYLINDER/PISTON

Unit: mm (in)

ITEM			STANDARD	LIMIT
Cylinder	I.D.		76.000 – 76.010 (2.9921 – 2.9925)	76.1 (3.00)
	Warpage		–	0.10 (0.004)
Piston, Piston pin	Piston O.D. at 11 mm (0.4 in) from bottom of skirt		75.960 – 75.980 (2.9905 – 2.9913)	75.88 (2.987)
	Piston pin bore I.D.		17.002 – 17.008 (0.6694 – 0.6696)	17.02 (0.670)
	Piston pin O.D.		16.994 – 17.000 (0.6691 – 0.6693)	16.97 (0.668)
Piston rings	Piston ring end gap	Top	0.28 – 0.38 (0.011 – 0.015)	0.48 (0.019)
		Second	0.40 – 0.55 (0.016 – 0.022)	0.65 (0.026)
		Oil (side rail)	0.20 – 0.70 (0.008 – 0.028)	0.9 (0.04)
	Piston ring-to-ring groove clearance	Top	0.040 – 0.080 (0.0016 – 0.0031)	–
		Second	0.015 – 0.050 (0.0006 – 0.0020)	–
Connecting rod small end I.D.			17.016 – 17.034 (0.6699 – 0.6706)	17.044 (0.6710)

CLUTCH/GEARSHIFT LINKAGE

Unit: mm (in)

ITEM		STANDARD	LIMIT
Clutch lever freeplay		10 – 20 (0.4 – 0.8)	–
Clutch	Disc thickness	2.92 – 3.08 (0.115 – 0.121)	2.70 (0.106)
	Plate warpage	–	0.30 (0.012)
	Clutch spring free length	35.79 (1.409)	34.79 (1.370)
Clutch outer guide I.D.		19.978 – 19.992 (0.7865 – 0.7871)	–
Mainshaft O.D. at clutch outer guide		19.966 – 19.980 (0.7861 – 0.7866)	–

ALTERNATOR/STARTER CLUTCH

Unit: mm (in)

ITEM		STANDARD	LIMIT
Starter driven gear	I.D.	36.000 – 36.013 (1.4173 – 1.4178)	–
	O.D.	51.705 – 51.718 (2.0356 – 2.0361)	–

CRANKCASE/CRANKSHAFT/BALANCER

Unit: mm (in)

ITEM			STANDARD	LIMIT
Connecting rod	Side clearance		0.05 – 0.50 (0.002 – 0.020)	0.60 (0.024)
	Radial clearance		0.000 – 0.012 (0.0000 – 0.0005)	0.05 (0.002)
Crankshaft	Runout	Right	–	0.03 (0.001)
		Left	–	0.02 (0.001)
	Main journal oil clearance		0.018 – 0.045 (0.0007 – 0.0018)	0.065 (0.0026)
	Main journal O.D.		33.985 – 34.000 (1.3380 – 1.3386)	33.975 (1.3376)
Main journal bearing area I.D.			38.000 – 38.018 (1.4961 – 1.4968)	38.036 (1.4975)

TRANSMISSION

Unit: mm (in)

ITEM			STANDARD	LIMIT
Transmission	Gear I.D.	M5, M6	23.000 – 23.021 (0.9055 – 0.9063)	–
		C1	23.020 – 23.041 (0.9063 – 0.9071)	–
		C2	25.000 – 25.021 (0.9843 – 0.9851)	–
		C3, C4	28.000 – 28.021 (1.1024 – 1.1032)	–
	Gear bushing O.D.	M5, M6	22.959 – 22.980 (0.9039 – 0.9047)	–
		C1	22.984 – 23.005 (0.9049 – 0.9057)	–
		C2	24.959 – 24.980 (0.9826 – 0.9835)	–
		C3, C4	27.959 – 27.980 (1.1007 – 1.1016)	–
	Gear bushing I.D.	M5, C1	20.000 – 20.021 (0.7874 – 0.7882)	–
		C2	22.000 – 22.021 (0.8661 – 0.8670)	–
		C3	25.000 – 25.021 (0.9843 – 0.9851)	–
	Mainshaft O.D.	at M5 bushing	19.959 – 19.980 (0.7858 – 0.7866)	–
	Countershaft O.D.	at C1 bushing	19.959 – 19.980 (0.7858 – 0.7866)	–
		at C2 bushing	21.959 – 21.980 (0.8645 – 0.8854)	–
		at C3 bushing	24.959 – 24.980 (0.9826 – 0.9835)	–
Shift fork, shift fork shaft	Fork I.D.		12.000 – 12.018 (0.4724 – 0.4731)	–
	Fork shaft O.D.		11.957 – 11.968 (0.4707 – 0.4712)	–
	Fork claw thickness		4.93 – 5.00 (0.194 – 0.197)	4.83 (0.190)
Shift drum	Shift drum O.D.	Left side	23.959 – 23.980 (0.9433 – 0.9441)	–
	Shift drum journal I.D.	Left side	24.000 – 24.033 (0.9449 – 0.9462)	–
	Shift drum-to-shift drum journal clearance	Left side	0.020 – 0.074 (0.0008 – 0.0029)	–

FRAME & CHASSIS SPECIFICATIONS

FRONT WHEEL/SUSPENSION/STEERING

Unit: mm (in)

ITEM			STANDARD	LIMIT
Cold tire pressure	Driver only		200 kPa (2.00 kgf/cm^2, 29 psi)	–
	Driver and passenger		200 kPa (2.00 kgf/cm^2, 29 psi)	–
Axle runout			–	0.2 (0.01)
Wheel rim runout	Radial		–	2.0 (0.08)
	Axial		–	2.0 (0.08)
Wheel balance weight			60 g (2.1 oz) maximum	–
Fork	Spring free length	Right	285.4 (11.24)	279.7 (11.01)
		Left	351.3 (13.83)	344.3 (13.56)
	Recommended fluid		Fork Fluid (viscosity: 10W)	–
	Fluid level	Right	169 (6.7)	–
		Left	75 (3.0)	–
	Fluid capacity	Right	435 ± 2.5 cm^3 (14.7 ± 0.08 US oz, 15.3 ± 0.09 Imp)	–
		Left	455 ± 2.5 cm^3 (15.4 ± 0.08 US oz, 16.0 ± 0.09 Imp)	–

REAR WHEEL/SUSPENSION

Unit: mm (in)

ITEM			STANDARD	LIMIT
Cold tire pressure	Driver only		225 kPa (2.25 kgf/cm^2, 33 psi)	–
	Driver and passenger		225 kPa (2.25 kgf/cm^2, 33 psi)	–
Axle runout			–	0.2 (0.01)
Wheel rim runout	Radial		–	2.0 (0.08)
	Axial		–	2.0 (0.08)
Shock absorber pre-load adjuster standard position			3rd position from minimum	–
Wheel balance weight			60 g (2.1 oz) maximum	–
Drive chain slack			50 – 55 (2.0 – 2.2)	60 (2.4)
Drive chain size/link		DID	DID 520VF2-108LE	–
		RK	RK 520MOZX-108LE	–

HYDRAULIC BRAKE

Unit: mm (in)

ITEM		STANDARD	LIMIT
Front	Specified brake fluid	DOT 3 or 4 brake fluid	–
	Brake disc thickness	4.5 ± 0.2 (0.18 ± 0.01)	3.5 (0.14)
	Brake disc warpage	–	0.30 (0.012)
	Master cylinder I.D.	12.700 (0.5000)	–
	Master piston O.D.	12.700 (0.5000)	–
	Caliper cylinder I.D.	25.400 (1.0000)	–
	Caliper piston O.D.	25.400 (1.0000)	–
Rear	Specified brake fluid	DOT 3 or 4 brake fluid	–
	Brake disc thickness	5.0 ± 0.2 (0.20 ± 0.01)	4.0 (0.16)
	Brake disc warpage	–	0.30 (0.012)
	Master cylinder I.D.	12.700 (0.5000)	–
	Master piston O.D.	12.700 (0.5000)	–
	Caliper cylinder I.D.	33.960 (1.3370)	–
	Caliper piston O.D.	33.960 (1.3370)	–

ELECTRICAL SYSTEM SPECIFICATIONS

PGM-FI SYSTEM

ITEM	SPECIFICATIONS
IACV resistance (25°C/77°F)	90 – 130 Ω
IAT sensor resistance (25°C/77°F)	1.8 – 2.4 kΩ
ECT sensor resistance (40°C/104°F)	1.0 – 1.2 kΩ
Fuel injector resistance (20°C/68°F)	11 – 13 Ω
O_2 sensor heater resistance (20°C/68°F)	13.0 – 18.5 Ω
PAIR control solenoid valve resistance (20°C/68°F)	20 – 24 Ω
EVAP purge control solenoid valve resistance (20°C/68°F) (AC type)	36 – 44 Ω

ABS SYSTEM

ITEM		SPECIFICATIONS
Air gap	Front (between the wheel sensor bracket of the fork and pulser ring)	0.58 – 1.10 mm (0.023 – 0.043 in)
	Rear (between the caliper bracket and pulser ring)	0.89 – 1.34 mm (0.035 – 0.053 in)

IGNITION SYSTEM

ITEM	SPECIFICATIONS
Spark plug	SIMR8A9 (NGK)
Spark plug gap	0.8 – 0.9 mm (0.031 – 0.035 in)
Ignition coil peak voltage	100 V minimum
CKP sensor peak voltage	0.7 V minimum
Ignition timing	10° BTDC at idle speed

BATTERY/CHARGING SYSTEM

ITEM			SPECIFICATIONS
Battery	Type		YTZ8V
	Capacity		12 V – 7 Ah (10 HR) /7.4 Ah (20 HR)
	Voltage	Fully charged	12.8 V minimum
		Needs charging	Below 12.4 V
	Charging current	Normal	0.7 A/5 – 10 h
		Quick	3.5 A/1 h
Current leakage			0.11 mA maximum
Alternator	Capacity		0.34 kW/5,000 rpm
	Charging coil resistance (20°C/68°F)		0.1 – 1.0 Ω

LIGHTS/METERS/SWITCHES

ITEM			SPECIFICATIONS
Fuse	Main fuse		30 A
	Sub fuse		10 A x 3
	Sub fuse		7.5 A x 3
	ABS MOTOR fuse		30 A
	ABS SOL fuse		20 A
	ABS ECU fuse		7.5 A
Fuel level sensor resistance		Full	5.5 – 8.5 Ω
		Empty	385 – 395 Ω

TORQUE VALUE

- Each fastener should be tightened to the standard torque value except the fasteners specified torque value.
- Q'TY: Quantity, DIA: Thread diameter [mm], TRQ: Tightening torque [N·m (kgf·m, lbf·ft)]

STANDARD TIGHTENING TORQUE

FASTENER TYPE	TRQ	FASTENER TYPE	TRQ
5 mm hex bolt and nut	5.2 (0.5, 3.8)	5 mm screw	4.2 (0.4, 3.1)
6 mm hex bolt and nut	10 (1.0, 7)	6 mm screw	9.0 (0.9, 6.6)
8 mm hex bolt and nut	22 (2.2, 16)	6 mm flange bolt	12 (1.2, 9)
10 mm hex bolt and nut	34 (3.5, 25)	8 mm flange bolt and nut	27 (2.8, 20)
12 mm hex bolt and nut	54 5.5, 40)	10 mm flange bolt and nut	39 (4.0, 29)

FUEL PUMP UNIT

ITEM	Q'TY	DIA	TRQ	REMARKS
Fuel pump setting plate nut	4	6	12 (1.2, 9)	→2-4

FUEL TANK

ITEM	Q'TY	DIA	TRQ	REMARKS
Fuel filler cap bolt	3	4	1.8 (0.2, 1.3)	

AIR CLEANER

ITEM	Q'TY	DIA	TRQ	REMARKS
Fuel tank bracket mount bolt	4	6	12 (1.2, 9)	
Air cleaner cover screw	4	5	1.1 (0.1, 0.8)	
Air cleaner element screw	2	5	1.1 (0.1, 0.8)	

THROTTLE BODY

ITEM	Q'TY	DIA	TRQ	REMARKS
Throttle cable A lock nut (throttle body side)	1	6	4.5 (0.5, 3.3)	
Throttle cable B lock nut (throttle body side)	1	6	4.5 (0.5, 3.3)	
Sensor unit torx screw	3	5	3.4 (0.3, 2.5)	
IACV setting plate torx screw	2	4	2.1 (0.2, 1.5)	
Throttle cable holder screw	2	5	3.4 (0.3, 2.5)	
Hose clamp stay screw	1	5	3.4 (0.3, 2.5)	
Fuel hose stay screw	1	5	3.4 (0.3, 2.5)	
Injector joint mounting bolt	2	5	5.1 (0.5, 3.8)	
Throttle body insulator band screw	2	–	4.2 (0.4, 3.1)	

SECONDARY AIR SUPPLY SYSTEM

ITEM	Q'TY	DIA	TRQ	REMARKS
PAIR check valve cover bolt	2	5	5.2 (0.5, 3.8)	

LUBRICATION SYSTEM

ITEM	Q'TY	DIA	TRQ	REMARKS
Oil drain bolt	1	12	24 (2.4, 18)	

COOLING SYSTEM

ITEM	Q'TY	DIA	TRQ	REMARKS
Cooling fan nut	1	3	1.0 (0.1, 0.7)	Apply locking agent.
Fan motor shroud bolt	2	6	8.4 (0.9, 6.2)	
Fan motor screw	3	4	2.7 (0.3, 2.0)	
Water pump impeller	1	7	10 (1.0, 7)	

CYLINDER HEAD

ITEM	Q'TY	DIA	TRQ	REMARKS
Crankshaft hole cap	1	30	8.0 (0.8, 5.9)	Apply engine oil.
Timing hole cap	1	14	6.0 (0.6, 4.4)	Apply engine oil.
Cylinder head cover bolt	2	6	10 (1.0, 7)	
Cam chain tensioner lifter plug	1	6	4.2 (0.4, 3.1)	
Camshaft holder mounting bolt	8	6	12 (1.2, 9)	Apply engine oil.
Cylinder head mounting nut	4	10	45 (4.6, 33)	Apply engine oil.
Cylinder head sealing bolt	2	12	15 (1.5, 11)	

CYLINDER/PISTON

ITEM	Q'TY	DIA	TRQ	REMARKS
Cylinder stud bolt	4	10	–	→2-29

CLUTCH/GEARSHIFT LINKAGE

ITEM	Q'TY	DIA	TRQ	REMARKS
Clutch center lock nut	1	16	108 (11.0, 80)	Lock nut; replace with a new one and stake. Apply engine oil.
Clutch lifter plate bolt	3	6	10 (1.0, 7)	
Primary drive gear lock nut	1	16	108 (11.0, 80)	Apply engine oil.
Shift drum stopper arm bolt	1	6	10 (1.0, 7)	Apply locking agent.
Shift drum stopper plate bolt	1	6	10 (1.0, 7)	Apply locking agent.

ALTERNATOR/STARTER CLUTCH

ITEM	Q'TY	DIA	TRQ	REMARKS
Starter clutch socket bolt	6	8	30 (3.1, 22)	Apply locking agent. Coating width: 6.5 ± 1.0 mm (0.26 ± 0.04 in) from tip
Flywheel bolt	1	12	128 (13.1, 94)	Apply engine oil.
CKP sensor mounting socket bolt	2	6	10 (1.0, 7)	Apply locking agent. Coating width: 6.5 ± 1.0 mm (0.26 ± 0.04 in) from tip
Stator mounting socket bolt	3	6	10 (1.0, 7)	Apply locking agent. Coating width: 6.5 ± 1.0 mm (0.26 ± 0.04 in) from tip

CRANKCASE/TRANSMISSION/BALANCER

ITEM	Q'TY	DIA	TRQ	REMARKS
Cam chain tensioner pivot bolt	1	6	10 (1.0, 7)	Apply locking agent. Coating width: 6.5 ± 1.0 mm (0.26 ± 0.04 in) from tip
Balancer shaft nut	1	14	44 (4.5, 32)	Apply engine oil.

ENGINE UNIT

ITEM		Q'TY	DIA	TRQ	REMARKS
Engine hanger plate bolt		2	10	54 (5.5, 40)	
Engine hanger nut	Front upper	1	10	54 (5.5, 40)	
	Front lower	1	10	54 (5.5, 40)	
	Rear upper	1	10	54 (5.5, 40)	
	Rear lower	1	10	54 (5.5, 40)	
Drive sprocket fixing plate bolt		2	6	10 (1.0, 7)	
Starter motor cable terminal nut		1	6	7.0 (0.7, 5.2)	

BODY PANELS

ITEM	Q'TY	DIA	TRQ	REMARKS
Fuel tank cover mounting socket bolt (front)	2	5	4.2 (0.4, 3.1)	
Fuel tank cover mounting socket bolt (side)	2	5	4.2 (0.4, 3.1)	
Fuel tank cover mounting socket bolt (upper)	1	6	10 (1.0, 7)	
Fuel tank cover mounting socket bolt (rear)	2	6	10 (1.0, 7)	
Fuel tank inner cover screw	4	4	0.9 (0.1, 0.7)	
Fuel tank inner cover socket bolt	2	5	4.2 (0.4, 3.1)	
Radiator cover socket bolt	2	5	4.2 (0.4, 3.1)	
Radiator cover inner cover socket bolt (front)	4	6	10 (1.0, 7)	
Radiator cover inner cover socket bolt (rear)	2	5	4.2 (0.4, 3.1)	
Under cowl socket bolt	2	6	10 (1.0, 7)	
Under cowl screw	1	5	4.2 (0.4, 3.1)	
Rear cowl socket bolt	2	5	4.2 (0.4, 3.1)	
Rear center cover screw	2	5	0.9 (0.1, 0.7)	
Drive chain case socket bolt	4	6	10 (1.0, 7)	
License light stay socket bolt	4	6	10 (1.0, 7)	
Rear fender A bolt	4	5	4.2 (0.4, 3.1)	
Rear fender under cover socket bolt	1	5	4.2 (0.4, 3.1)	
License light screw	2	4	1.2 (0.1, 0.9)	
License light cover screw	4	4	0.9 (0.1, 0.7)	
Reflector nut	1	5	1.5 (0.2, 1.1)	Self lock nut
Front reflector nut	2	6	1.5 (0.2, 1.1)	Self lock nut
Rear fender B socket bolt	2	6	10 (1.0, 7)	
Rearview mirror lock nut	2	10	20 (2.0, 15)	Left-hand threads
Rearview mirror adapter bolt	2	10	20 (2.0, 15)	

ITEM	Q'TY	DIA	TRQ	REMARKS
Main seat socket bolt	2	6	10 (1.0, 7)	
Front fender socket bolt	6	6	10 (1.0, 7)	
Step bracket socket bolt	2	8	35 (3.6, 26)	
Step bolt	2	8	27 (2.8, 20)	Replace with a new one.
Swingarm pivot nut	1	14	88 (9.0, 65)	Self lock nut
Passenger step mounting socket bolt	4	8	27 (2.8, 20)	

SIDESTAND

ITEM	Q'TY	DIA	TRQ	REMARKS
Sidestand pivot bolt	1	10	10 (1.0, 7)	
Sidestand pivot nut	1	10	44 (4.5, 32)	Self lock nut
Sidestand switch bolt	1	6	10 (1.0, 7)	Replace with a new one.

EXHAUST PIPE/MUFFLER

ITEM	Q'TY	DIA	TRQ	REMARKS
Exhaust pipe stud bolt	2	8	–	→3-16
Exhaust pipe joint nut	2	8	18 (1.8, 13)	
Exhaust pipe mounting nut	1	8	27 (2.8, 20)	
Muffler mounting nut	1	8	27 (2.8, 20)	
Muffler band bolt	1	8	22.5 (2.3, 17)	
Muffler cover bolt	1	6	10 (1.0, 7)	
Muffler protector bolt	1	6	10 (1.0, 7)	

FRONT WHEEL

ITEM	Q'TY	DIA	TRQ	REMARKS
Front axle nut	1	14	59 (6.0, 44)	
Front axle holder bolt	2	8	24 (2.4, 18)	
Front brake disc bolt	5	8	35 (3.6, 26)	Replace with a new one.

FORK

ITEM	Q'TY	DIA	TRQ	REMARKS
Top bridge pinch bolt	2	8	22 (2.2, 16)	
Bottom bridge pinch bolt	2	10	32 (3.3, 24)	
Fork cap	2	45	35 (3.6, 26)	
Fork rod nut	2	–	18 (1.8, 13)	

HANDLEBAR

ITEM	Q'TY	DIA	TRQ	REMARKS
Left handlebar switch screw	2	5	2.5 (0.3, 1.8)	
Right handlebar switch screw	2	5	2.5 (0.3, 1.8)	
Handlebar upper holder bolt	4	8	27 (2.8, 20)	
Lower handlebar holder nut	2	8	27 (2.8, 20)	Self lock nut

STEERING STEM

ITEM	Q'TY	DIA	TRQ	REMARKS
Steering stem nut	1	24	103 (10.5, 76)	
Steering stem adjusting nut	1	26	–	→3-25
Top bridge pinch bolt	2	8	22 (2.2, 16)	
Headlight stay bolt	2	6	10 (1.0, 7)	

REAR WHEEL

ITEM	Q'TY	DIA	TRQ	REMARKS
Rear axle nut	1	16	88 (9.0, 65)	Self lock nut
Drive chain adjuster lock nut	2	8	21 (2.1, 15)	
Driven sprocket nut	6	10	65 (6.6, 48)	Self lock nut Apply engine oil.
Rear brake disc bolt	4	8	42 (4.3, 31)	Replace with a new one.
Pulser ring mounting bolt	4	5	7.0 (0.7, 5.2)	Replace with a new one.

REAR SUSPENSION

ITEM	Q'TY	DIA	TRQ	REMARKS
Shock absorber upper nut	1	10	44 (4.5, 32)	Self lock nut
Shock absorber lower nut	1	10	44 (4.5, 32)	Self lock nut
Swingarm pivot nut	1	14	88 (9.0, 65)	Self lock nut
Drive chain slider screw	1	5	5.0 (0.5, 4)	Replace with a new one.

FRONT BRAKE

ITEM	Q'TY	DIA	TRQ	REMARKS
Front brake hose oil bolt	2	10	34 (3.5, 25)	
Front master cylinder bolt	2	6	12 (1.2, 9)	
Front master cylinder reservoir cover screw	2	4	1.5 (0.2, 1.1)	
Brake lever pivot bolt	1	6	1.0 (0.1, 0.7)	
Brake lever pivot nut	1	6	5.9 (0.6, 4.4)	
Front brake light switch screw	1	4	1.2 (0.1, 0.9)	
Front brake caliper mounting bolt	2	10	45 (4.6, 33)	Replace with a new one.
Front brake caliper bleed valve	1	8	5.4 (0.6, 4.0)	
Front brake caliper assembly torx bolt	3	8	27 (2.8, 20)	Apply locking agent.

REAR BRAKE

ITEM	Q'TY	DIA	TRQ	REMARKS
Rear brake hose oil bolt	2	10	34 (3.5, 25)	
Rear master cylinder socket bolt	2	6	12 (1.2, 9)	
Rear master cylinder reservoir cover screw	2	4	1.5 (0.2, 1.1)	
Rear master cylinder hose joint screw	1	4	1.5 (0.2, 1.1)	Apply locking agent.
Rear master cylinder push rod lock nut	1	8	17 (1.7, 13)	
Rear brake pad hanger pin	1	10	17 (1.7, 13)	
Rear brake caliper bleed valve	1	8	5.4 (0.6, 4.0)	

PGM-FI SYSTEM

ITEM	Q'TY	DIA	TRQ	REMARKS
ECT sensor	1	10	12 (1.2, 9)	
O_2 sensor	1	12	25 (2.5, 18)	
Bank angle sensor mounting bolt	2	6	10 (1.0, 7)	

IGNITION SYSTEM

ITEM	Q'TY	DIA	TRQ	REMARKS
Spark plug	1	10	16 (1.6, 12)	

ELECTRICAL STARTER

ITEM	Q'TY	DIA	TRQ	REMARKS
Negative brush screw	1	5	1.9 (0.2, 1.4)	
Starter motor assembly bolt	2	5	5.2 (0.5, 3.8)	
Starter motor terminal nut	1	6	8.8 (0.9, 6.5)	

ABS

ITEM	Q'TY	DIA	TRQ	REMARKS
Modulator cover socket bolt	2	5	4.2 (0.4, 3.1)	
Brake pipe joint nut	3	10	14 (1.4, 10)	
Brake hose oil bolt	1	10	34 (3.5, 25)	

BATTERY/CHARGING SYSTEM

ITEM	Q'TY	DIA	TRQ	REMARKS
Starter relay switch socket bolt	1	5	5.1 (0.5, 3.8)	
Fuel tank mount socket bolt	2	6	12 (1.2, 9)	
Battery band bolt	1	6	10 (1.0, 7)	

LIGHTING SYSTEM

ITEM	Q'TY	DIA	TRQ	REMARKS
Brake/taillight nut	2	6	9.0 (0.9, 6.6)	
Headlight cover socket bolt	6	5	4.2 (0.4, 3.1)	
Meter cover socket bolt	2	5	4.2 (0.4, 3.1)	

COMBINATION METER

ITEM	Q'TY	DIA	TRQ	REMARKS
Meter screw	3	5	1.0 (0.1, 0.7)	

ELECTRICAL COMPONENT

ITEM	Q'TY	DIA	TRQ	REMARKS
Ignition switch bolt	2	8	26 (2.7, 19)	One-way bolt, replace with a new one.
Sidestand switch bolt	1	6	10 (1.0, 7)	Replace with a new one.

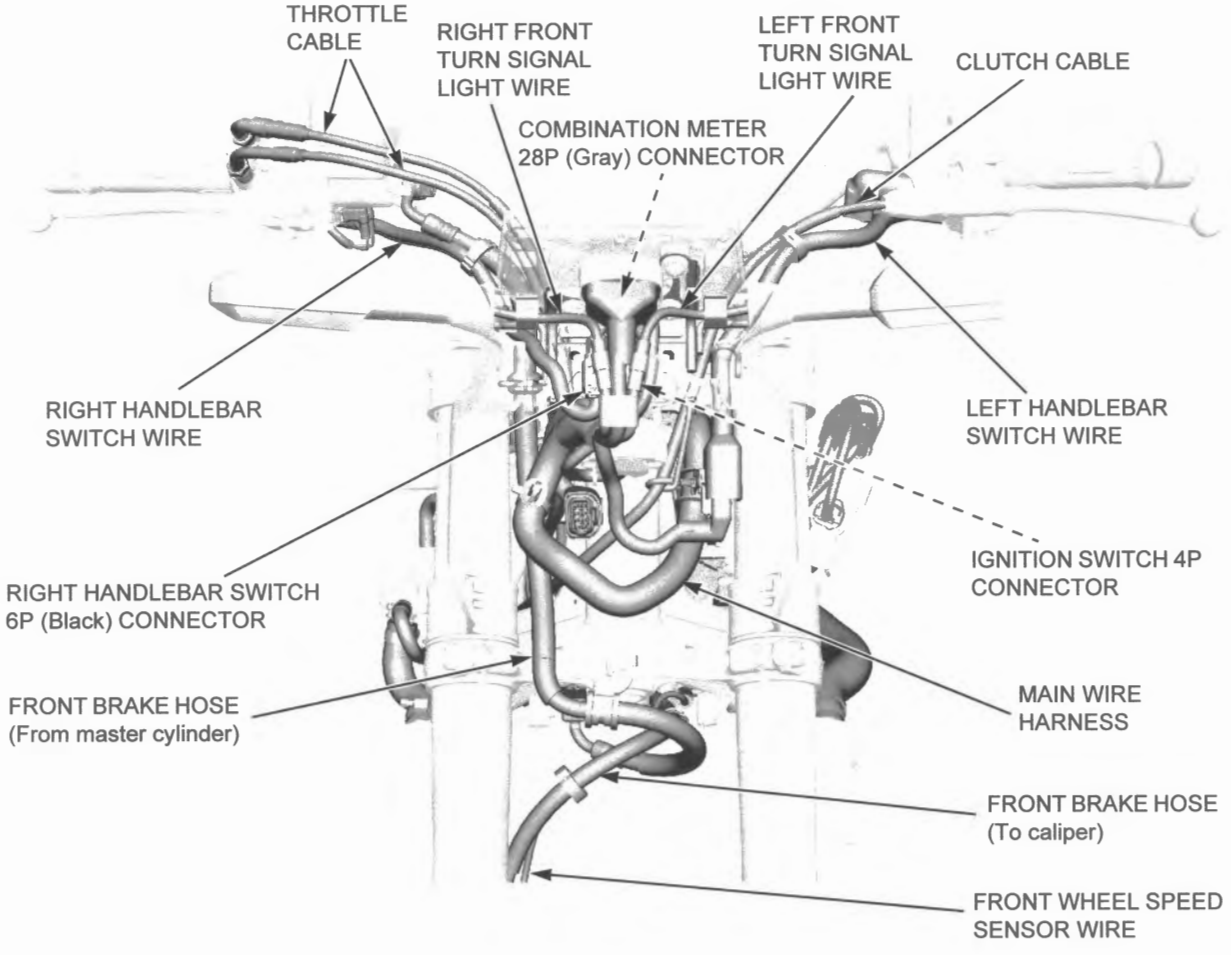
OTHERS

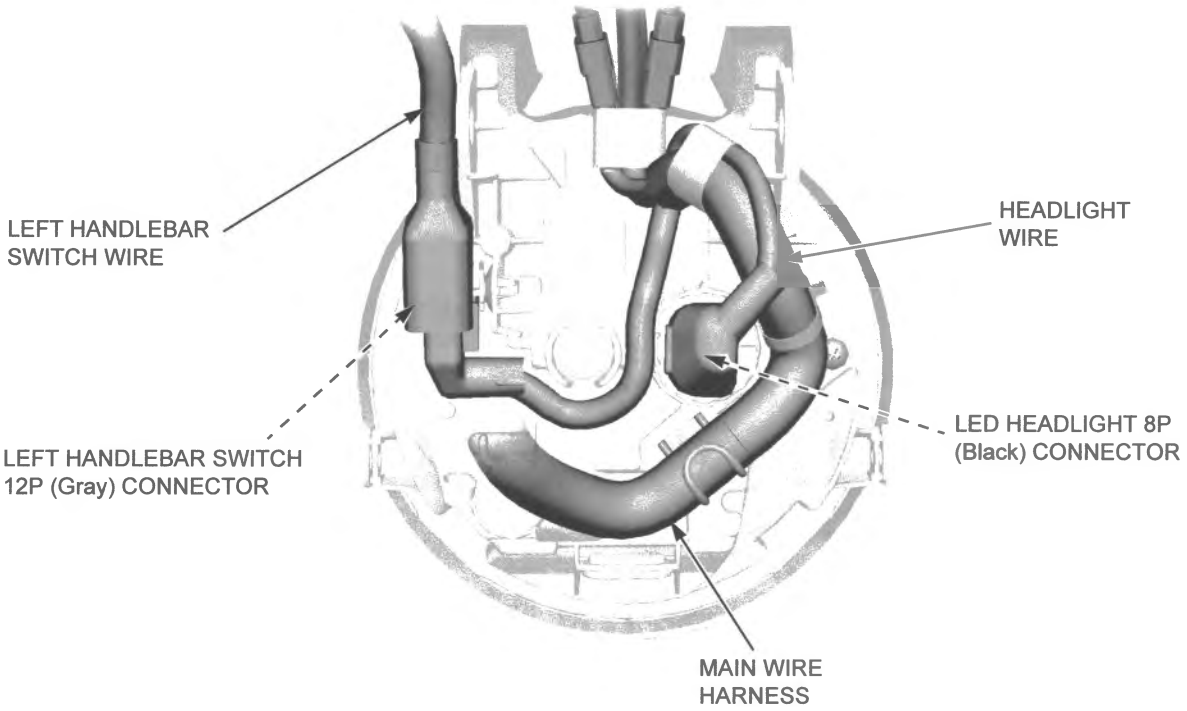
ITEM	Q'TY	DIA	TRQ	REMARKS
Throttle cable A lock nut (handlebar side)	1	10	1.5 (0.2, 1.1)	
Throttle cable A adjusting lock nut (handlebar side)	1	7	3.8 (0.4, 2.8)	
Throttle cable B lock nut (handlebar side)	1	12	1.5 (0.2, 1.1)	
Clutch lever pivot bolt	1	6	1.0 (0.1, 0.7)	
Clutch lever pivot nut	1	6	6.0 (0.6, 4.4)	
Harness stay screw (headlight)	2	5	1.0 (0.1, 0.7)	
Bank angle sensor bolt	2	6	11 (1.1, 8)	
Gearshift spindle return spring pin	1	8	30 (3.1, 22)	Apply locking agent.
Right crankcase sealing bolt	1	16	30 (3.1, 22)	Apply locking agent.

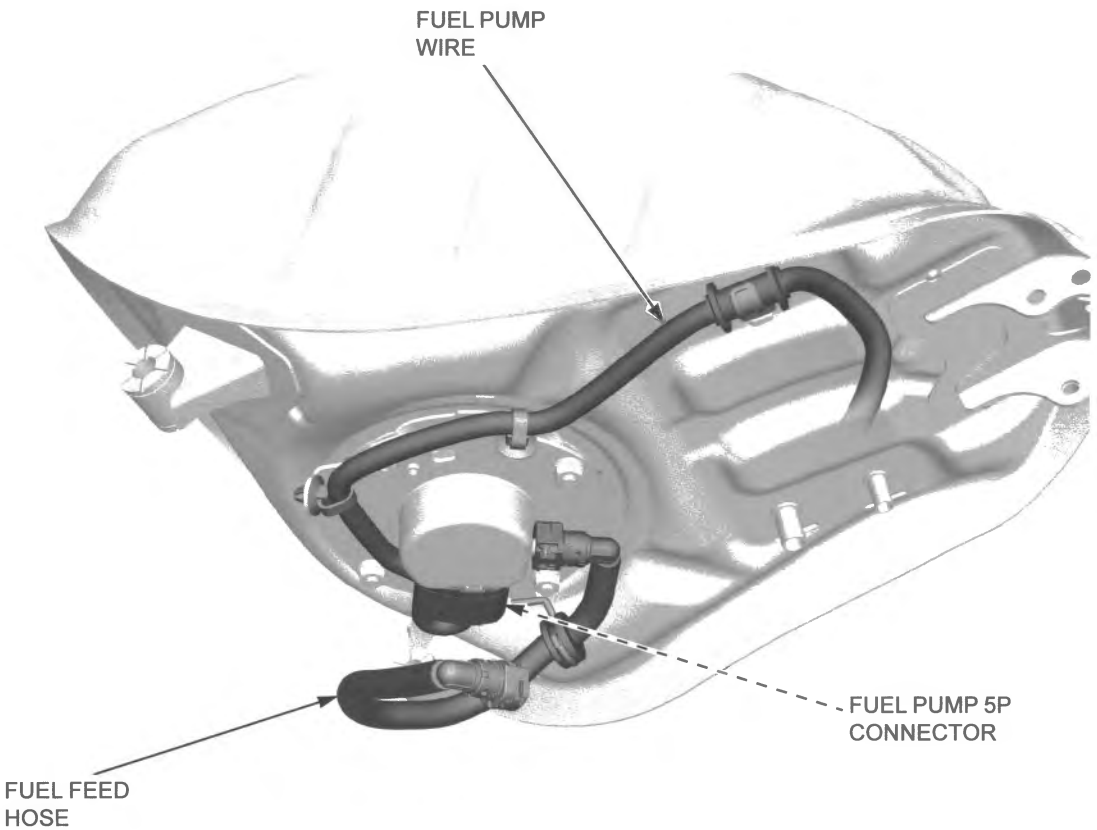
SPECIAL TOOL LIST

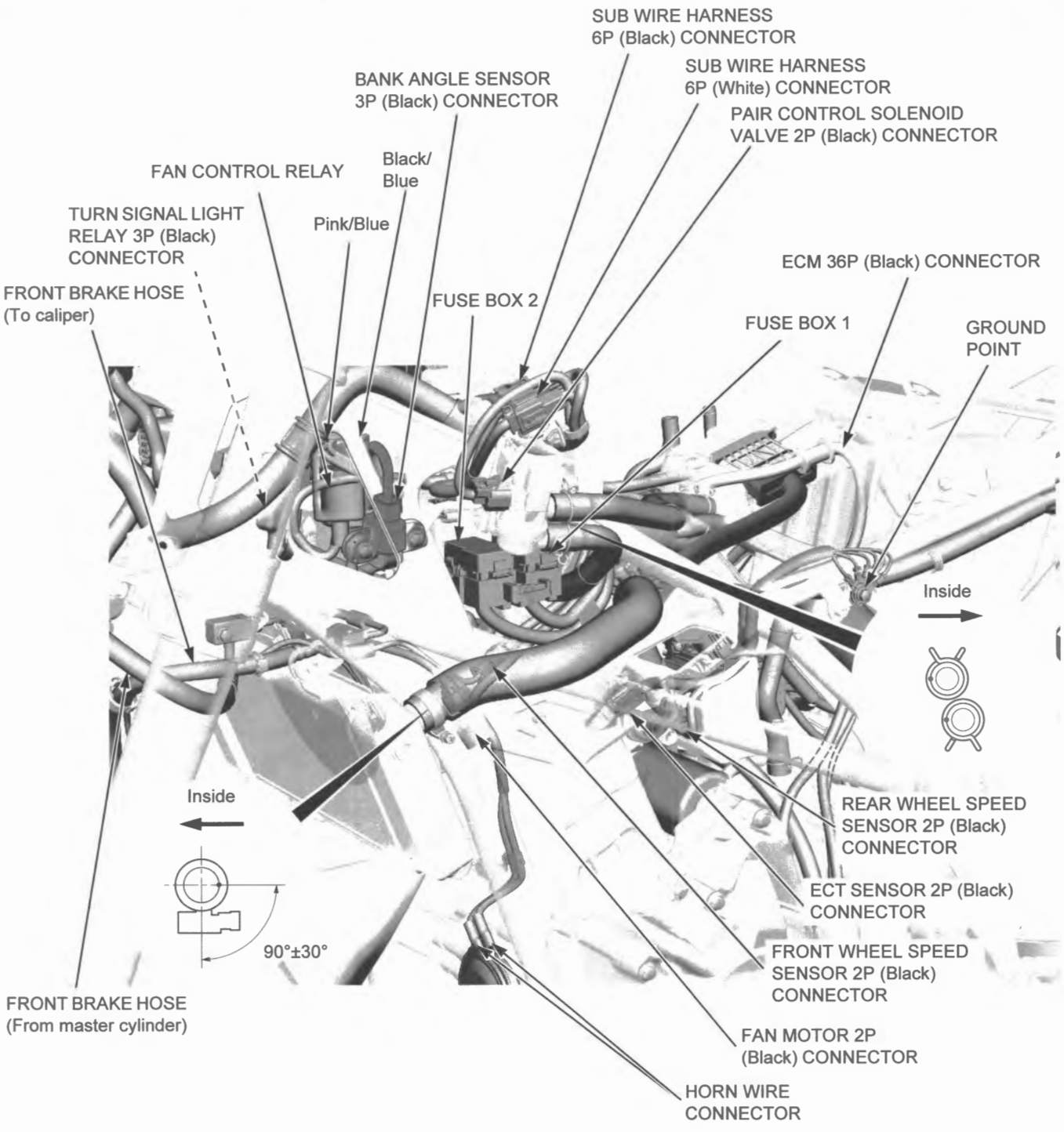
TOOL No./TOOL NAME		U.S.A. TOOL No./U.S.A. TOOL NAME
Fuel & Engine		
07406-0040004	Fuel pressure gauge set	07406-004000C
070MJ-K260100	Fuel pressure gauge attachment set	07AMJ-K26A100 + 07AAJ-S6MA200 + 07AMJ-HW3A100
070MF-KVS0300	Remover,fuel pump case	
070MZ-0010300	SCS short connector	070MZ-001A300
07709-0010001	Timing cap wrench	
070MG-0010100	Stopper tensioner	07AMG-001A100
07757-0010000	Valve spring compressor set	
07959-KM30101	Valve spring compressor attachment 21	07GME-001000A
07HMH-ML00101	Valve guide reamer 4.508	07HMH-ML0010B U.S.A. only
07HMD-ML00101	Valve guide driver 4.3 x 8.5	
07743-0020000	Valve guide driver adjustable type	07742-0010100 or 07942-6570100
07724-0050002	Clutch center holder P.D. 48-135	Snap-on MTP08-0008
07724-0010200	Gear holder M1.5 mm	07724-001A200
07PAF-0010620	Pilot collar, 16 mm	
07746-0050200	Remover head 10 mm	
07725-0040001	Holder fly wheel	
07733-0020001	Outside screw puller	07933-2160000 (M16), 07933-3950000 (M20), 07933-3290001 (M22)
07724-0010100	Gear holder M2.5 mm	07724-001A100
070MF-KYJ0100	Metal installer set	070MF-KYJA100
Frame & Chassis		
07746-0050400	Remover head 15 mm	
07746-0050100	Bearing remover shaft 9 x 200L	
07746-0010300	Attachment, 42 x 47 mm	
07746-0040300	Pilot 15 mm	
07749-0010000	Driver handle, 15 x 135L	
070MA-MGP0100	Fork bolt wrench	07AMA-MGPA100
07KMD-KZ30100	Fork seal driver 45.2	07KMD-KZ3010A U.S.A. only
07RMD-MW40100	Fork seal driver attachment 41.3	07RMC-KCW0100
07916-3710101	Locknut wrench 5.7 x 50	Use 07916-3710101 or 07916-3710000 for USA
07953-MJ10100	Remover attachment 40	07953-MJ1000B
07953-MJ10200	Handle 370	07953-MJ1000B
07946-3710500	Ball race remover 44.5	07946-3710300
07946-MB00000	Driver, 30 mm I.D.	07946-ME90200 + 07947-KA50100 + 07965-MA60000
07746-0050500	Remover head 17 mm	
07746-0010200	Attachment, 37 x 40 mm	
07746-0040400	Pilot 17 mm	
07746-0040500	Pilot 20 mm	
07914-SA50001	Snap ring pliers	07AAA-PAAA100
Electrical System		
07HGJ-0020100	Peak voltage adapter	

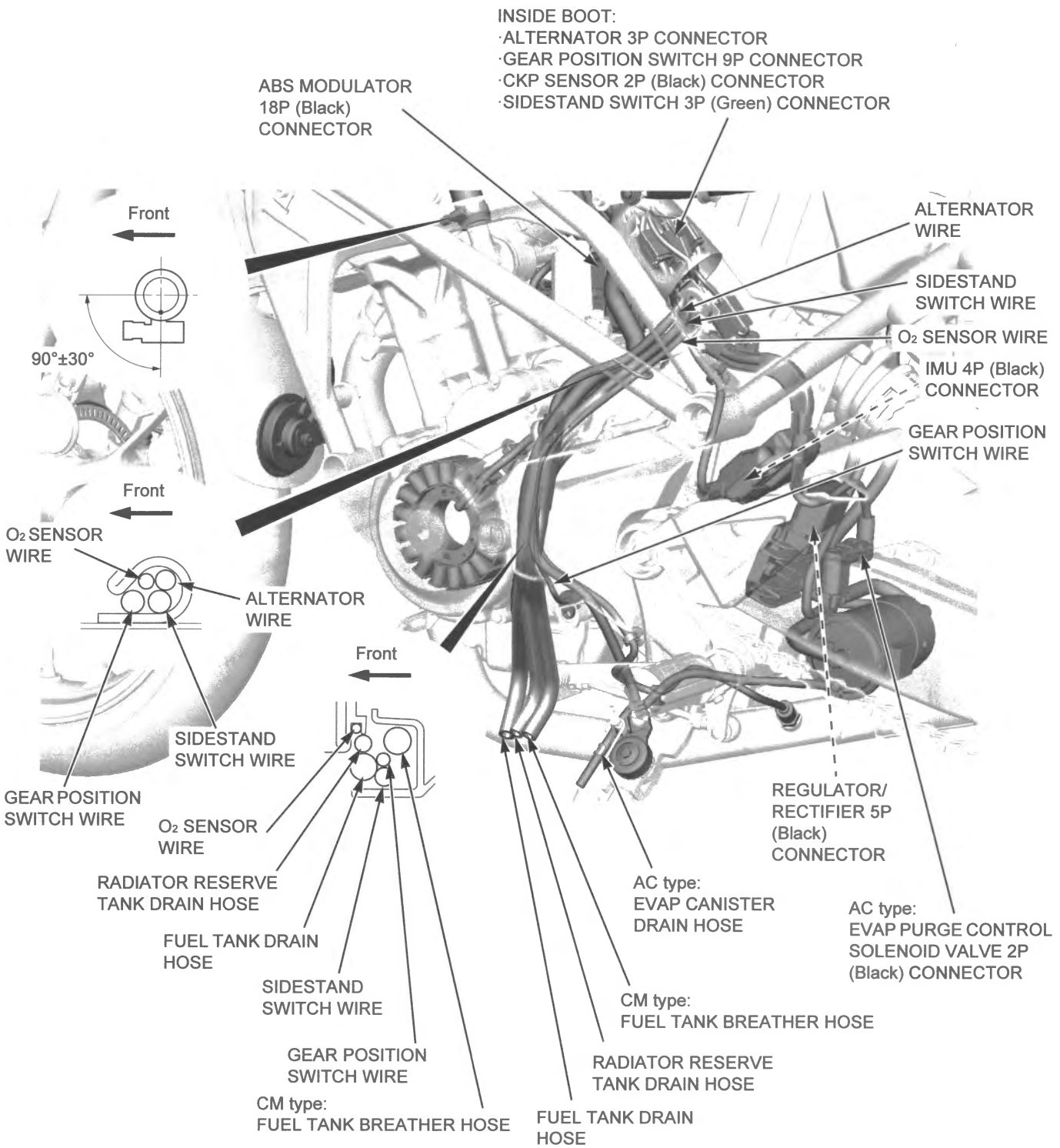
CABLE & HARNESS ROUTING

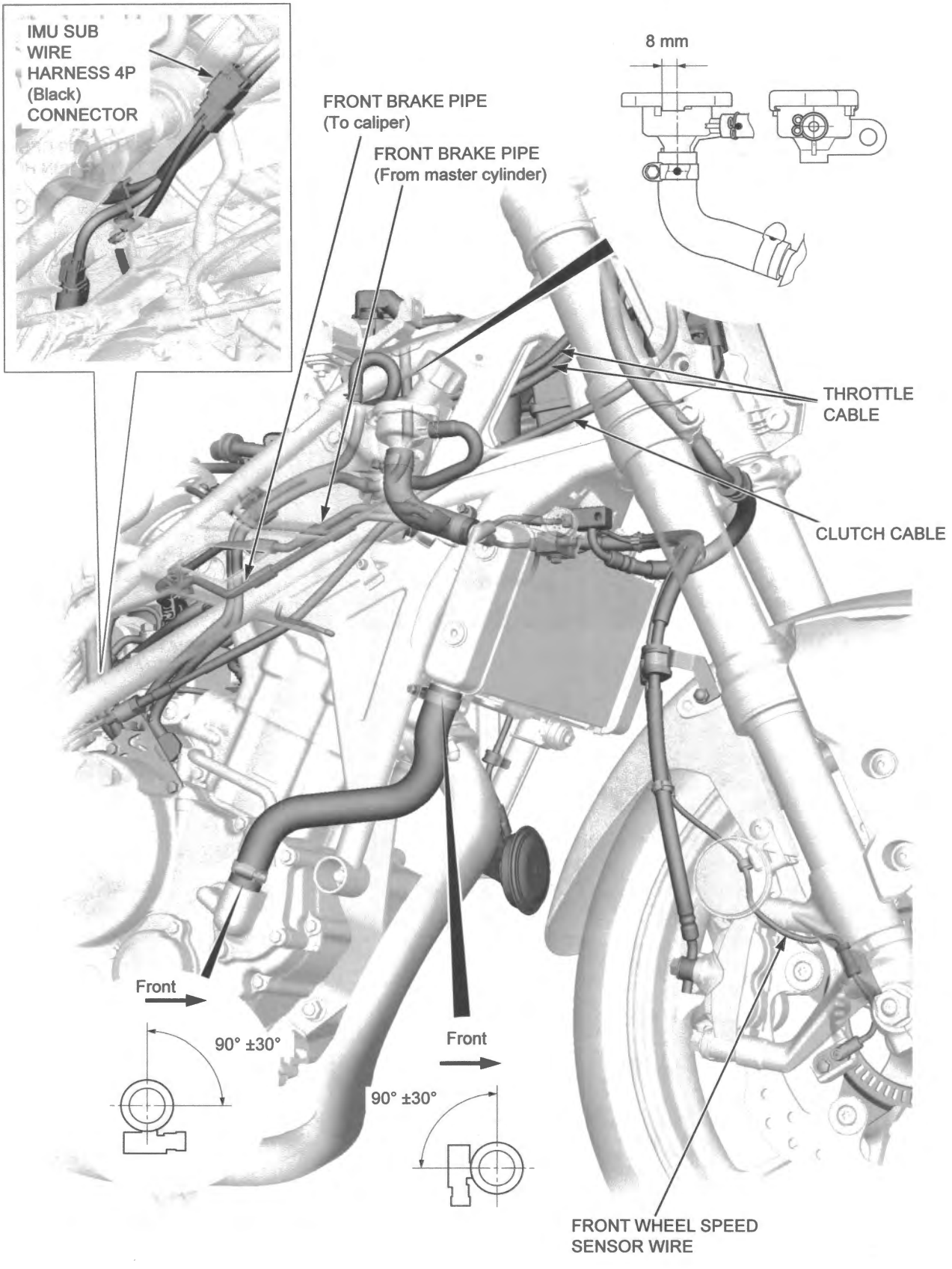


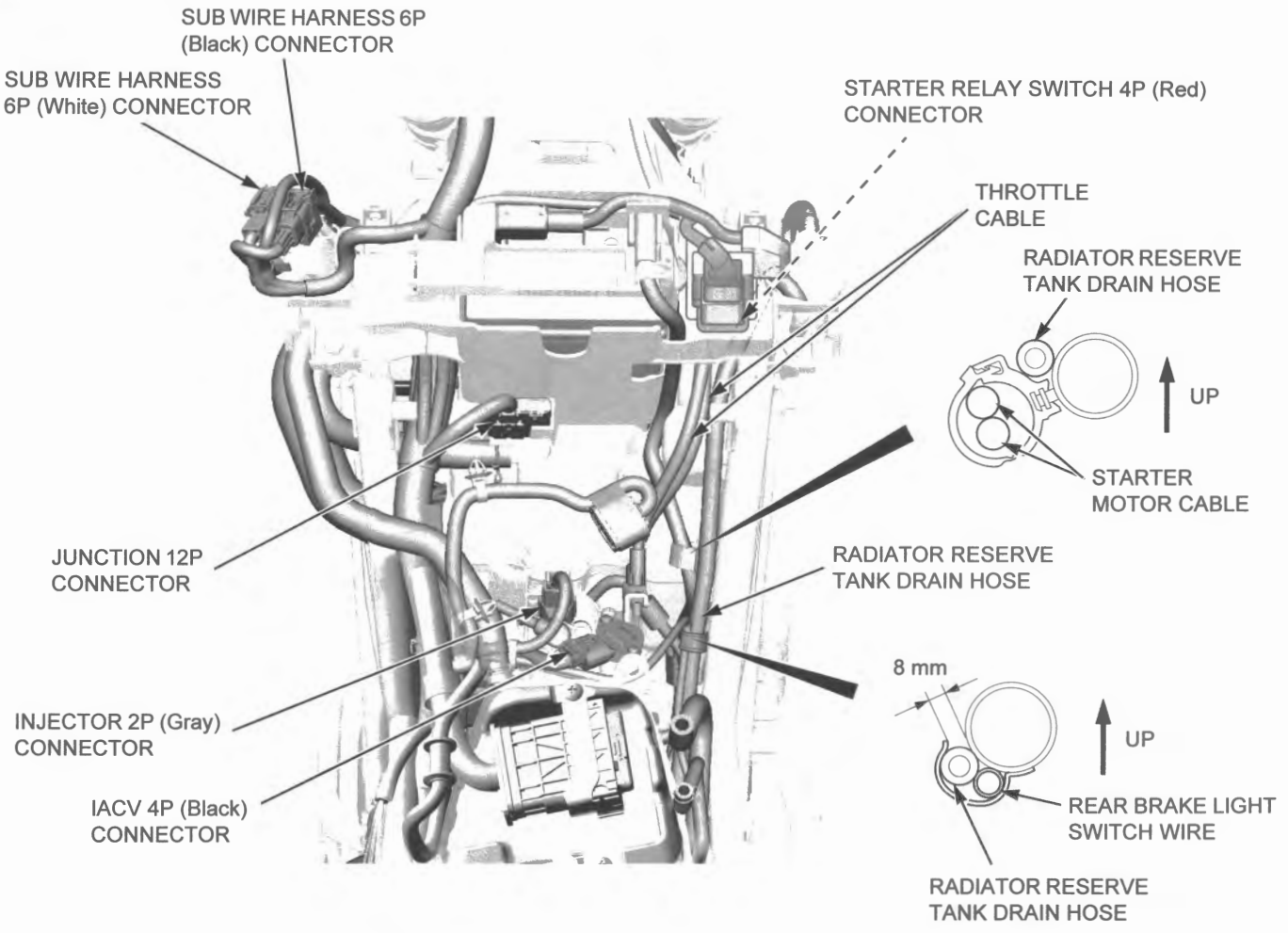

LEFT HANDLEBAR
SWITCH WIRE
HEADLIGHT
WIRE
LED HEADLIGHT 8P
(Black) CONNECTOR
LEFT HANDLEBAR SWITCH
12P (Gray) CONNECTOR
MAIN WIRE
HARNESS

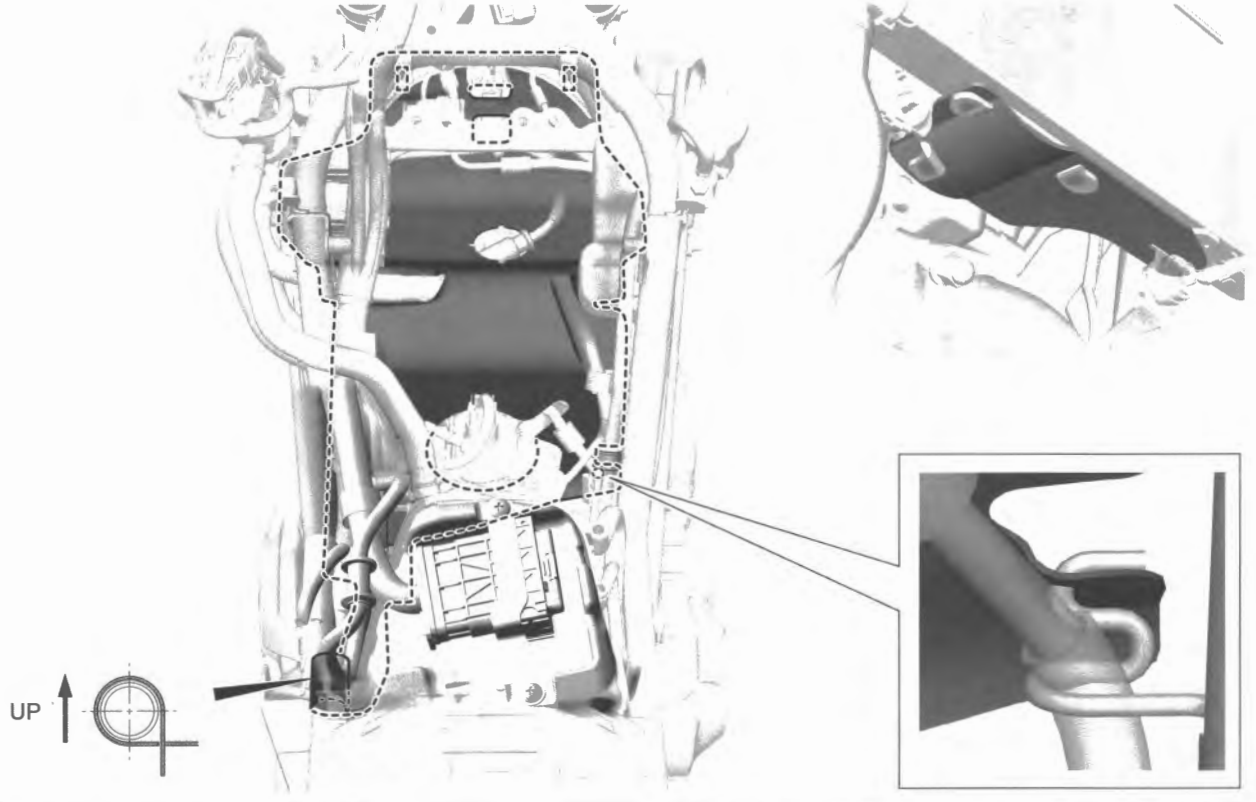

FUEL PUMP
WIRE
FUEL PUMP 5P
CONNECTOR
FUEL FEED
HOSE

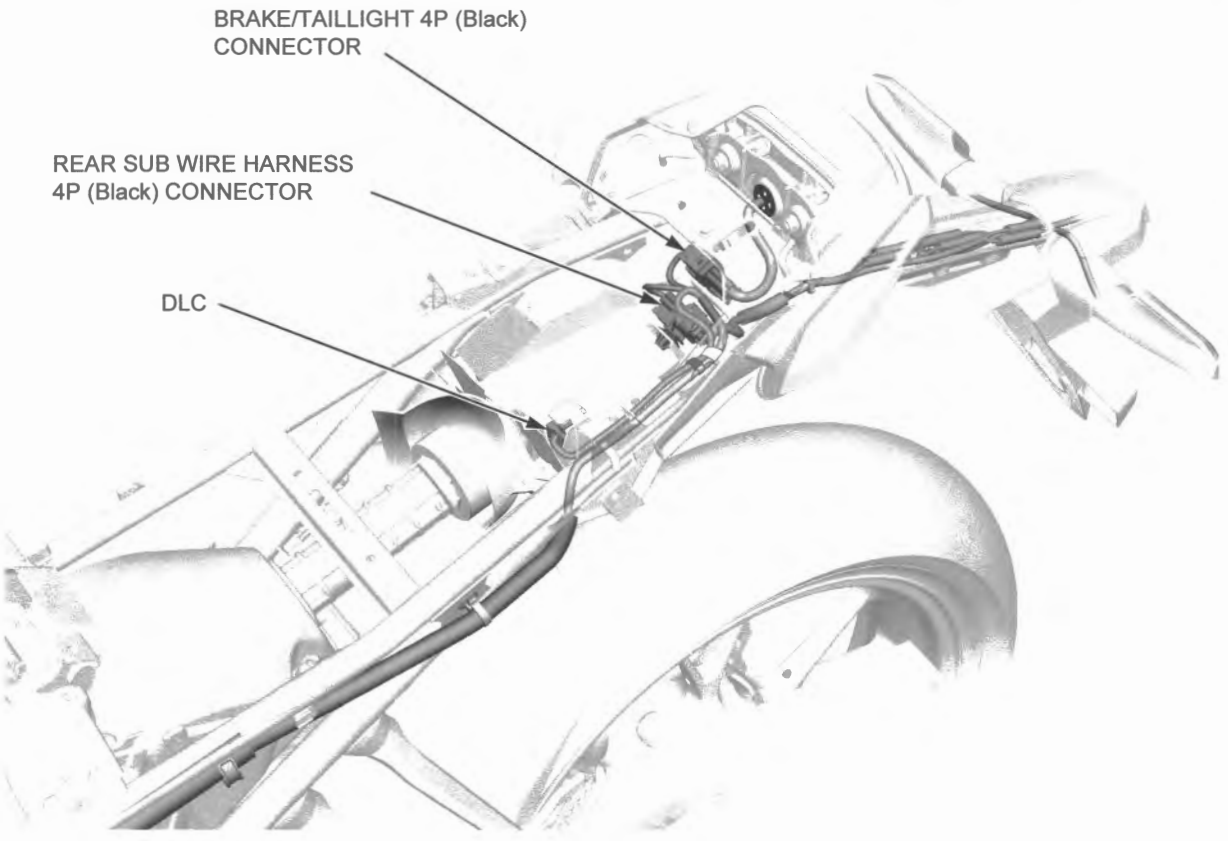

SUB WIRE HARNESS
6P (Black) CONNECTOR
SUB WIRE HARNESS
6P (White) CONNECTOR
PAIR CONTROL SOLENOID
VALVE 2P (Black) CONNECTOR
BANK ANGLE SENSOR
3P (Black) CONNECTOR
FAN CONTROL RELAY
Black/
Blue
Pink/Blue
TURN SIGNAL LIGHT
RELAY 3P (Black)
CONNECTOR
FRONT BRAKE HOSE
(To caliper)
FUSE BOX 2
ECM 36P (Black) CONNECTOR
FUSE BOX 1
GROUND
POINT
Inside
Inside
90°±30°
REAR WHEEL SPEED
SENSOR 2P (Black)
CONNECTOR
ECT SENSOR 2P (Black)
CONNECTOR
FRONT WHEEL SPEED
SENSOR 2P (Black)
CONNECTOR
FRONT BRAKE HOSE
(From master cylinder)
FAN MOTOR 2P
(Black) CONNECTOR
HORN WIRE
CONNECTOR

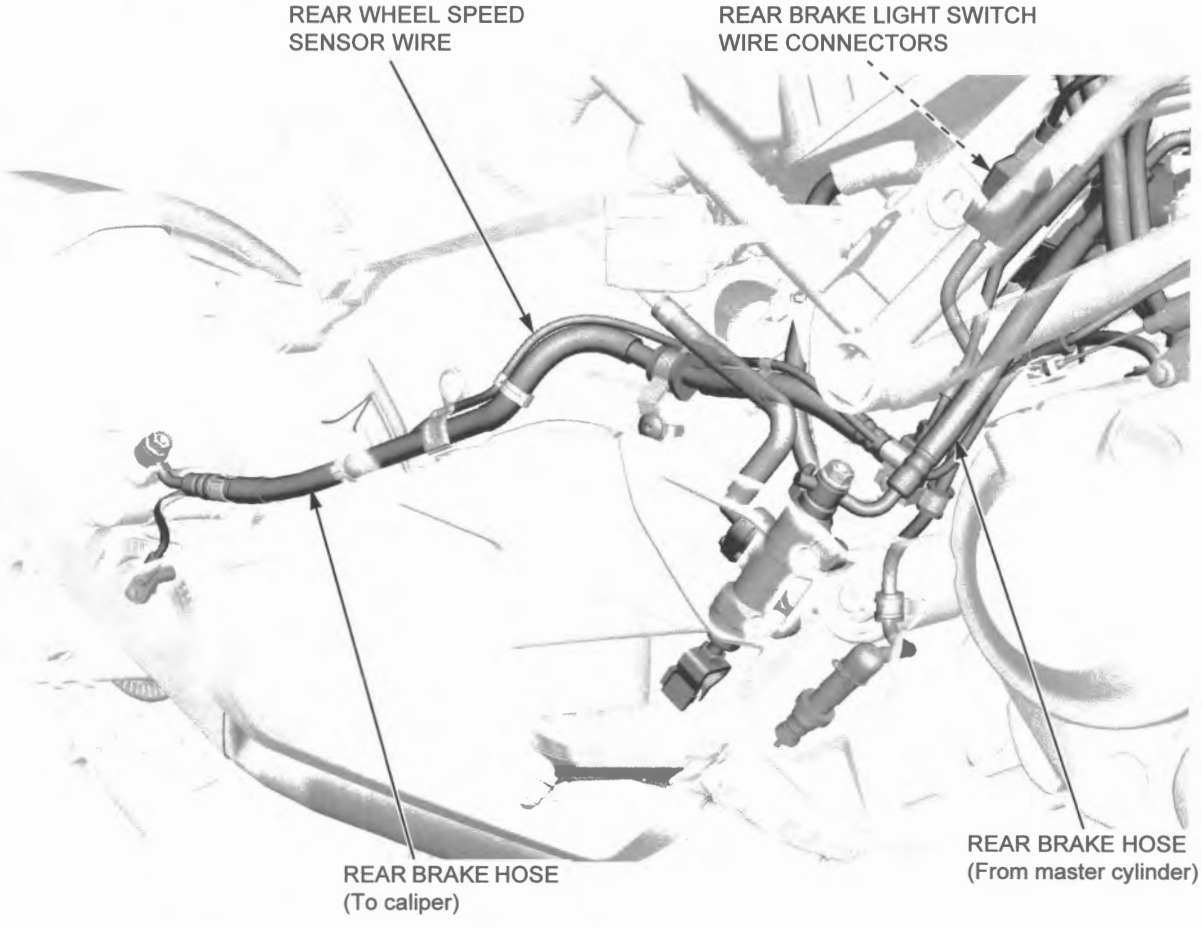

INSIDE BOOT:
·ALTERNATOR 3P CONNECTOR
·GEAR POSITION SWITCH 9P CONNECTOR
·CKP SENSOR 2P (Black) CONNECTOR
·SIDESTAND SWITCH 3P (Green) CONNECTOR
ABS MODULATOR 18P (Black) CONNECTOR
Front
90°±30°
ALTERNATOR WIRE
SIDESTAND SWITCH WIRE
O2 SENSOR WIRE
IMU 4P (Black) CONNECTOR
GEAR POSITION SWITCH WIRE
Front
O2 SENSOR WIRE
ALTERNATOR WIRE
Front
SIDESTAND SWITCH WIRE
GEAR POSITION SWITCH WIRE
O2 SENSOR WIRE
RADIATOR RESERVE TANK DRAIN HOSE
FUEL TANK DRAIN HOSE
SIDESTAND SWITCH WIRE
GEAR POSITION SWITCH WIRE
CM type:
FUEL TANK BREATHER HOSE
FUEL TANK DRAIN HOSE
RADIATOR RESERVE TANK DRAIN HOSE
CM type:
FUEL TANK BREATHER HOSE
AC type:
EVAP CANISTER DRAIN HOSE
REGULATOR/ RECTIFIER 5P (Black) CONNECTOR
AC type:
EVAP PURGE CONTROL SOLENOID VALVE 2P (Black) CONNECTOR


IMU SUB WIRE HARNESS 4P (Black) CONNECTOR
8 mm
FRONT BRAKE PIPE (To caliper)
FRONT BRAKE PIPE (From master cylinder)
THROTTLE CABLE
CLUTCH CABLE
Front
90° ±30°
Front
90° ±30°
FRONT WHEEL SPEED SENSOR WIRE

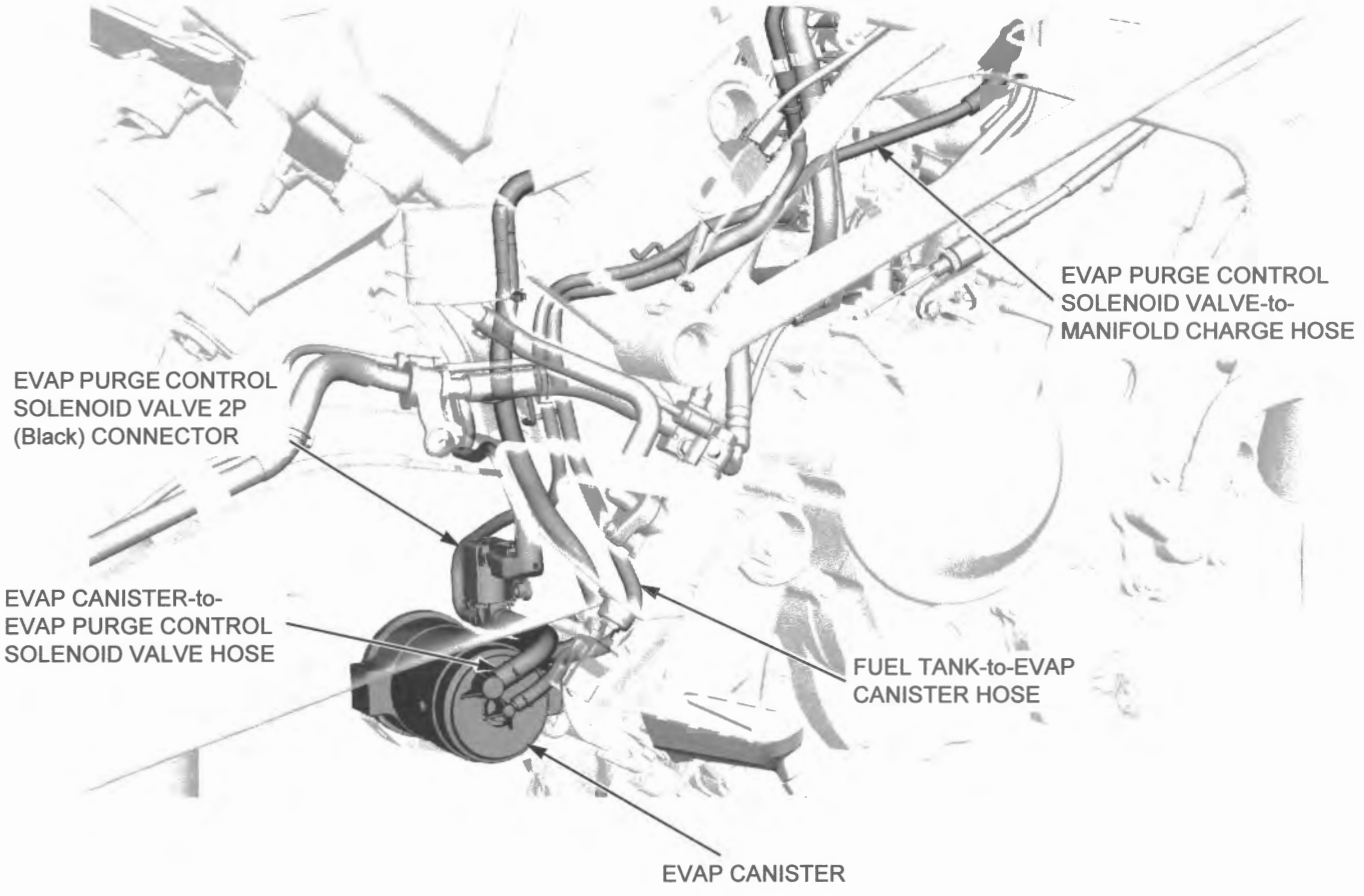

SUB WIRE HARNESS 6P
(Black) CONNECTOR
SUB WIRE HARNESS
6P (White) CONNECTOR
STARTER RELAY SWITCH 4P (Red)
CONNECTOR
THROTTLE
CABLE
RADIATOR RESERVE
TANK DRAIN HOSE
UP
STARTER
MOTOR CABLE
JUNCTION 12P
CONNECTOR
RADIATOR RESERVE
TANK DRAIN HOSE
8 mm
UP
INJECTOR 2P (Gray)
CONNECTOR
IACV 4P (Black)
CONNECTOR
REAR BRAKE LIGHT
SWITCH WIRE
RADIATOR RESERVE
TANK DRAIN HOSE


UP


BRAKE/TAILLIGHT 4P (Black)
CONNECTOR
REAR SUB WIRE HARNESS
4P (Black) CONNECTOR
DLC


REAR WHEEL SPEED
SENSOR WIRE
REAR BRAKE LIGHT SWITCH
WIRE CONNECTORS
REAR BRAKE HOSE
(To caliper)
REAR BRAKE HOSE
(From master cylinder)

AC type:


EVAP PURGE CONTROL SOLENOID VALVE-to-MANIFOLD CHARGE HOSE
EVAP PURGE CONTROL SOLENOID VALVE 2P (Black) CONNECTOR
EVAP CANISTER-to-EVAP PURGE CONTROL SOLENOID VALVE HOSE
FUEL TANK-to-EVAP CANISTER HOSE
EVAP CANISTER

EMISSION CONTROL SYSTEMS

EXHAUST EMISSION REQUIREMENT

The U.S. Environmental Protection Agency (EPA), California Air Resources Board (CARB) and Environment and Climate Change Canada (ECCC) require manufacturers to certify that their motorcycles comply with applicable exhaust emissions standards during their useful life, when operated and maintained according to the instructions provided.

NOISE EMISSION REQUIREMENT

The EPA also requires that vehicles built after January 1, 1983 comply with applicable noise emission standards for one year or 3,730 miles (6,000 km) after the time of sale to the ultimate purchaser, when operated and maintained according to the instructions provided.

WARRANTY COMPLIANCE

Compliance with the terms of the Distributor's Limited Warranty for Honda Motorcycle Emission Control Systems is necessary in order to keep the emissions system warranty in effect.

SOURCE OF EMISSIONS

The combustion process produces carbon monoxide (CO), oxides of nitrogen (NOx) and hydrocarbons (HC).

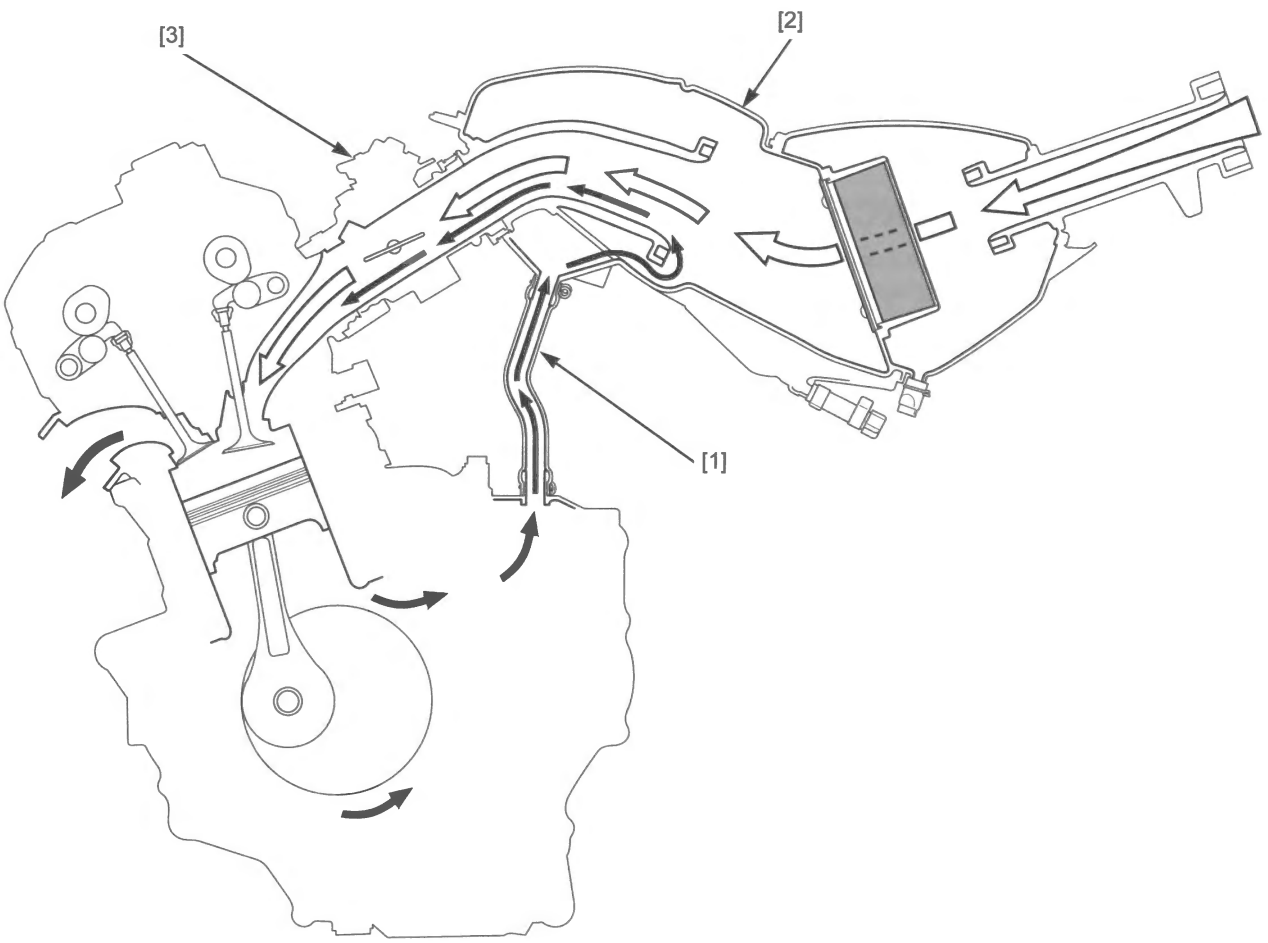
The control of hydrocarbons and oxides of nitrogen is very important because, under certain conditions, they react to form photochemical smog when subject to sunlight. Carbon monoxide does not react in the same way, but it is toxic. Uncontrolled fuel evaporation also releases hydrocarbons to the atmosphere.

Honda Motor Co., Ltd. utilizes various system to reduce carbon monoxide, oxides of nitrogen and hydrocarbons.

CRANKCASE EMISSION CONTROL SYSTEM

The engine is equipped with a closed crankcase system to prevent discharging crankcase emissions into the atmosphere.

Blow-by gas is returned to the combustion chamber through the crankcase breather hose [1] air cleaner housing [2] and throttle body [3].



EXHAUST EMISSION CONTROL SYSTEM

The exhaust emission control system is composed of a pulse secondary air supply system, 3-way catalytic converter and PGM-FI system.

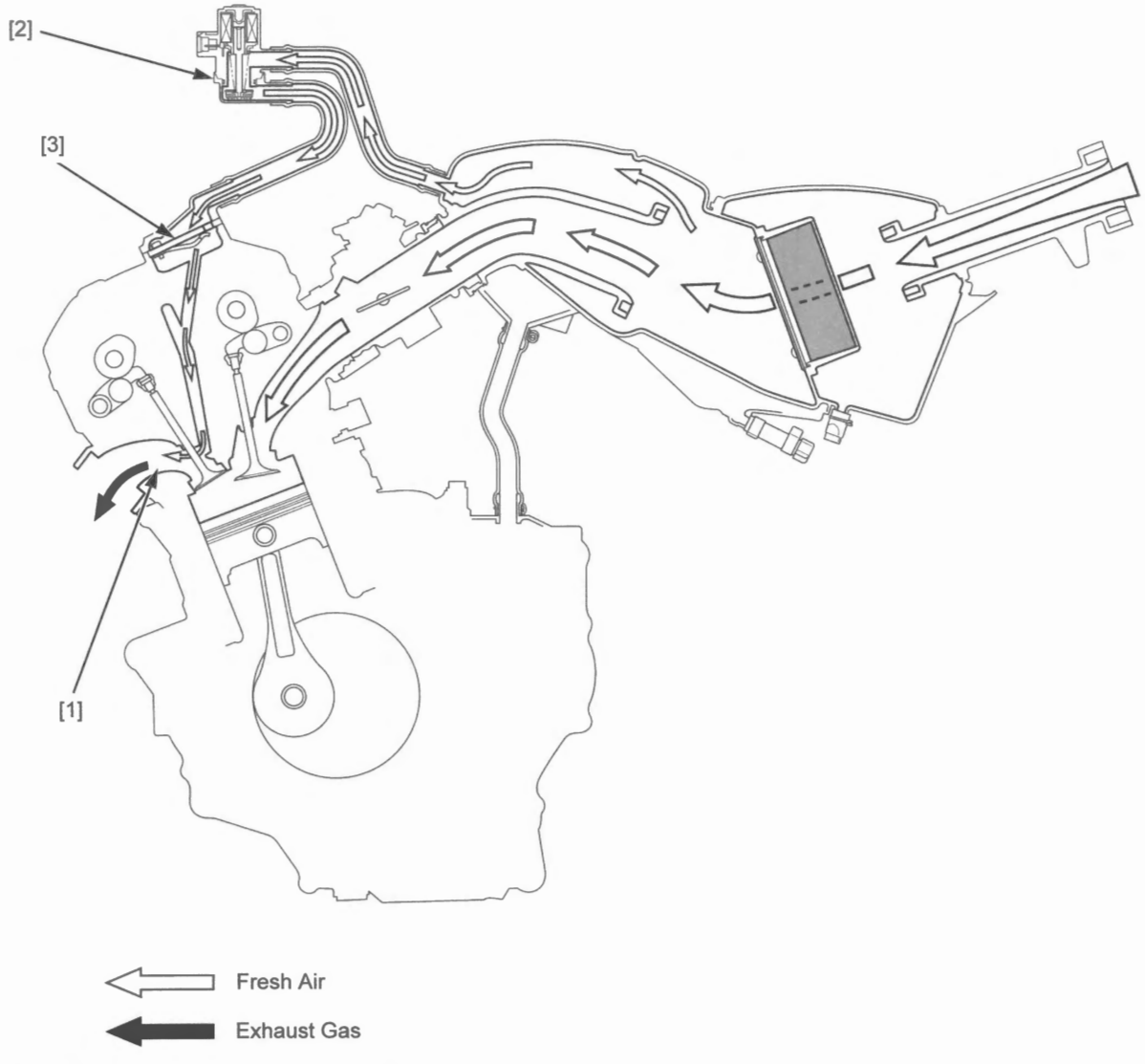
SECONDARY AIR SUPPLY SYSTEM

The pulse secondary air supply system introduces filtered air into the exhaust gases in the exhaust port [1]. Fresh air is drawn into the exhaust port by the function of the PAIR control solenoid valve [2].

This charge of fresh air promotes burning of the unburned exhaust gases and changes a considerable amount of hydrocarbons and carbon monoxide into relatively harmless carbon dioxide and water vapor.

The PAIR check valve [3] prevents reverse air flow through the system. The PAIR control solenoid valve is controlled by the PGM-FI unit, and the fresh air passage is opened/closed according to running condition (ECT/IAT/TP/MAP sensor and engine revolution).

No adjustments to the secondary air supply system should be made, although periodic inspection of the components is recommended.



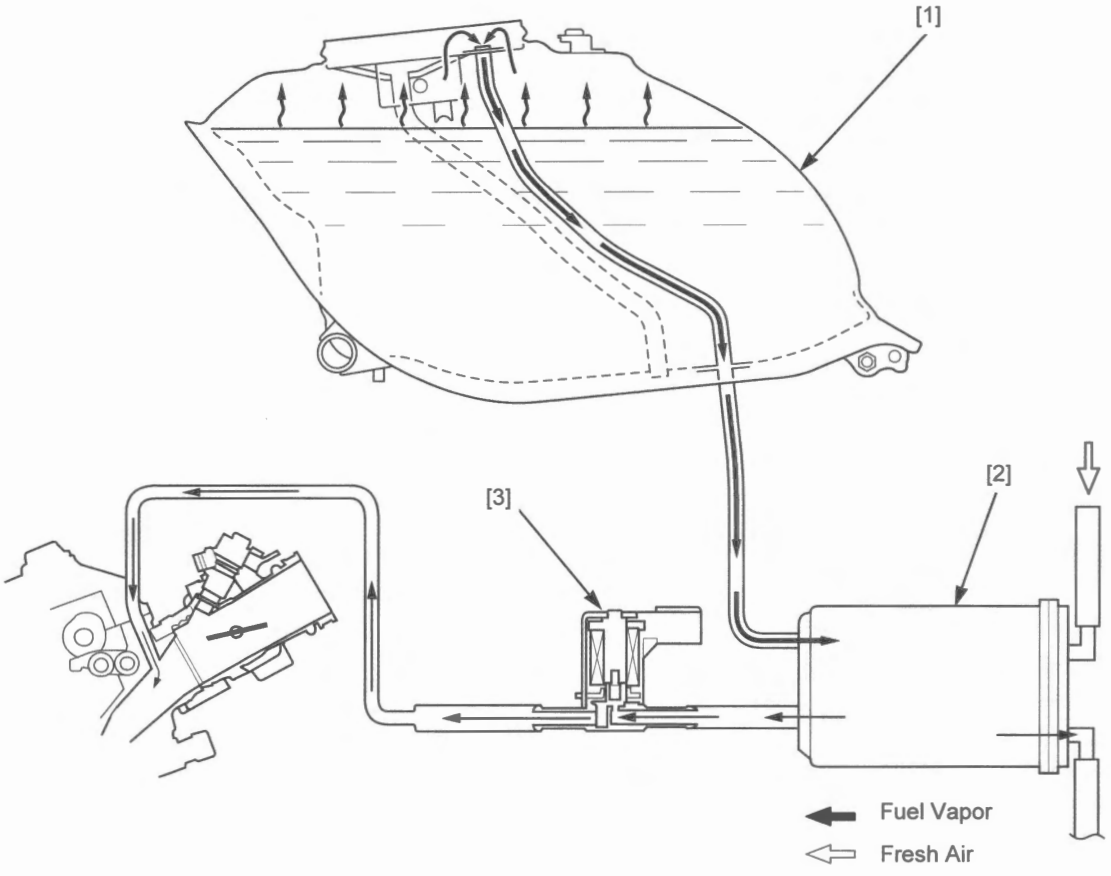
THREE-WAY CATALYTIC CONVERTER

This vehicle is equipped with a three-way catalytic converter. The three-way catalytic converter is in the exhaust system. Through chemical reactions, it convert HC, CO and NO_x in the engine's exhaust to carbon dioxide (CO_2), dinitrogen (N_2), and water vapor.

No adjustment to these systems should be made although periodic inspection of the components is recommended.

EVAPORATIVE EMISSION CONTROL SYSTEM (AC type)

Fuel vapor from the fuel tank [1] is routed into the EVAP canister [2] where is it absorbed and stored while the engine is stopped. When the engine is running and the EVAP purge control solenoid valve [3] is open, fuel vapor in the EVAP canister is drawn into the engine.



FUEL PERMEATION EMISSION CONTROL SYSTEM

This motorcycle complies with the Fuel Permeation Emission Control regulations of the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and Environment and Climate Change Canada (ECCC). The fuel tank, fuel hoses, and fuel vapor charge hoses used on this motorcycle incorporate fuel permeation control technologies. Tampering with the fuel tank, fuel hoses, or fuel vapor charge hoses to reduce or defeat the effectiveness of the fuel permeation technologies is prohibited by federal regulations.

NOISE EMISSION CONTROL SYSTEM

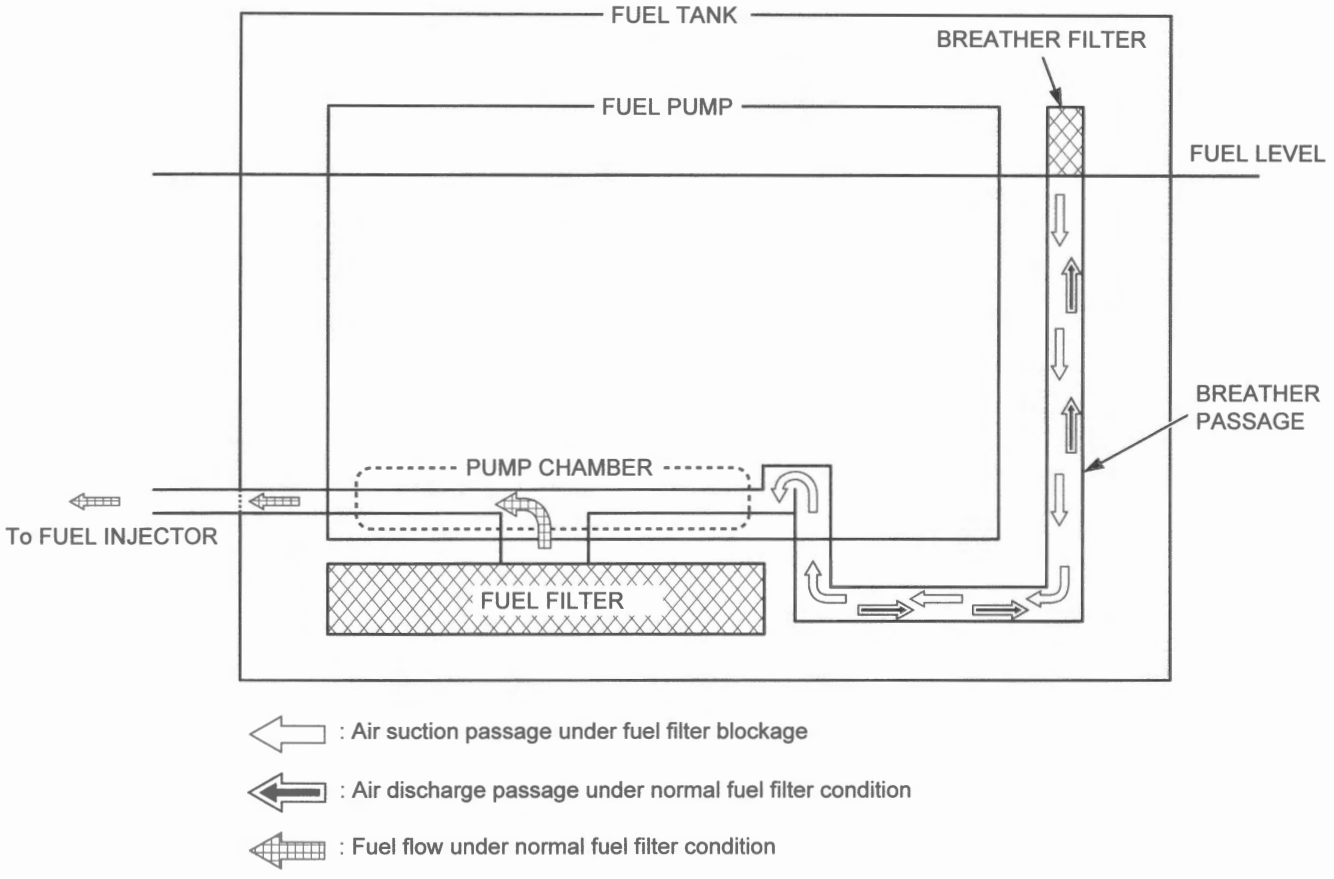
TAMPERING WITH THE NOISE CONTROL SYSTEM IS PROHIBITED: U.S. Federal law prohibits law may prohibit the following acts or the causing there of: (1) The removal or rendering inoperative by any person, other than for purposes of maintenance, repair or replacement, of any device or element of design incorporated into any vehicle for the purpose of noise control prior to its sale or delivery to the ultimate customer or while it is in use; (2) the use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

AMONG THOSE ACTS PRESUMED TO CONSTITUTE TAMPERING ARE THE ACTS LISTED BELOW:

1. Removal of, or puncturing of the muffler, baffles, header pipes or any other component which conducts exhaust gases.
2. Removal of, or puncturing of any part of the intake system.
3. Lack of proper maintenance.
4. Replacing any moving parts of the vehicle, or parts of the exhaust or intake system, with parts other than those specified by the manufacturer.

TECHNICAL FEATURES

FUEL PUMP SYSTEM WITH A FUEL FILTER BLOCKAGE REMINDER FUNCTION



The fuel pump system of this model consists of the following components:

- Fuel pump chamber
- Fuel filter
- Breather passage
- Breather filter

Under normal conditions, the fuel pump chamber sucks fuel through the fuel filter and supplies it to the injector.

When the fuel filter is clogged, the fuel is sucked into the pump chamber through the breather passage in order to keep the vehicle running. The breather filter is located in the upper inner side of fuel tank. When the fuel is consumed to the point where the breather filter is exposed above the fuel level, a certain amount of air will be drawn into the pump chamber via the breather filter and breather passage. This incoming air results in a lack of fuel, which impairs engine performance in order to notify the rider of the fuel filter blockage. This symptom works as a reminder for the filter replacement.

This system eliminates the need of fuel filter replacement according to a fixed interval, as the rider will experience the symptom and notice the filter blockage during vehicle usage.

The driveability remains normal as long as the fuel level in tank is maintained above the breather filter because no air will be drawn into the pump chamber, even when the fuel filter is clogged.

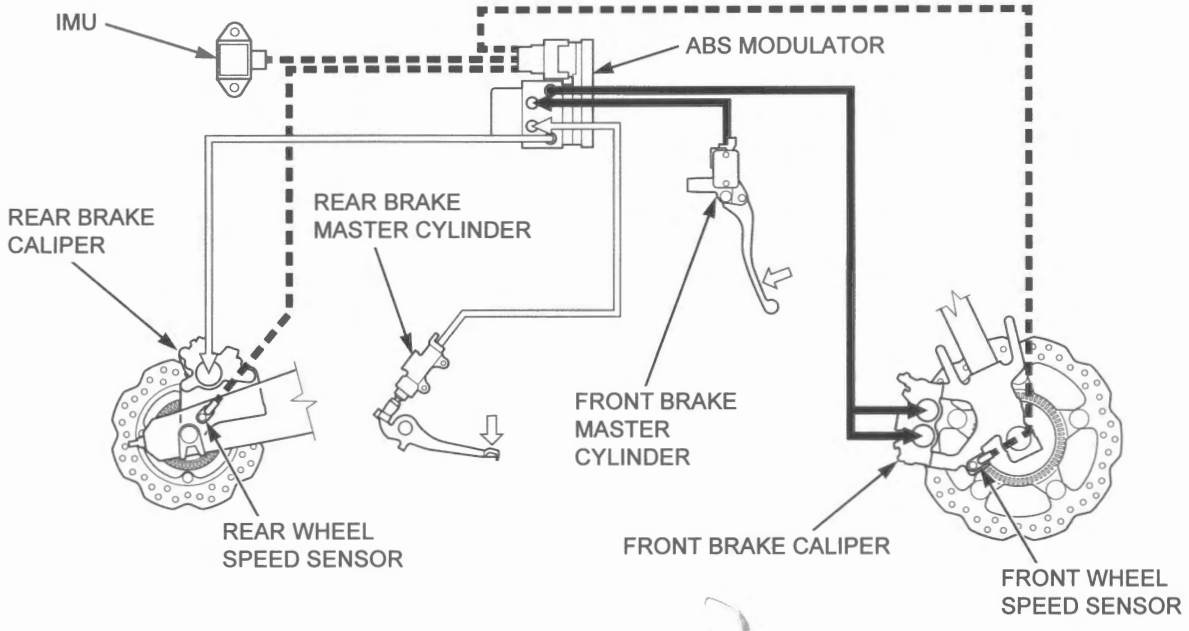
If the fuel in tank is sufficient but such symptom as poor engine performance, lack of fuel, or engine start failure exist, perform the fuel supply test. ➔2-3

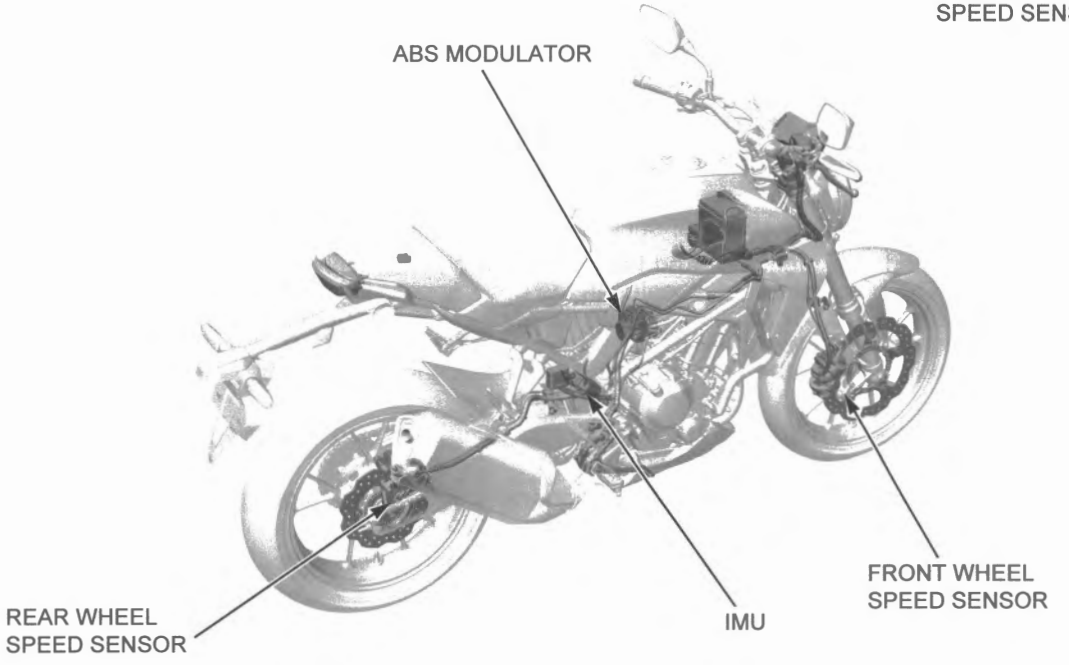
ABS (ANTI-LOCK BRAKE SYSTEM) WITH IMU (INERTIAL MEASUREMENT UNIT)

SUMMARY

This model is equipped with ABS (Anti-lock brake system).
The system calculates estimated speed from the front wheel speed sensor and rear wheel speed sensor.
When the system detects that the front wheel or rear wheel is about to lock when the estimated speed is high, the ABS modulator prevents the front or rear wheel from locking up by controlling the front brake or rear wheel caliper fluid pressure.

This vehicle is also equipped with the IMU (Inertial Measurement Unit) to prevent rear wheel lifting during hard braking.
The IMU detects the vertical and horizontal acceleration and computes the inertia affecting on the center of gravity of the vehicle.
When the vehicle experiences a nose dive caused by abrupt brake application, it prevents the rear wheel from lifting by slightly reducing the brake fluid pressure in the ABS modulator.





MAINTENANCE SCHEDULE

- Perform the Pre-ride inspection in the Owner's Manual at each scheduled maintenance period.
- I: Inspect and Clean, Adjust, Lubricate or Replace if necessary. C: Clean. R: Replace. A: Adjust. L: Lubricate.
- The following items require some mechanical knowledge. Certain items (particularly those marked * and **) may require more technical information and tools. Consult a dealer.

Basic

- Refer to the "Basic" Service Manual for each maintenance instruction except the instructions described in this manual.

		ITEMS	NOTE	FREQUENCY (NOTE 1)								REGULAR REPLACE	REFER TO PAGE
				X1,000 mi	0.6	4	8	12	16	20	24		
				X1,000 km	1.0	6.4	12.8	19.2	25.6	32.0	38.4		
EMISSION RELATED ITEMS	*	FUEL LINE					I		I		I		→2-2
	*	THROTTLE OPERATION					I		I		I		
		AIR CLEANER	NOTE2					R			R		→2-7
		CRANKCASE BREATHER	NOTE3			C	C	C	C	C	C		
		SPARK PLUG		EVERY 16000 mi (25600 km) I, EVERY 32000 mi (51200 km) R									→4-29
	*	VALVE CLEARANCE							I				→2-22
		ENGINE OIL			R		R		R		R	1 year	→2-15
		ENGINE OIL FILTER			R				R				→2-15
	*	ENGINE IDLE SPEED					I		I		I		
		RADIATOR COOLANT	NOTE5				I		I		I	3 years	→2-17
	*	COOLING SYSTEM					I		I		I		
	*	SECONDARY AIR SUPPLY SYSTEM							I				
	*	EVAPORATIVE EMISSION CONTROL SYSTEM (AC type)	NOTE4						I				
NON-EMISSION RELATED ITEMS		DRIVE CHAIN		Every 600 mi (1000 km) I, L									
		BRAKE FLUID	NOTE5			I	I	I	I	I	I	2 years	
		BRAKE PADS WEAR				I	I	I	I	I	I		
		BRAKE SYSTEM					I		I		I		
		BRAKE LIGHT SWITCH					I		I		I		
		HEADLIGHT AIM					I		I		I		→4-59
		CLUTCH SYSTEM				I	I	I	I	I	I		
		SIDESTAND					I		I		I		
	*	SUSPENSION					I		I		I		
	*	NUTS, BOLTS, FASTENERS					I		I		I		
	**	WHEELS/TIRES					I		I		I		
	**	STEERING HEAD BEARINGS					I		I		I		

- * Should be serviced by a dealer, unless the owner has proper tools, service data, and is mechanically qualified.
- ** In the interest of safety, we recommend these items be serviced only by a dealer.

NOTES:

1. At higher odometer readings, repeat at the frequency interval established here.
2. Service more frequently when riding in unusually wet or dusty areas.
3. Service more frequently when riding in rain or at full throttle.
4. 50 STATE (meets California)
5. Replacement requires mechanical skill.

MEMO

2. FUEL & ENGINE

FUEL LINE 2-2

FUEL PUMP UNIT 2-4

FUEL TANK 2-6

AIR CLEANER 2-7

THROTTLE BODY 2-8

SECONDARY AIR SUPPLY SYSTEM ... 2-12

LUBRICATION SYSTEM 2-14

COOLING SYSTEM 2-17

CYLINDER HEAD 2-22

CYLINDER/PISTON 2-29

CLUTCH/GEARSHIFT LINKAGE 2-30

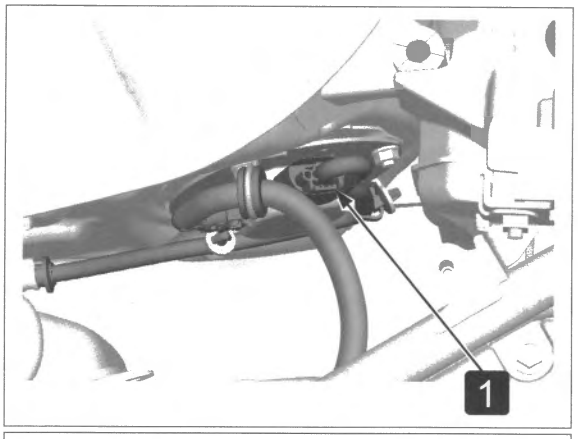
ALTERNATOR/STARTER CLUTCH 2-33

CRANKCASE/CRANKSHAFT/
BALANCER 2-35

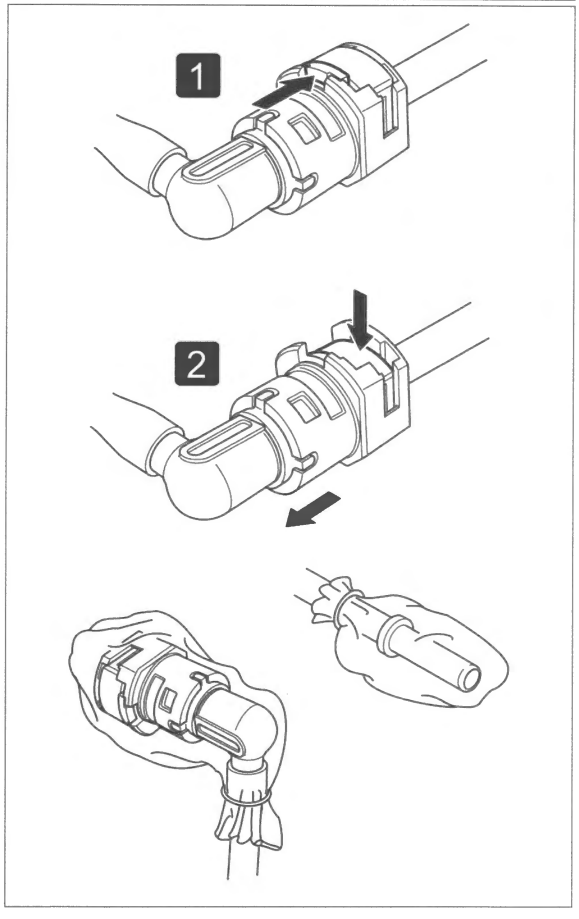
TRANSMISSION 2-40

ENGINE UNIT 2-41

FUEL LINE



- This vehicle's fuel hose components uses resin. Do not bend or twist the fuel hose.
- Fuel tank lifting ➔4-55
- 1 Fuel pump 5P connector
- Let the engine idle until it stops.
- Battery negative (–) cable ➔4-55

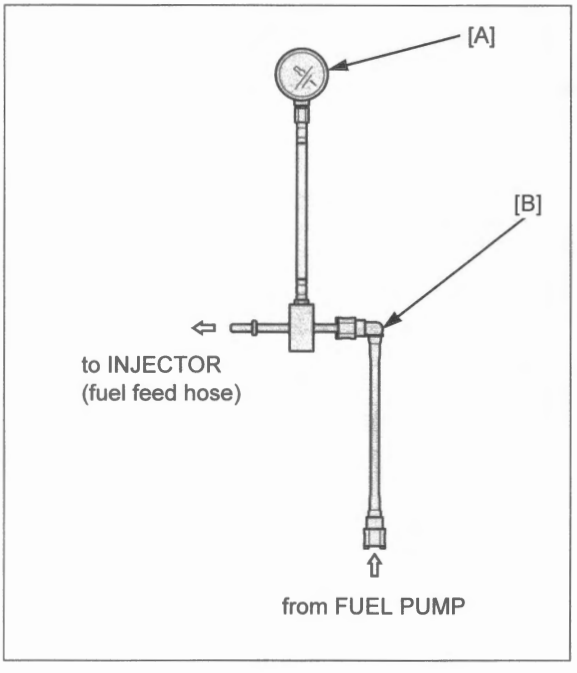


- Do not use tools for removal. If the connector does not move, alternately pull and push the connector until it comes off easily.
- Check the fuel quick connect fitting for dirt, and clean if necessary.
- Place a shop towel over the quick connect fitting.
- 1 Push the retainer tab forward.
- 2 Press down the retainer and disconnect the connector from the fuel joint.
- Check the retainer condition and replace the fuel hose if necessary.
- To prevent damage and keep foreign matter out, cover the disconnected connector and pipe end with a plastic bag.
- Press the connector onto the fuel joint until the retainer locks with a “CLICK”. If it is hard to connect, put a small amount of engine oil on the pipe end.
- Make sure the connection is secure; check visually and by pulling the connector.
- After installing the removed parts, turn the ignition switch ON. (Do not start the engine.)
  The fuel pump will run for about 2 seconds, and the fuel pressure will rise. Repeat 2 or 3 times, and check that there is no leak in the fuel supply system.

FUEL SUPPLY TEST

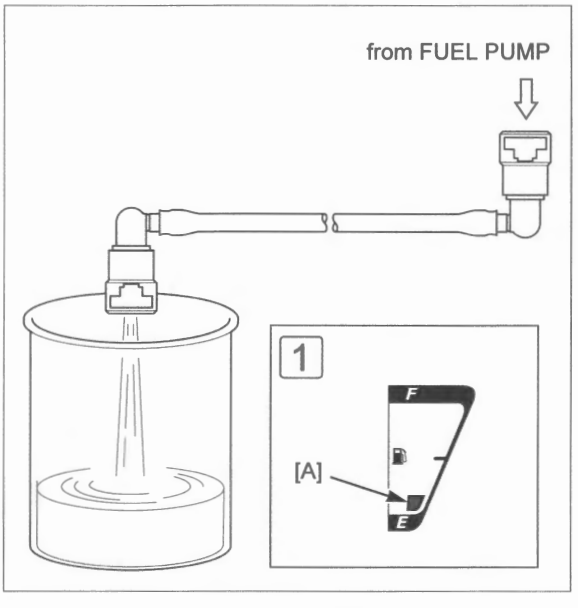
- If the fuel in tank is sufficient but such symptom as poor engine performance, lack of fuel, or engine start failure exist, perform the following.
- Perform the fuel pressure test. ➔2-3
- If the fuel pressure is within specification, perform the fuel flow inspection. ➔2-3
- Perform the fuel flow inspection in the specified fuel quantity. ➔2-3

FUEL PRESSURE TEST



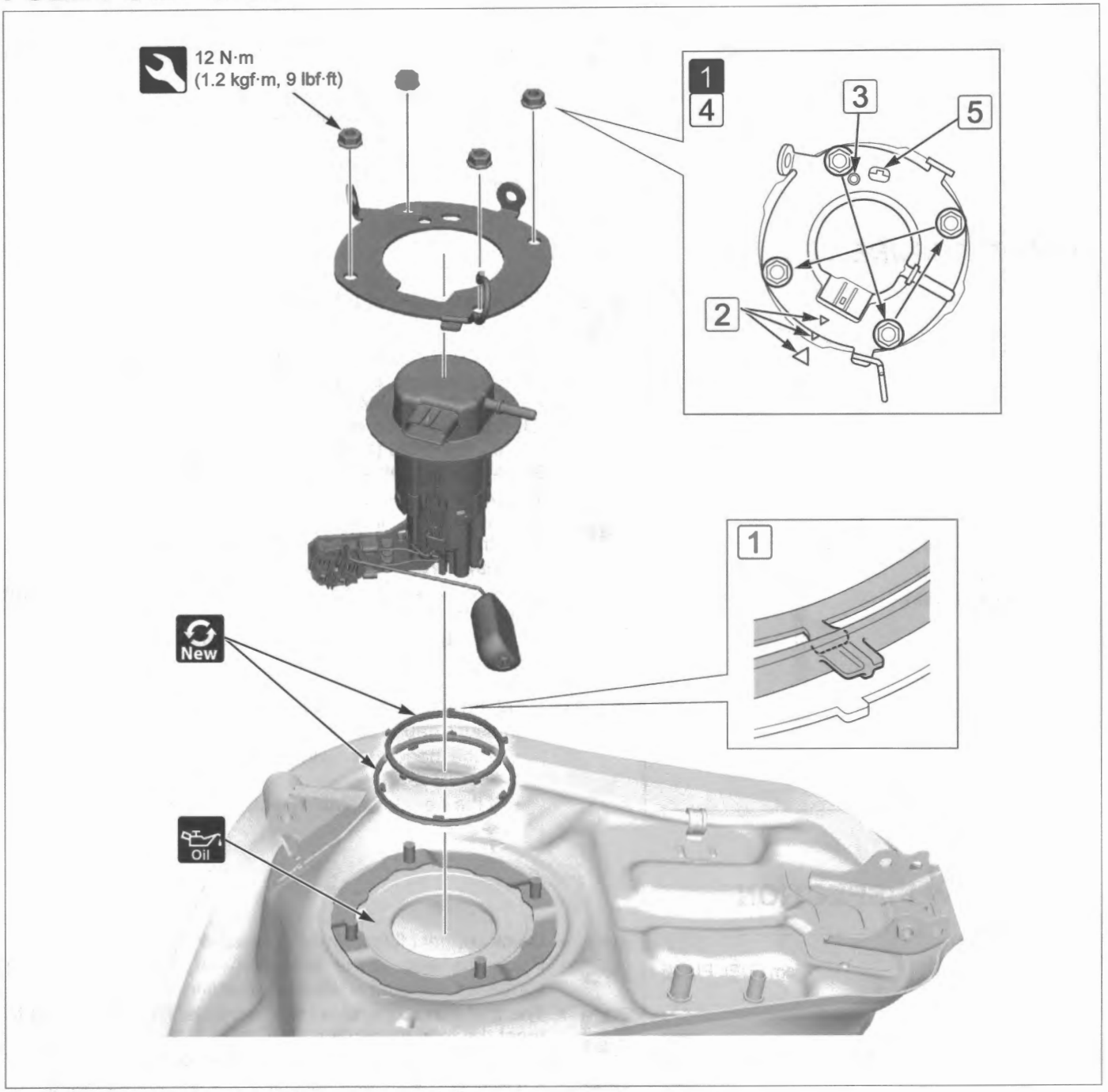
- Quick connect fitting (fuel pump side) ➔2-2
- Attach the fuel pressure gauge and attachment.
  [A] Fuel pressure gauge set: 07406-0040004 (U.S.A. : 07406-004000C)
  [B] Fuel pressure gauge attachment set: 070MJ-K260100 (U.S.A. : 07AMJ-K26A100 + 07AAJ-S6MA200 + 07AMJ-HW3A100)
- Temporarily connect the negative cable to the battery and fuel pump 5P connector.
  Start the engine and let it idle, and read the fuel pressure.
  Standard: 267 – 326 kPa
- If the fuel pressure is higher than specified, replace the fuel pump unit. ➔2-4
- If the fuel pressure is lower than specified, inspect the following.
  – Fuel line leaking
  – Any erratic swing or vibration of the gauge needle in the pressure gauge reading.
    - If the needle is swing or vibration, replace the fuel filter. ➔2-5
    - If the needle is stable, replace the fuel pump unit. ➔2-4

FUEL FLOW INSPECTION



- Quick connect fitting (injector side) ➔2-2
- Place the end of the hose into an approved gasoline container. Wipe off spilled out gasoline.
- The fuel pump operates for 2 seconds. Repeat 5 times to meet the total measuring time.
  Standard: 103 cm³ minimum/10 seconds
- If fuel flow is less than specified, inspect the following:
  – Clogged fuel hose
  – Fuel pump unit
- [1] Place the vehicle on the level ground with its sidestand. Adjust the fuel in the tank so that the fuel gauge segment is positioned the specified range [A], and inspect the fuel flow.
  – If the fuel flow is above specification, check for other malfunctioning parts.
  – If the fuel flow is under specification, replace the fuel filter. ➔2-5

FUEL PUMP UNIT

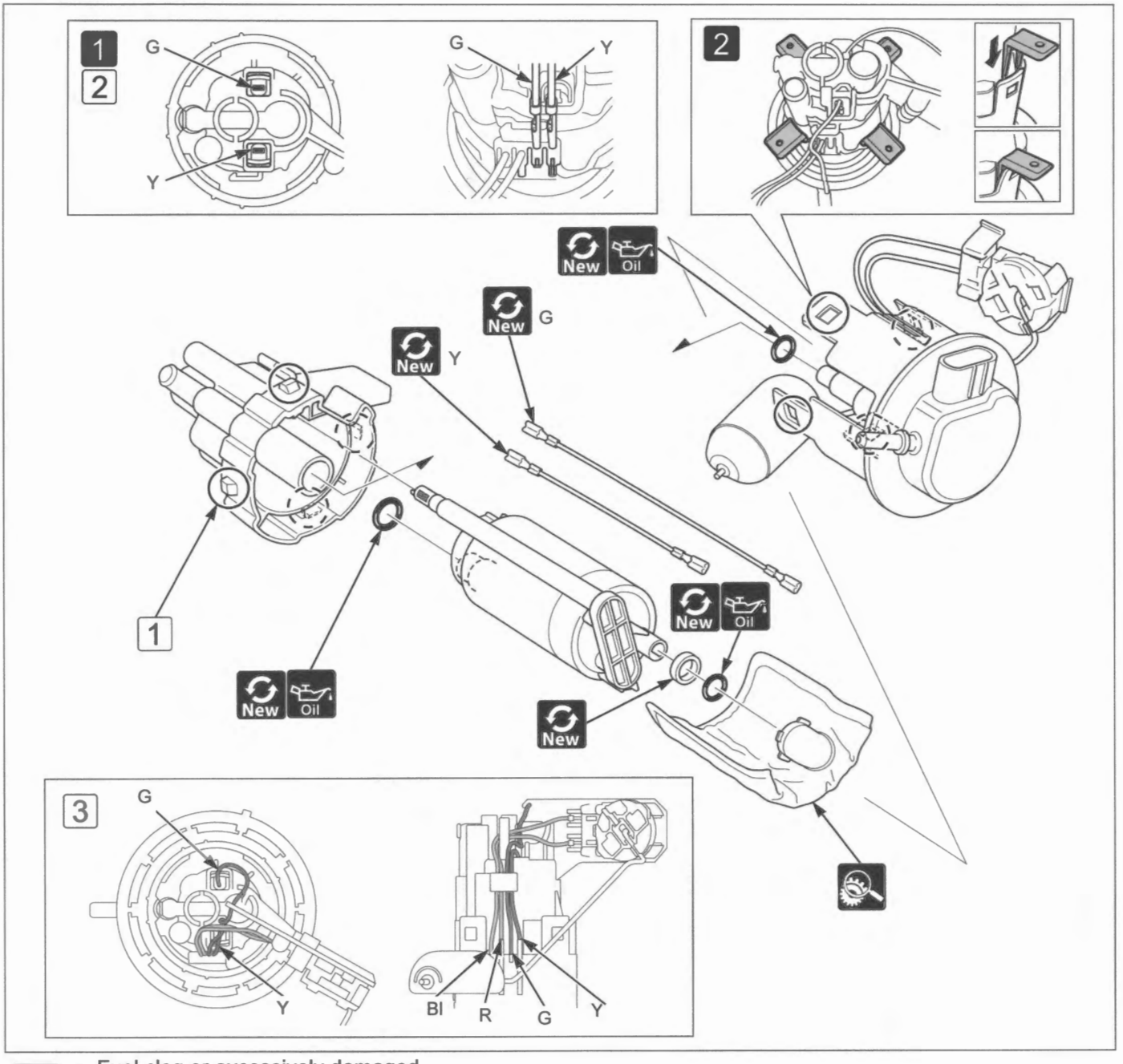


- Quick connect fitting (fuel pump side) ➔2-2
- Fuel tank ➔2-6
- 1 Loosen the nuts in a crisscross pattern in several steps.
- Carefully remove the fuel pump unit from the fuel tank to prevent damaging the fuel level sensor.

- 1 Install a new outer packing onto the fuel pump unit groove by aligning its tab with the boss.
- 2 Install the fuel pump into the fuel tank by aligning the triangle marks of the setting plate and the fuel tank.
- 3 Set the setting plate onto the fuel pump by aligning its hole with the boss.
- 4 Tighten the fuel pump setting plate nuts in the specified sequence as shown.
- 5 Make sure that the outer packing tab can be seen in the setting plate hole.

- Fuel pump malfunction and inspection

FUEL FILTER



- Fuel clog or excessively damaged
- If the fuel filter is clogged, replace it with a new one.

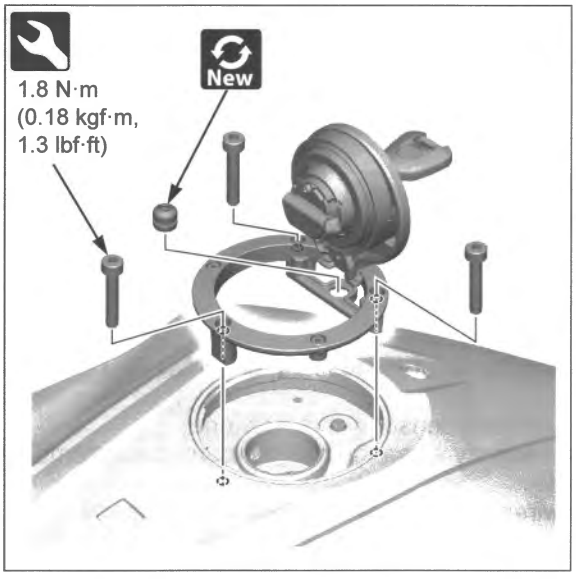
- To prevent dirt and debris from entering the fuel pump unit, always clean it before disassembly.
- Clean the fuel pump unit and fuel pump filter with clean gasoline. Never use commercially available carburetor cleaners.
- 1 Fuel pump motor wires (Y and G wire)
- 2 Release the hooks from the stoppers by slightly spreading the hooks.

Remover, fuel pump case: 070MF-KVS0300

- Before installing the fuel pump filter, check the fuel pump unit for dirt. If necessary, clean the fuel pump unit with compressed air. Do not blow into the fuel pump unit.
- If the R or Bl wire connector is disconnected, replace the fuel level sensor with a new one.
- [1] Make sure you hear a "CLICK" and install the four tabs securely when the fuel pump unit is assembled.
- [2] Connect the fuel pump motor wires to the specified angle.
- [3] Route the fuel pump motor wires and fuel level sensor wires to the guide and terminals properly.

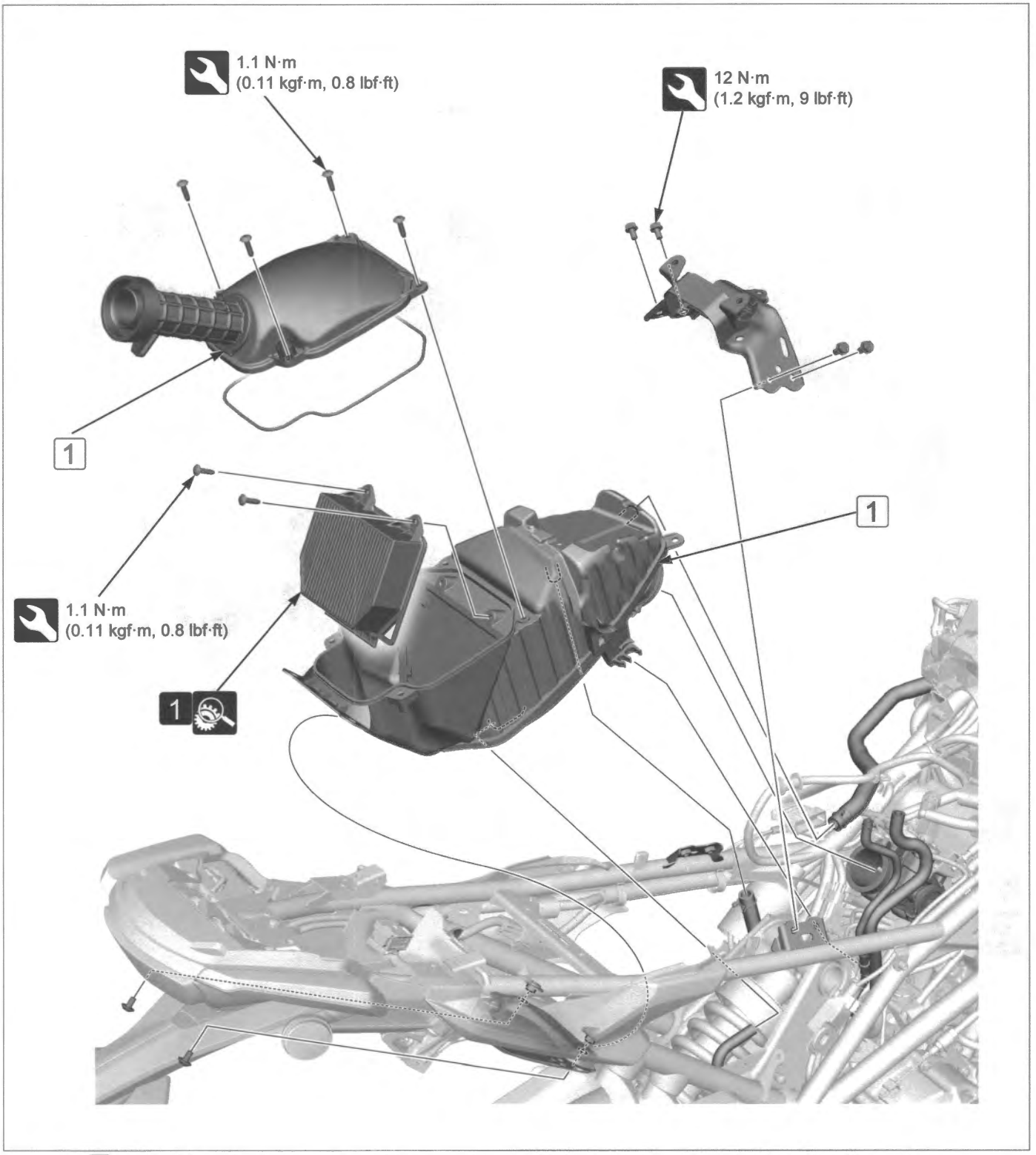
FUEL TANK

- Fuel tank cover ➔3-9
- Quick connect fitting (fuel pump side) ➔2-2



- A pressure release can be heard when opening the fuel filler cap, but this is not a blockage of the passage. If checking for a clog in the passage of the fuel tank side is necessary, apply air pressure to the breather hose end with the fuel filler cap open.
- If the fuel filler cap is removed, replace the breather seal with a new one.

AIR CLEANER

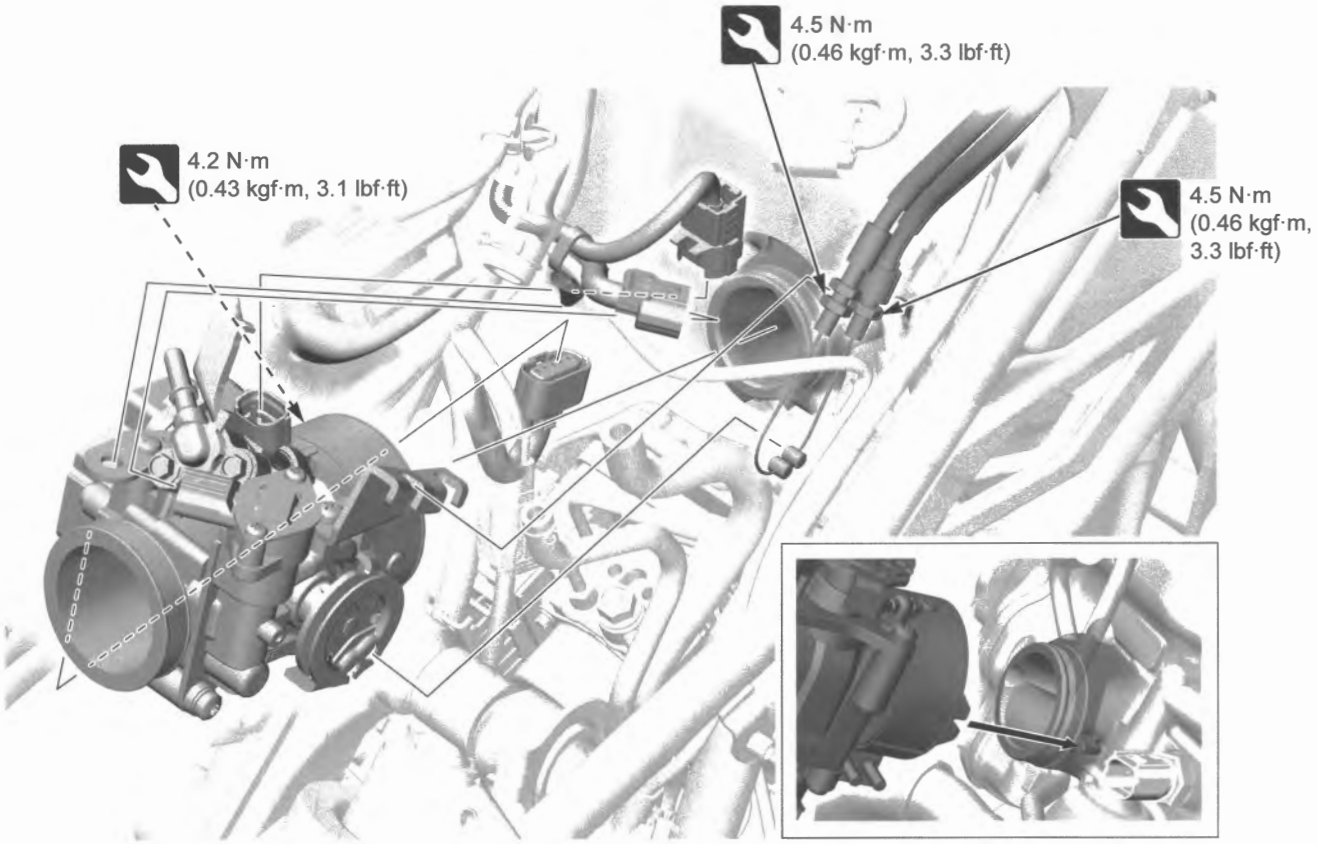


- 1 Discard the air cleaner element in accordance with the maintenance schedule. ➔1-33
- Replace the element any time it is excessively dirty or damaged.

- ECM ➔4-25

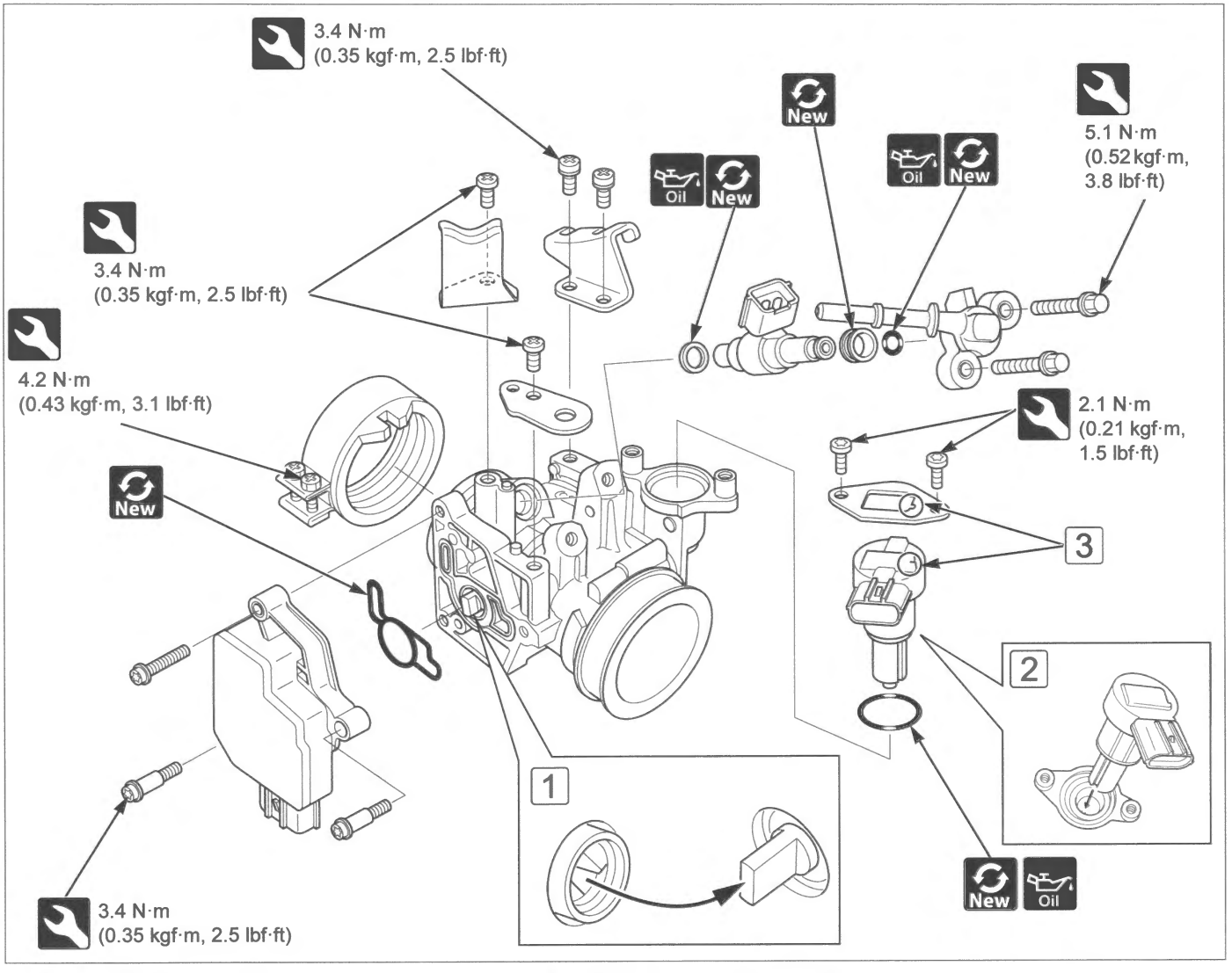
- 1 Apply Honda Bond A or equivalent to the inlet duct and air cleaner connecting hose mating surface.

THROTTLE BODY



- Air cleaner ➔2-7
- Quick connect fitting (injector side) ➔2-2
- TP sensor reset procedure ➔2-10
- Throttle body cleaning and inspection

Basic



- The throttle body is factory pre-set. Disassemble it only as shown in this manual.
- Do not loosen or tighten the white painted fasteners. Loosening or tightening it can cause throttle body malfunction.
- Do not hold the throttle drum when installing the sensor unit.

Sensor unit

- Throttle body ➔2-8

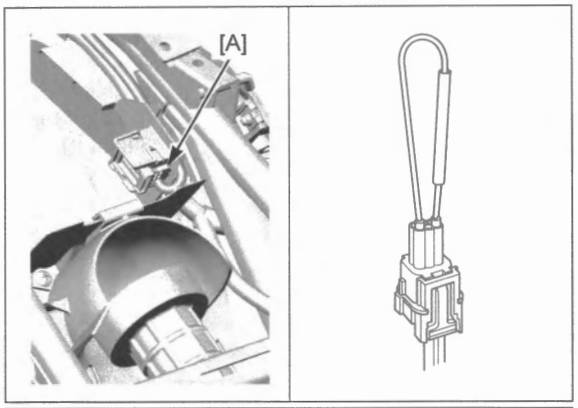
- [1] Install the sensor unit to the throttle body by aligning the clip of the sensor unit and boss of the throttle valve.
- Perform the TP sensor reset procedure. ➔2-10

IACV

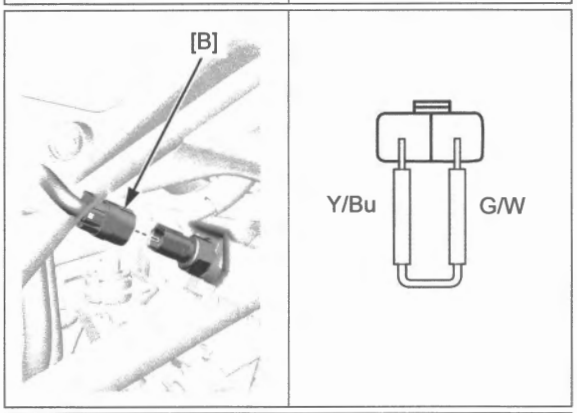
- Fuel tank lifting ➔4-55

- [2] Install the IACV by aligning its slide valve slot with the pin in the throttle body.
- [3] Install the set plate by aligning the slot with the IACV tab.

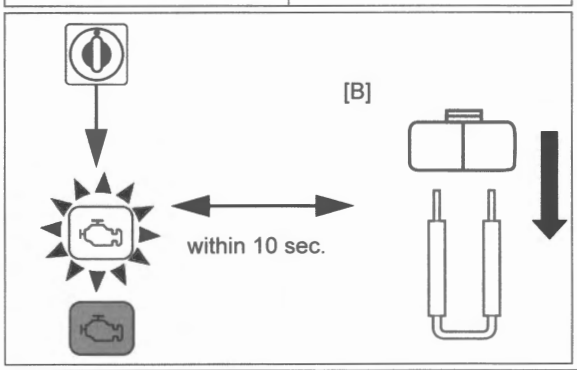
TP SENSOR RESET PROCEDURE



- Make sure no DTCs are stored in the ECM. If any DTCs are stored in ECM, the TP sensor reset mode won't start by following the procedure below.
- Main seat ➔3-4
- Connector cover from the DLC [A].
- Connect the special tool to the DLC.
  SCS short connector: 070MZ-0010300
  (U.S.A. : 070MZ-001A300)

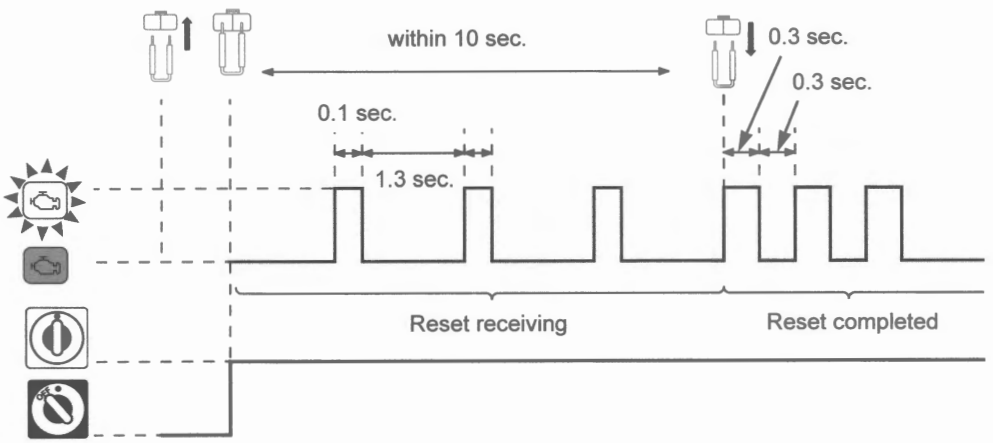


- ECT sensor 2P connector [B].
- Short the ECT sensor terminals with jumper wire.
  Connection: G/W – Y/Bu

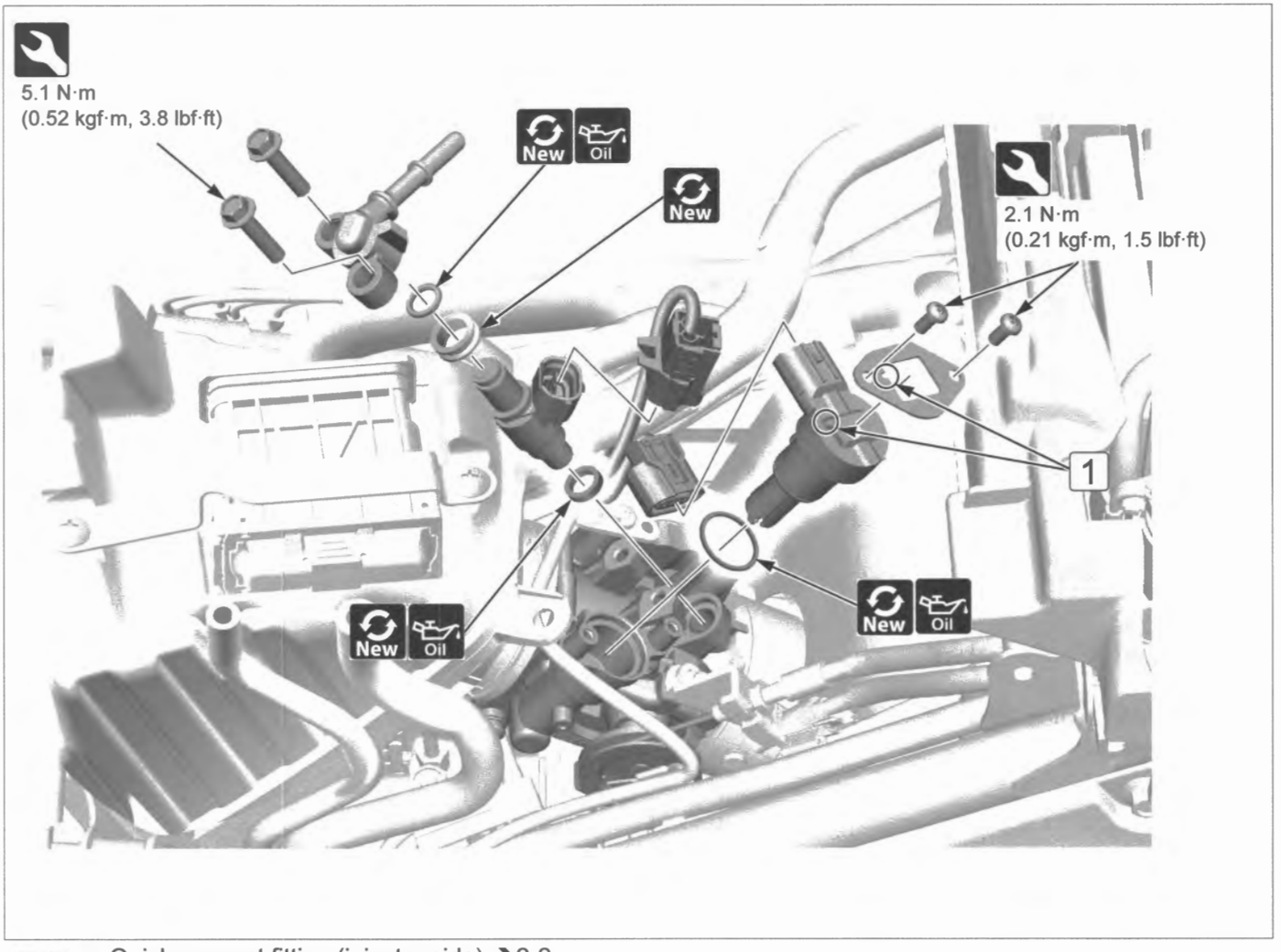


- Turn the ignition switch ON, then disconnect the jumper wire from the ECT sensor 2P connector within 10 seconds while the MIL is blinking (reset receiving pattern).
- Check if the MIL blinks.
  After disconnecting the jumper wire, the MIL should start blinking. (reset completed pattern)
  If the jumper wire is connected for more than 10 seconds, the MIL will stay ON (unsuccessful pattern). Try again from the first step.
- Erase the DTC'.
- Check the engine idle speed.

Reset procedure and MIL blinking pattern

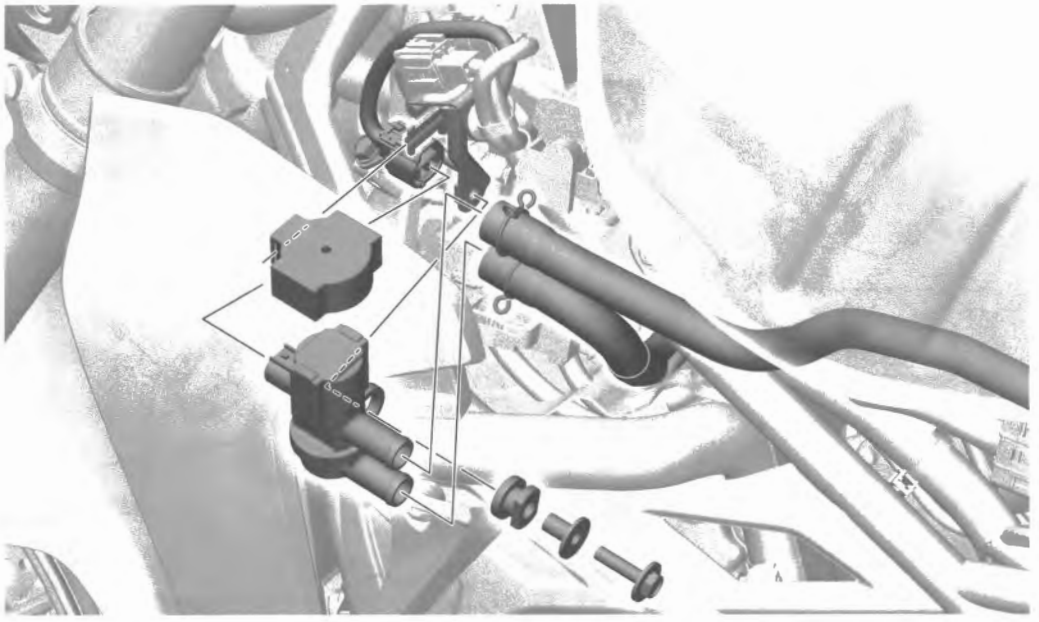


INJECTOR



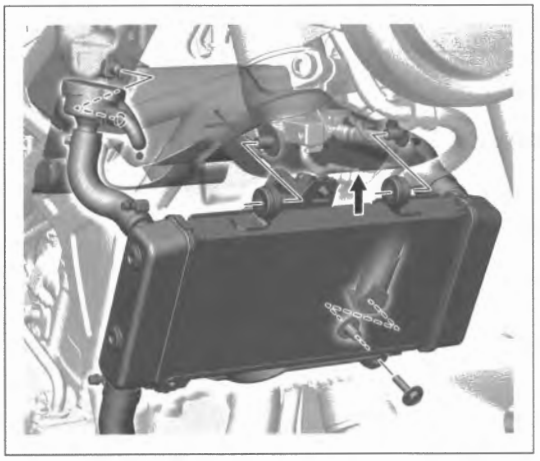
- Quick connect fitting (injector side) ➔2-2
- [1] Install the set plate by aligning the slot with the IACV tab.

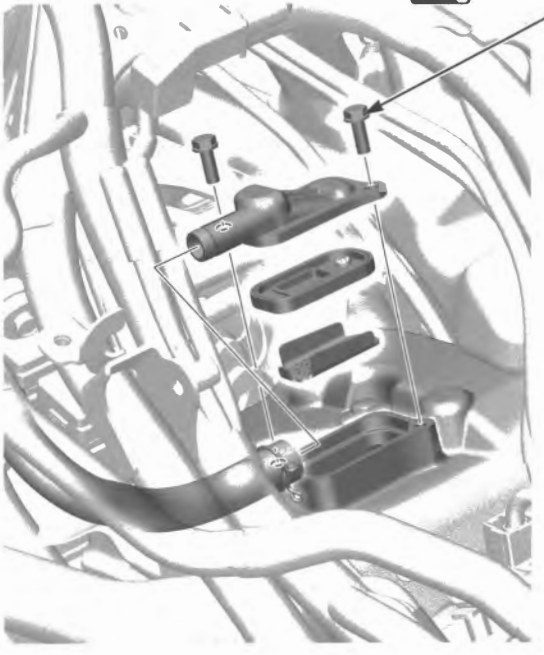
SECONDARY AIR SUPPLY SYSTEM



- Fuel tank cover ➔3-9
- PAIR control solenoid valve inspection

Basic

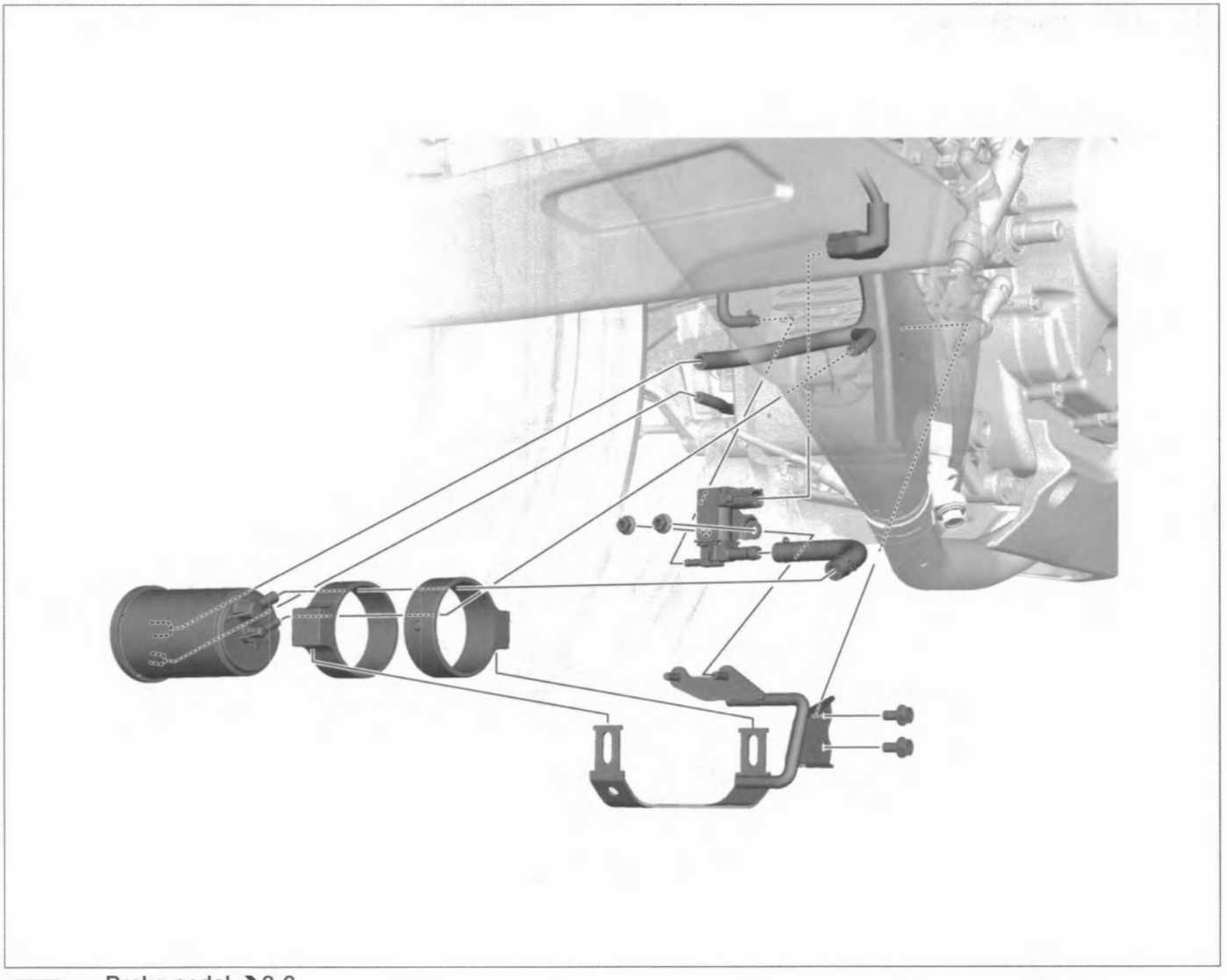




- Battery box ➔4-56
- Right radiator cover ➔3-8
- PAIR check valve inspection

Basic

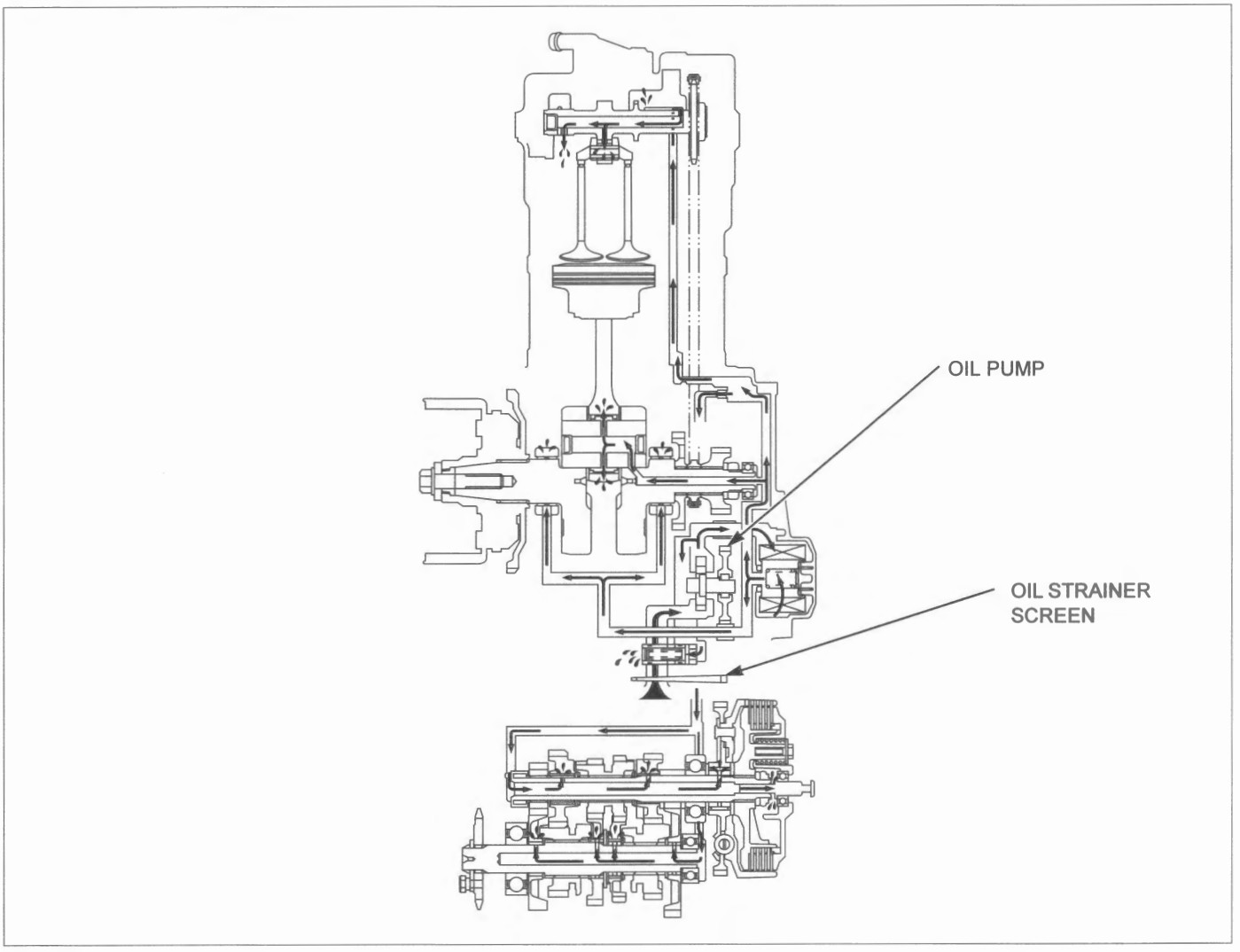
EVAP SYSTEM (AC type)



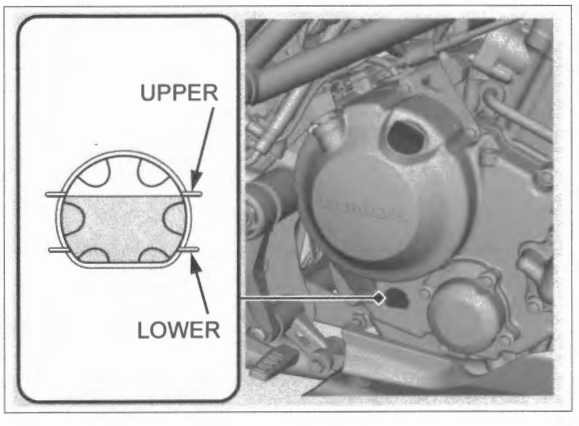
- Brake pedal ➔3-6

LUBRICATION SYSTEM

SYSTEM DIAGRAM

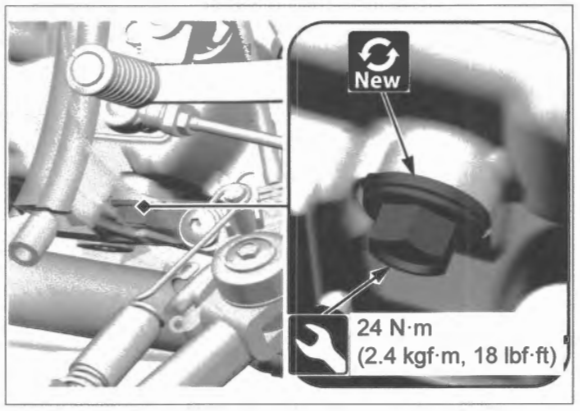


ENGINE OIL LEVEL CHECK



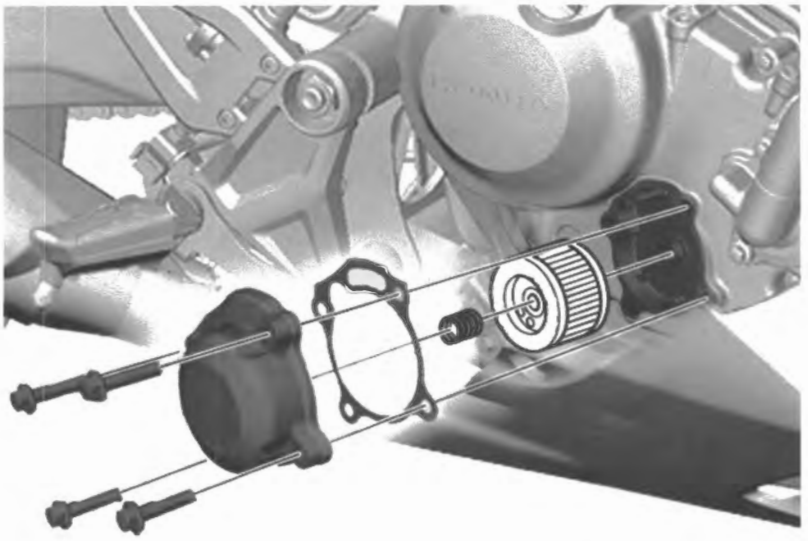
- Place the vehicle on level ground with its sidestand.
- Let it idle for 3 – 5 minutes, then the ignition to OFF.
- Wait for 2 – 3 minutes.
- Support the motorcycle in an upright position on a level surface.
- If the level is below the lower level line, remove the oil filler cap and fill the crankcase with the recommended engine oil up to the upper level line.
- Check that the O-ring on the filler cap is in good condition, replace it if necessary.
- **RECOMMENDED ENGINE OIL:**
  Pro Honda GN4 4-stroke oil (U.S.A. & Canada) or equivalent motorcycle oil
  API service classification: SJ or higher
  JASO T903 standard: MA
  Viscosity: SAE 10W-30

ENGINE OIL CHANGE



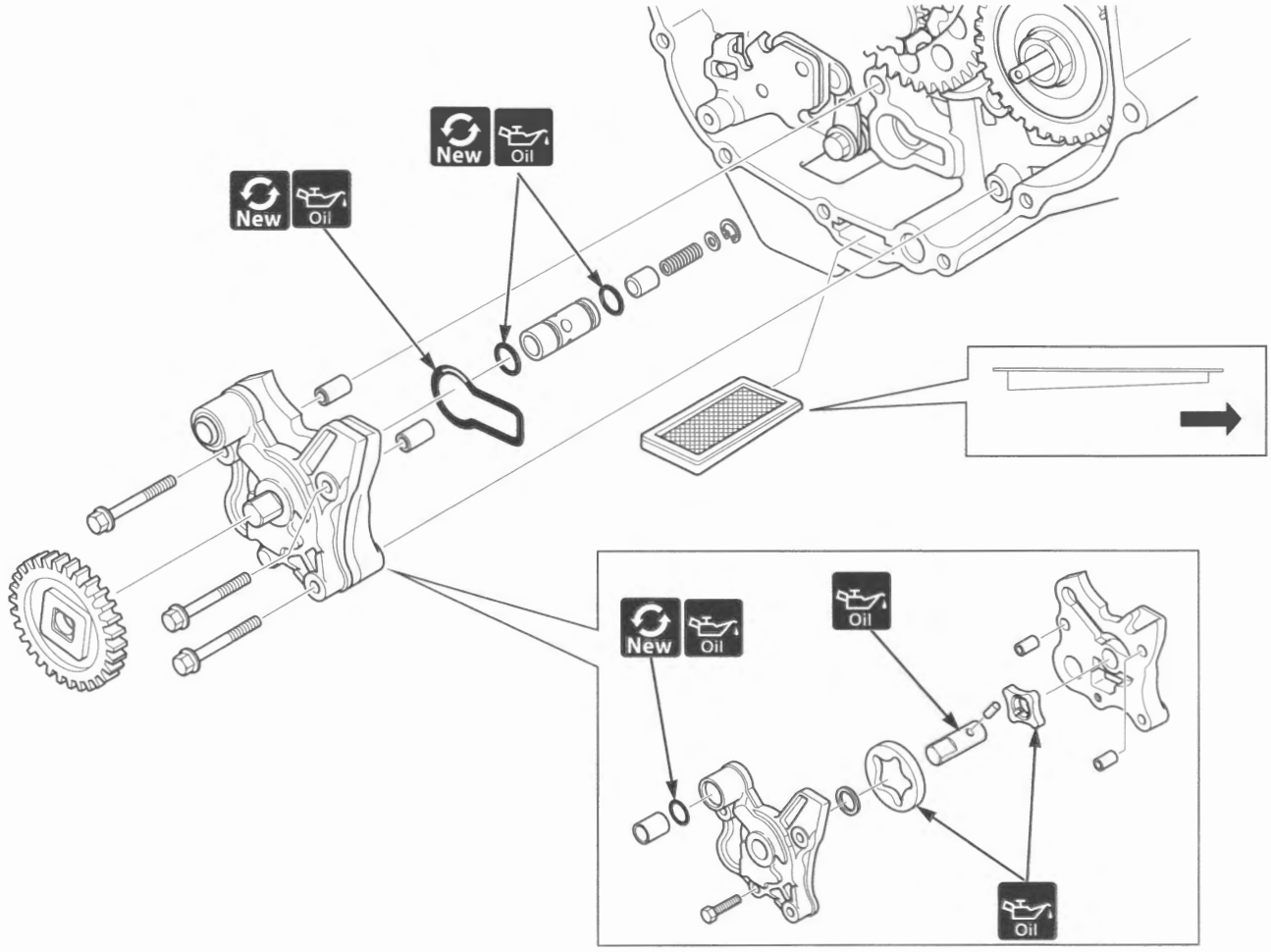
- Drain the oil completely.
- Fill the crankcase with the recommended engine oil.
- **ENGINE OIL CAPACITY:**
  1.4 liter after draining
  1.5 liter after oil filter change
  1.8 liter after disassembly

ENGINE OIL FILTER CHANGE



- Installing the oil filter backwards will result in severe engine damage.
- Engine oil filter inspection

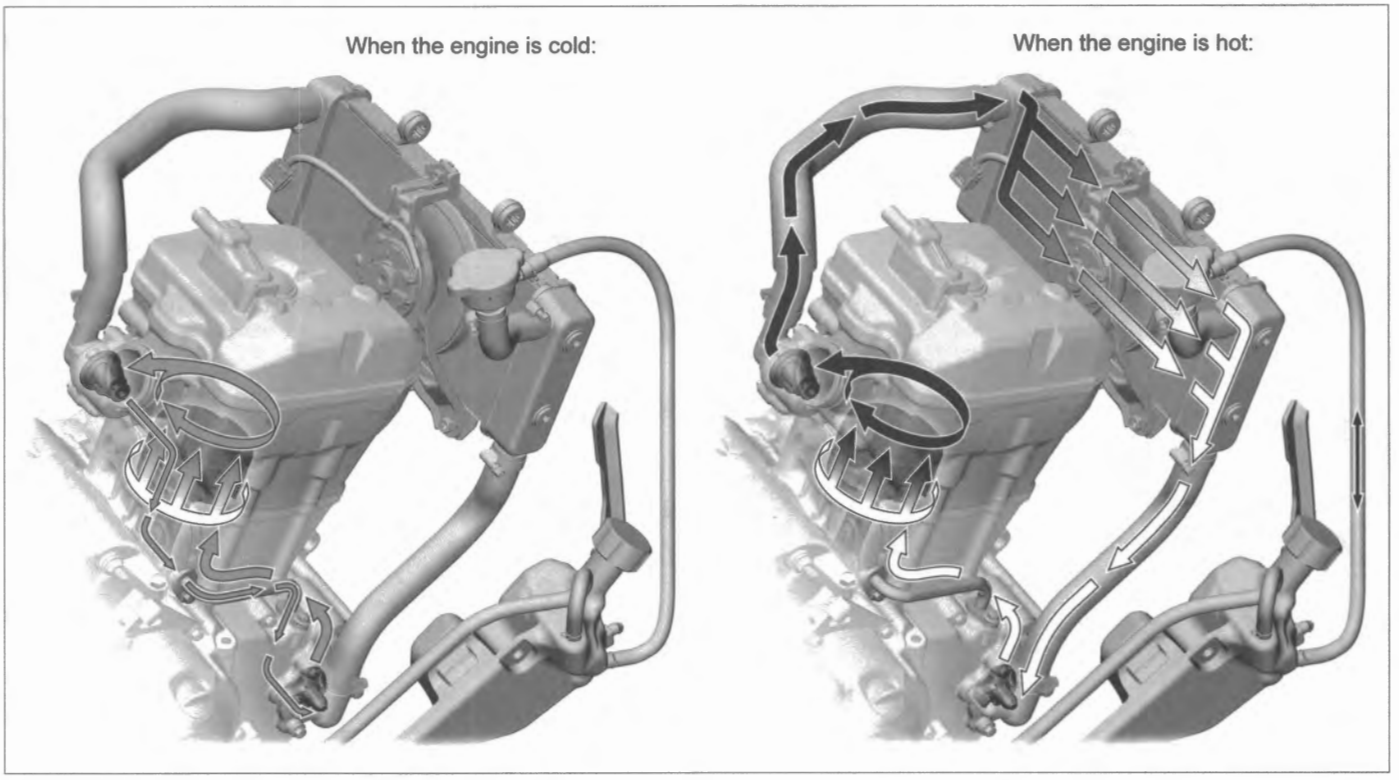
ENGINE OIL STRAINER SCREEN/OIL PUMP



- Right crankcase cover ➔2-30
- Oil pump inspection

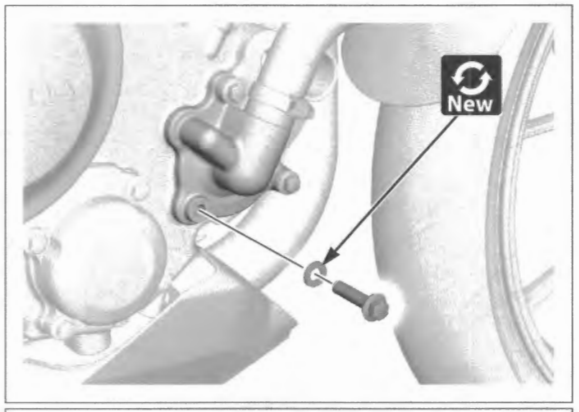
COOLING SYSTEM

SYSTEM DIAGRAM



COOLANT REPLACEMENT

Coolant drain

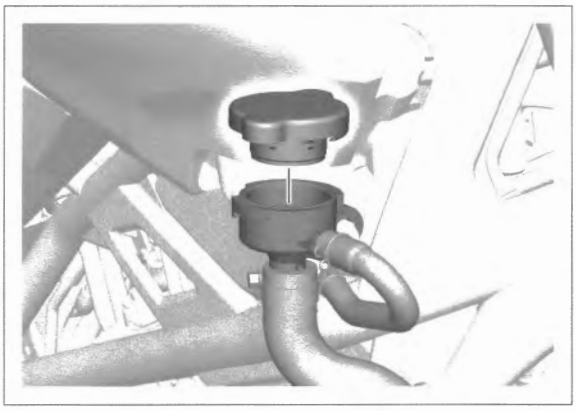


Basic
- Cooling system testing and inspection

- Radiator cover ➔3-8
- Radiator cap
- Coolant from the system

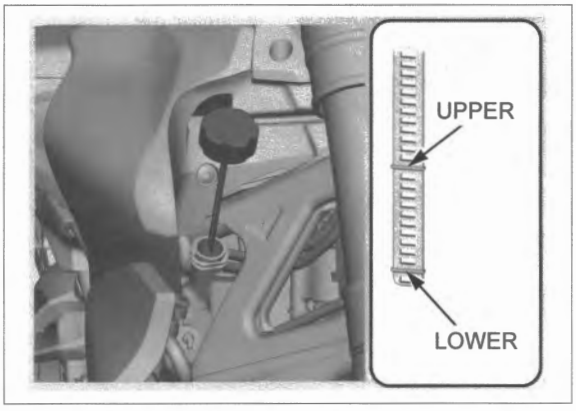
- Siphon hose from the filler neck
- Coolant from the reserve tank

Air bleeding/Adding



- Radiator cover ➔3-8

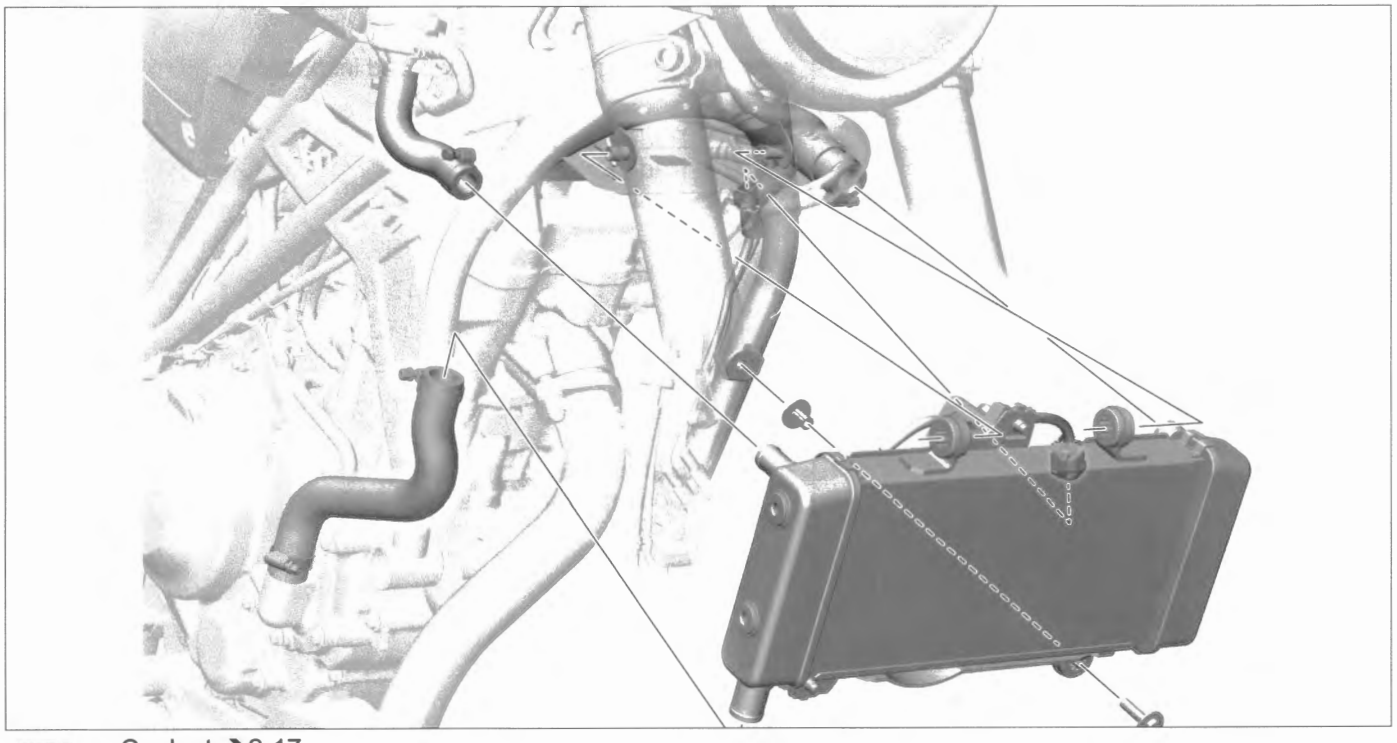
- Fill the system with coolant through the filler opening to the filler neck.
  RECOMMENDED ANTIFREEZE:
  Pro Honda HP Coolant or an equivalent high quality ethylene glycol antifreeze containing corrosion protection inhibitors
- Start the engine and let it idle for 2 – 3 minutes.
- Snap the throttle three or four times to bleed air from the system.
- Stop the engine and add coolant up to the filler neck.
- Reinstall the radiator cap.



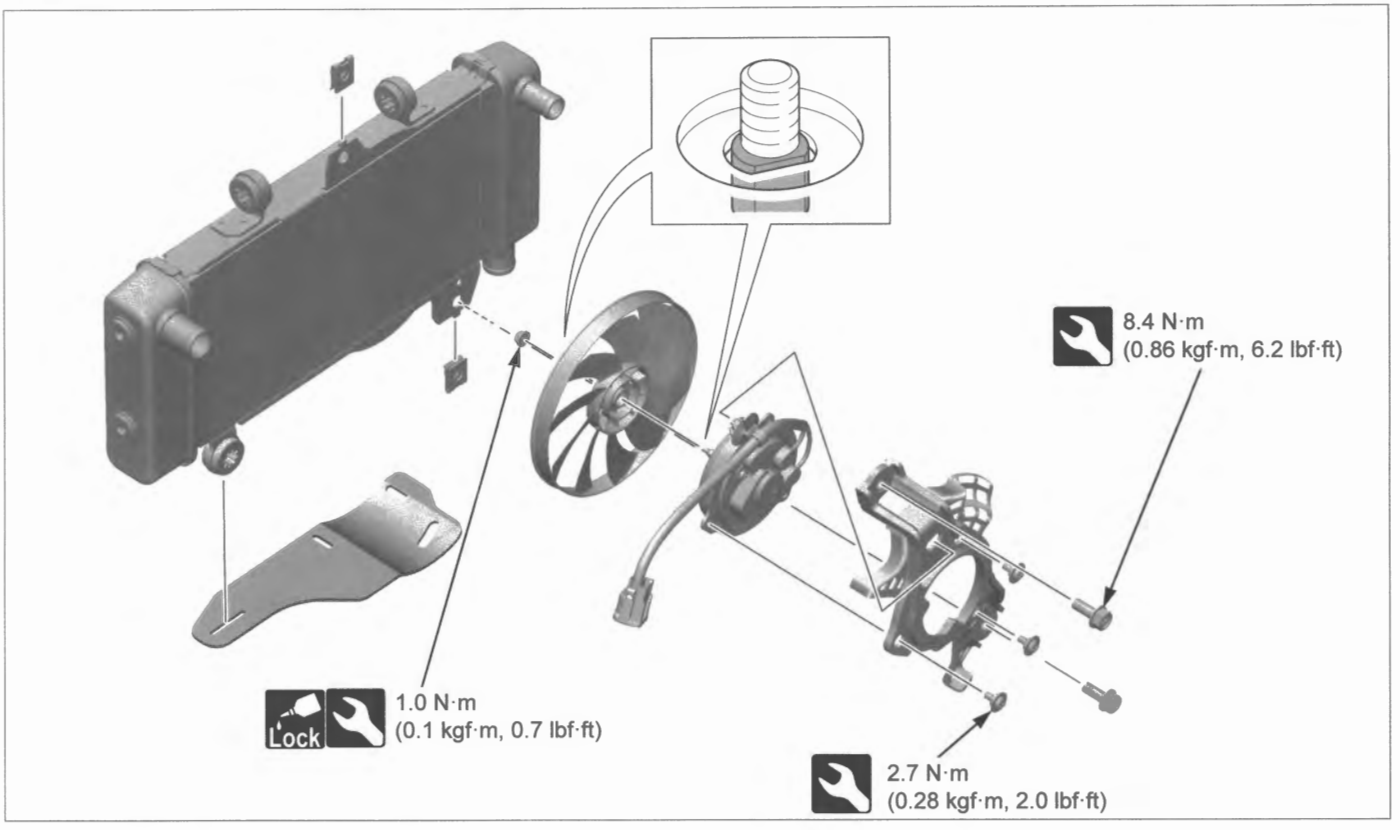
- Radiator reserve tank cap.

- If the coolant level is below or near the lower level, add the recommended coolant to the upper level line.

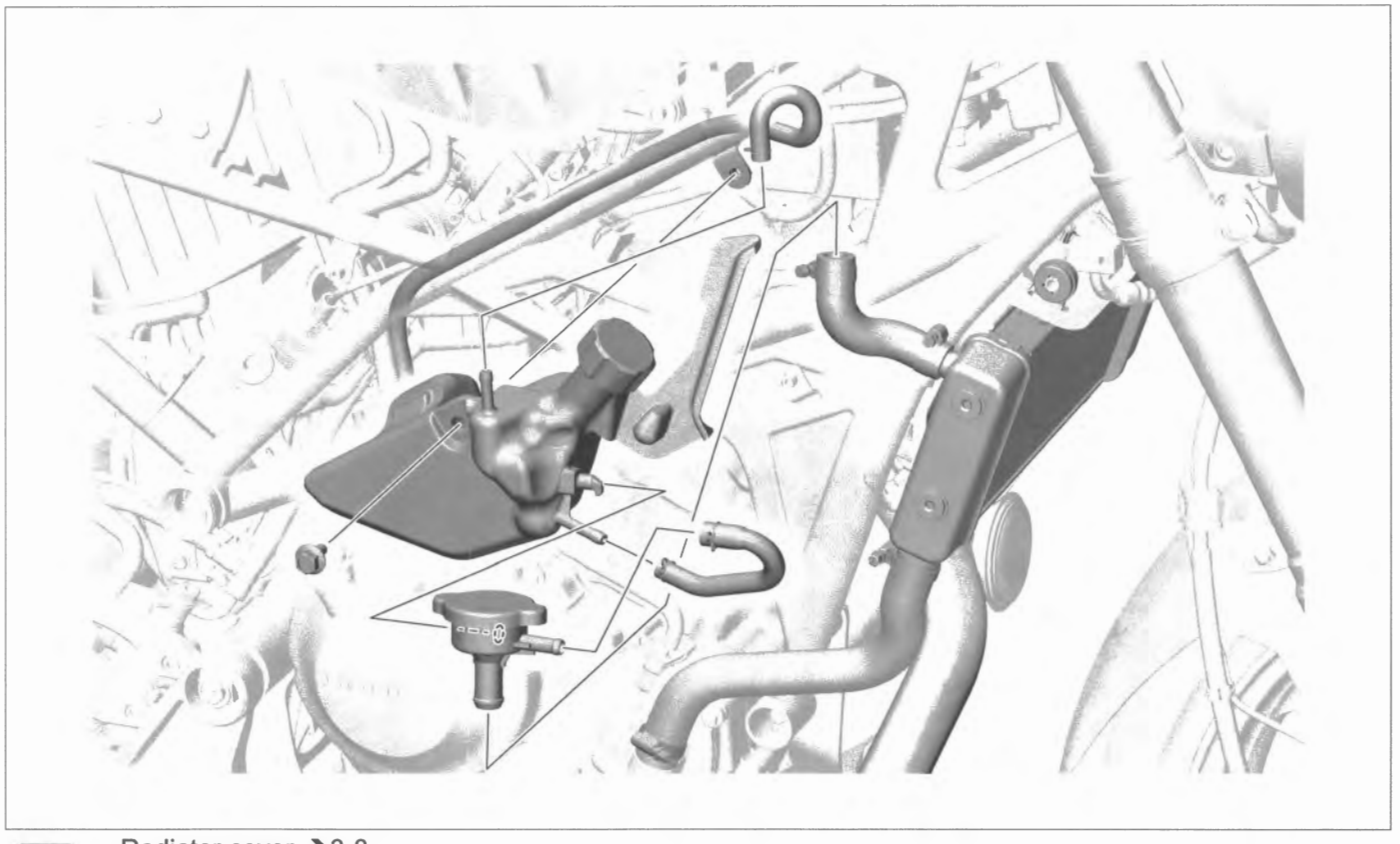
RADIATOR/COOLING FAN



- Coolant ➔2-17
- Radiator cover ➔3-8

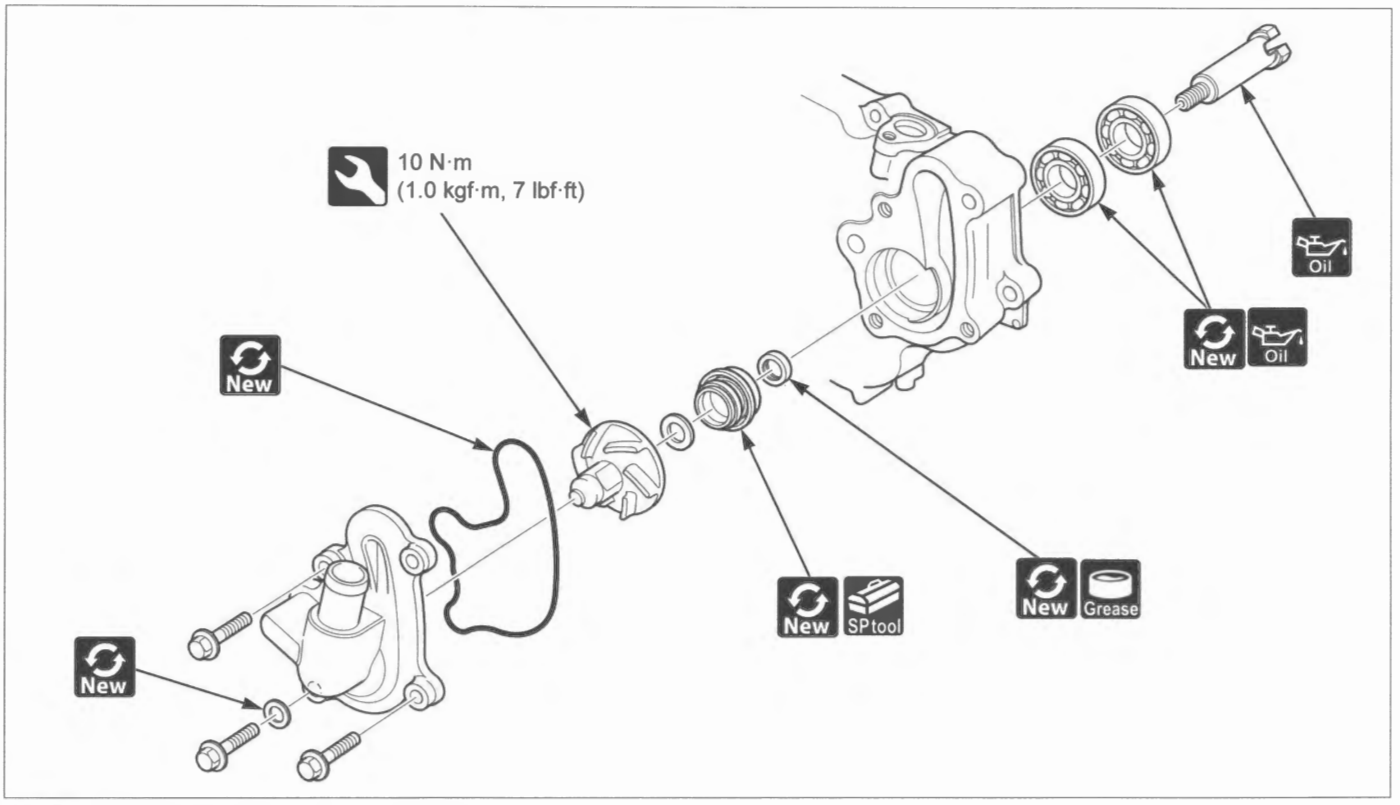


RADIATOR RESERVE TANK



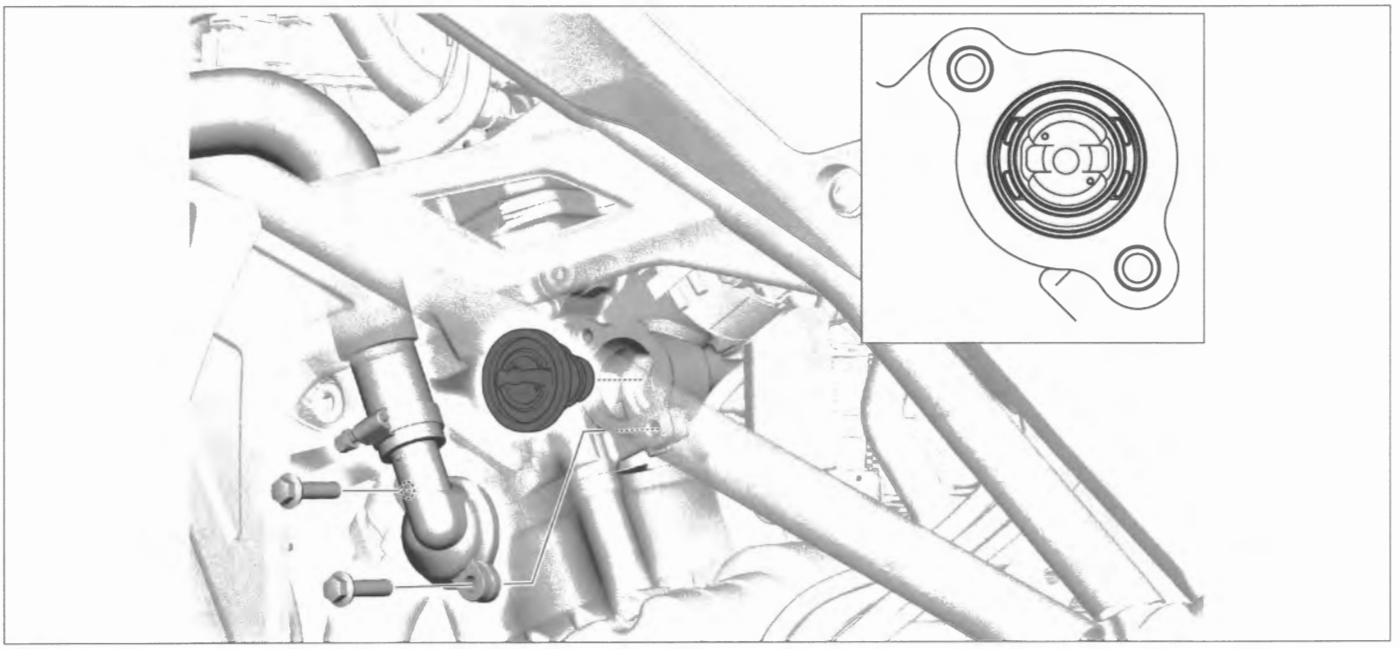
- Radiator cover ➔3-8

WATER PUMP/THERMOSTAT/WATER PIPE



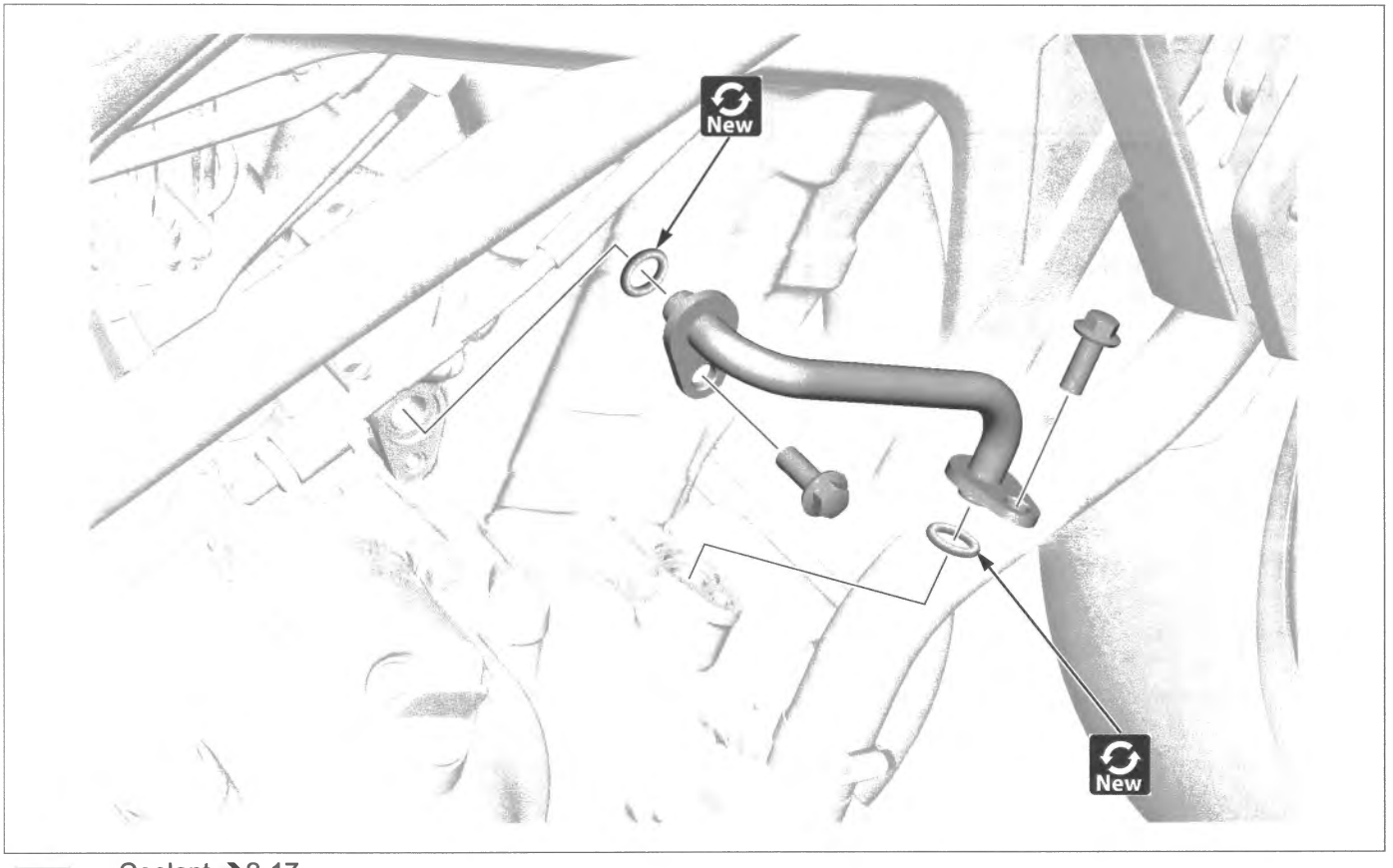
- Right crankcase cover ➔2-30

- Press a new mechanical seal using a hydraulic press and special tool.
  Oil seal driver 30 x 36: 07HMF-KR10101



- Coolant ➔2-17

- Thermostat inspection

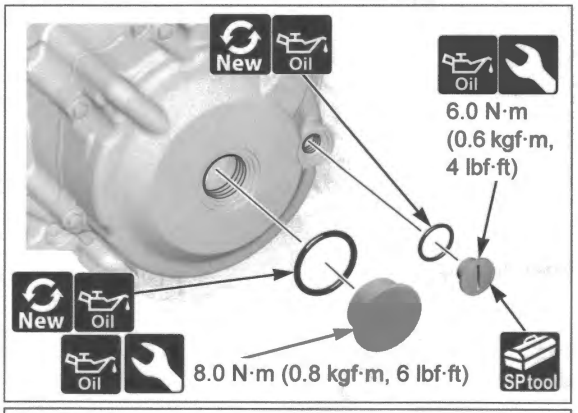


- Coolant ➔2-17

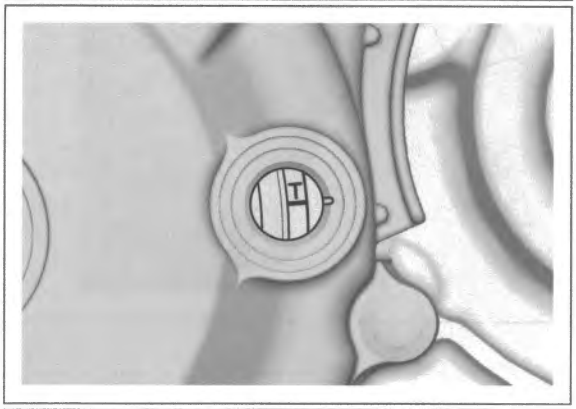
CYLINDER HEAD

VALVE CLEARANCE

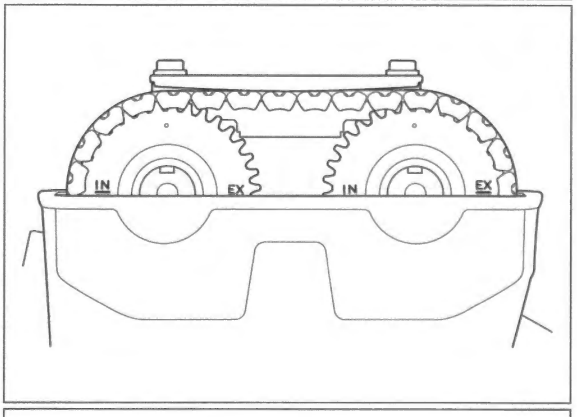
INSPECTION



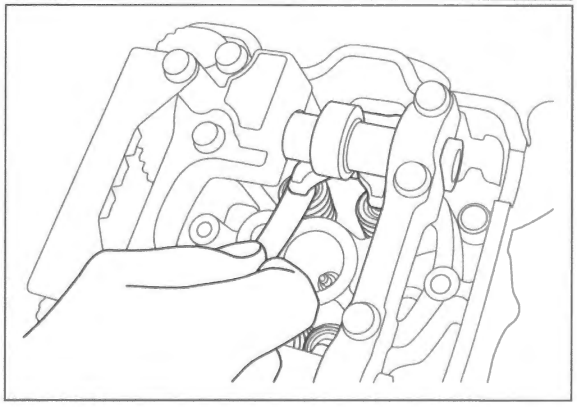
- Inspect while the engine is cold (below 35°C).
- After the valve clearance inspection, check the engine idle speed.
- Cylinder head cover ➔2-24
- Timing hole cap/O-ring, crankshaft hole cap/O-ring
  Timing cap wrench: 07709-0010001



- Rotate the crankshaft counterclockwise and align the "T" mark on the flywheel with the index notch on the left crankcase cover.

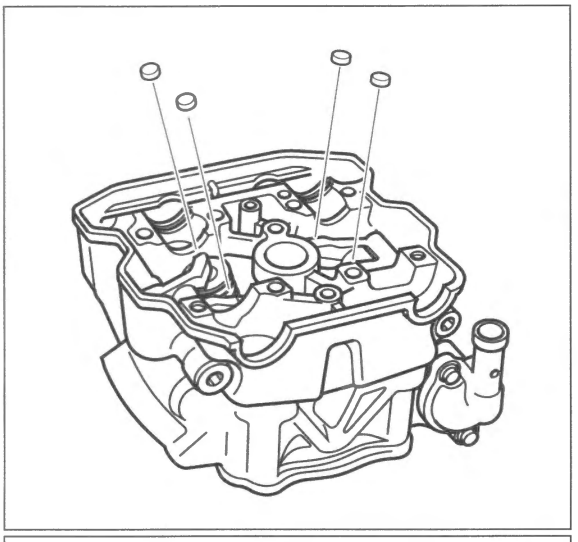


- The index lines on the cam sprockets must be flush with the cylinder head surface.
- Make sure the piston is at TDC (Top Dead Center) on the compression stroke.

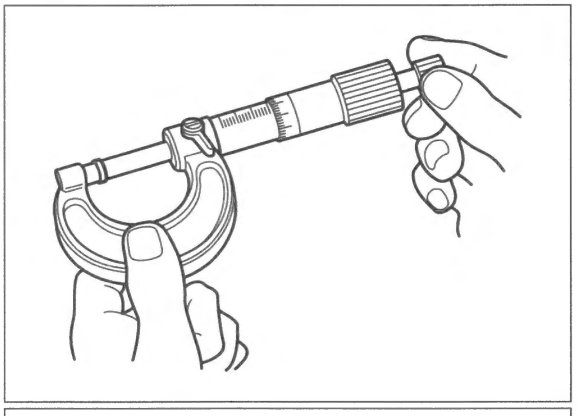


- Valve clearance (Insert a feeler gauge between the rocker arm and shim).
  IN: 0.16 ± 0.03 mm, EX: 0.27 ± 0.03 mm

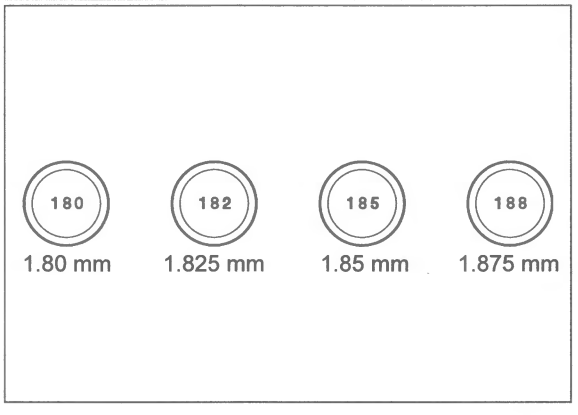
ADJUSTMENT



- Adjust while the engine is cold (below 35°C).
- Do not allow the shims to fall into the crankcase.
- Mark all shims to ensure correct reassembly in their original locations.
- The shims can be easily removed with tweezers or a magnet.
- Camshaft ➔2-24
- Shims
- Clean the valve shim contact area with compressed air.

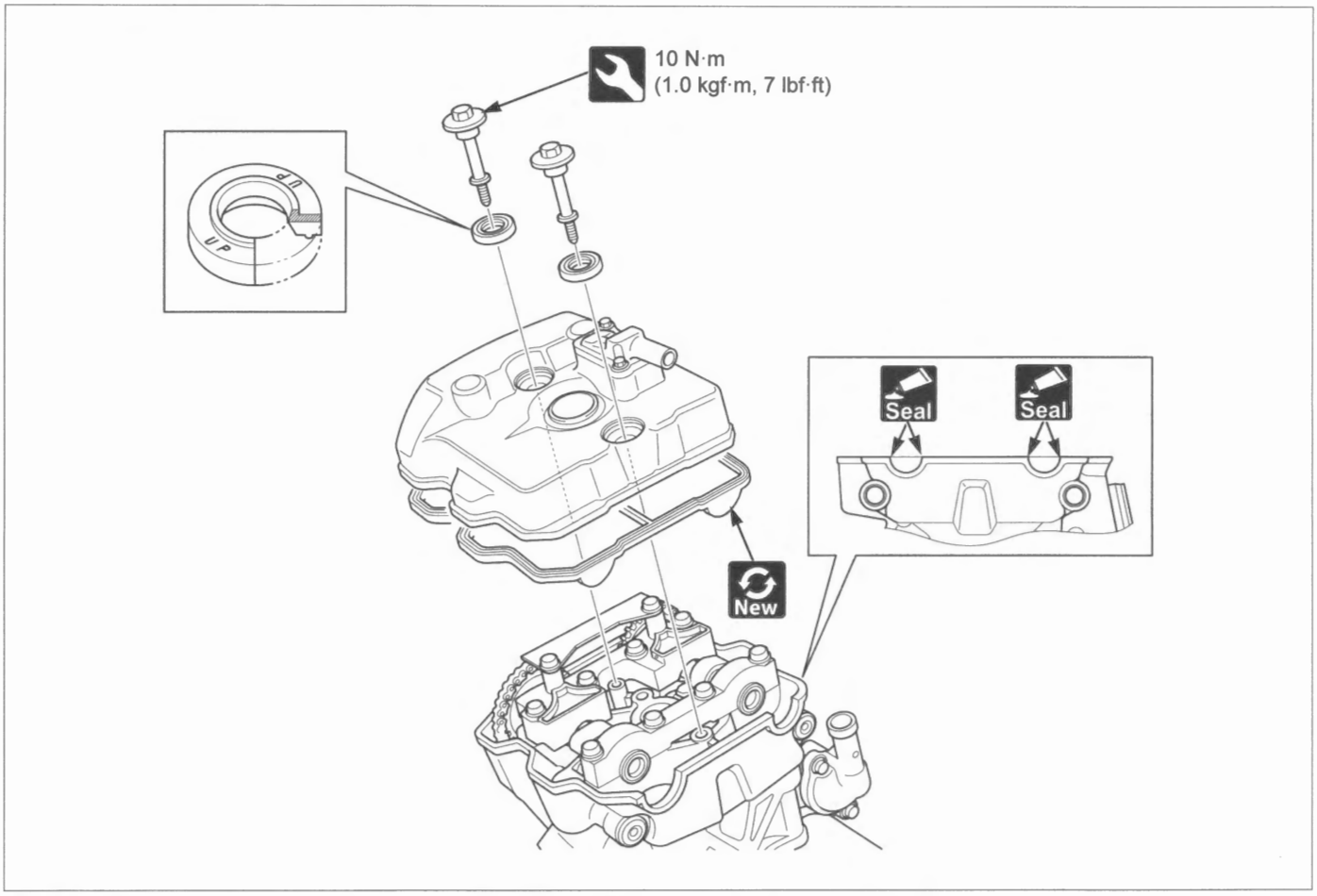


- Measure the shim thickness and record it.



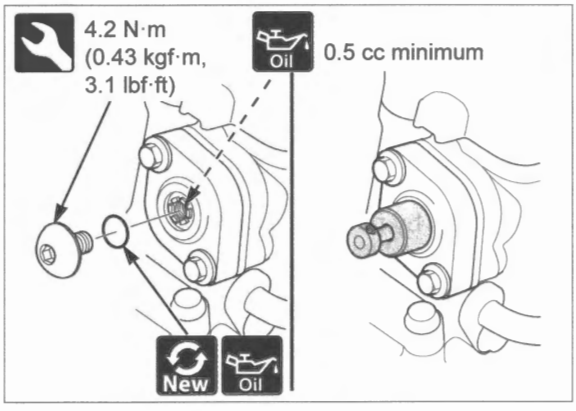
- Calculate the new shim thickness using the equation below.
  A = (B – C) + D
  A: New shim thickness
  B: Recorded valve clearance
  C: Specified valve clearance
  D: Old shim thickness
- Fifty-seven different shim thicknesses are available from the thinnest 1.500 mm shim to the thickest 2.900 mm shim in intervals of 0.025 mm.
- Use a micrometer to measure the shim to get an accurate measurement.
- Reface the valve seat if carbon deposit result in a calculated dimension of over 2.900 mm.
- Install the newly selected shim on the valve spring retainer.
- Removed parts
- Rotate the camshafts by rotating the crankshaft counterclockwise several times.
- Recheck the valve clearance ➔2-22

CYLINDER HEAD COVER

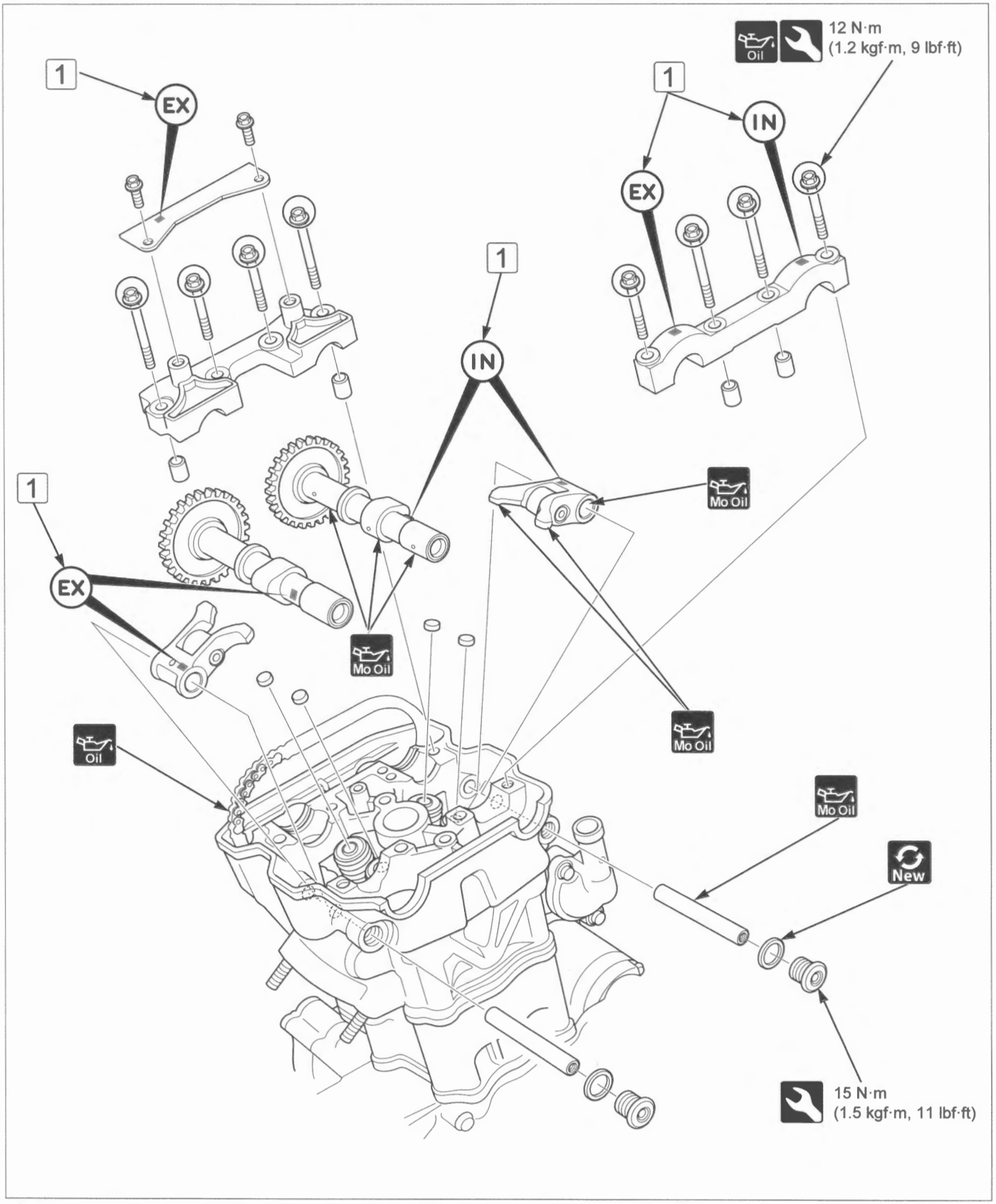


- Remove the radiator mounting bolt, then shift the radiator forward. ➔2-12
- Battery box. ➔4-56
- Radiator reserve tank. ➔2-19
- [1] Apply sealant (Three bond 5211C or 1207B or 1215 or Shin-Etsu Silicone KE45 or equivalent) to the cylinder head cover gasket's semicircular corner.

CAMSHAFT/ROCKER ARM

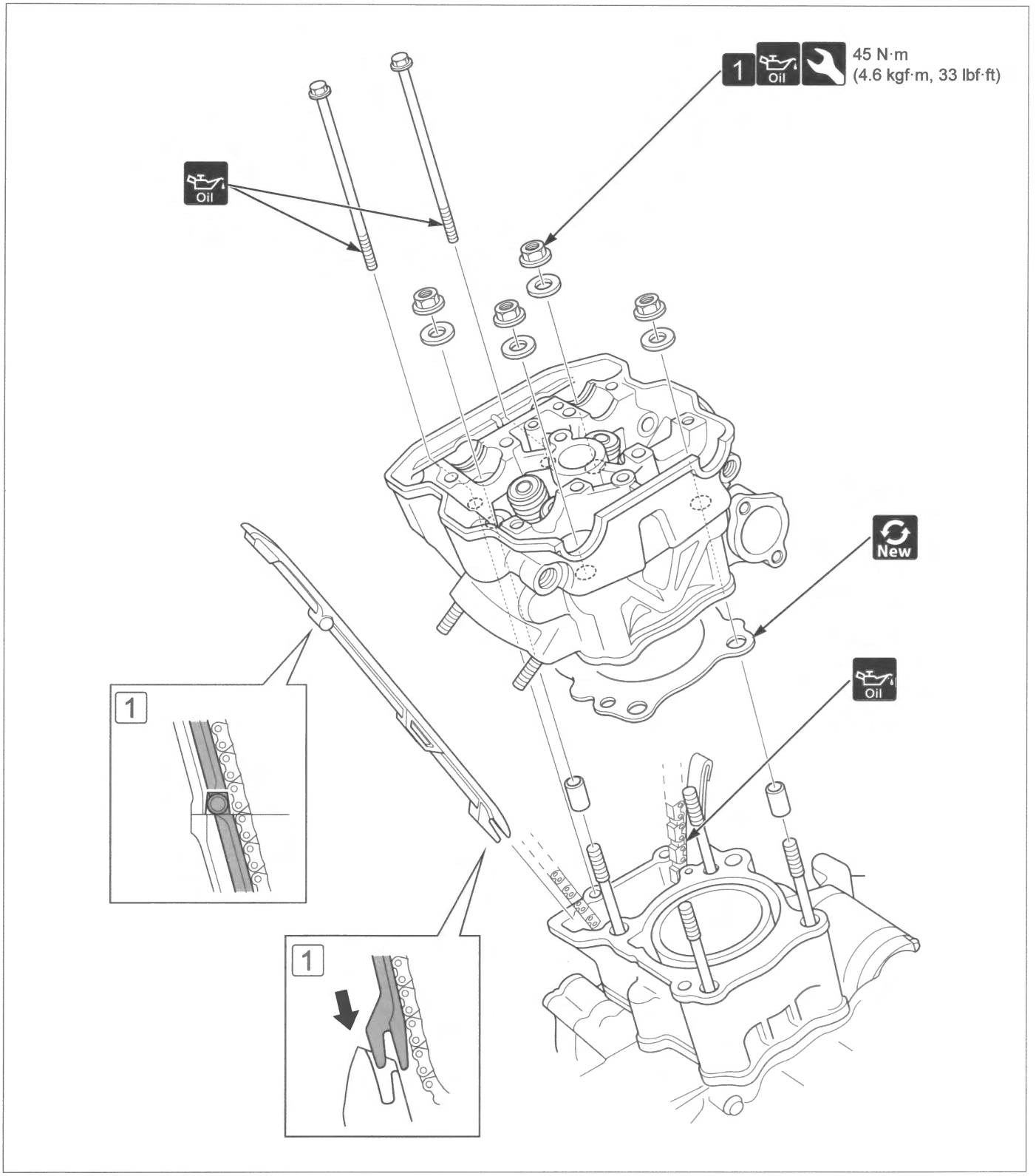


- Cylinder head cover ➔2-24
- Set the piston to TDC (Top Dead Center) on the compression stroke ➔2-22
- Install the special tool into the tensioner body and turn the tool clockwise until it stops. Hold the tensioner lifter by pushing the tool while aligning the tabs of the tool with the grooves of the tensioner lifter.
  Stopper tensioner: 070MG-0010100
  (U.S.A. : 07AMG-001A100)

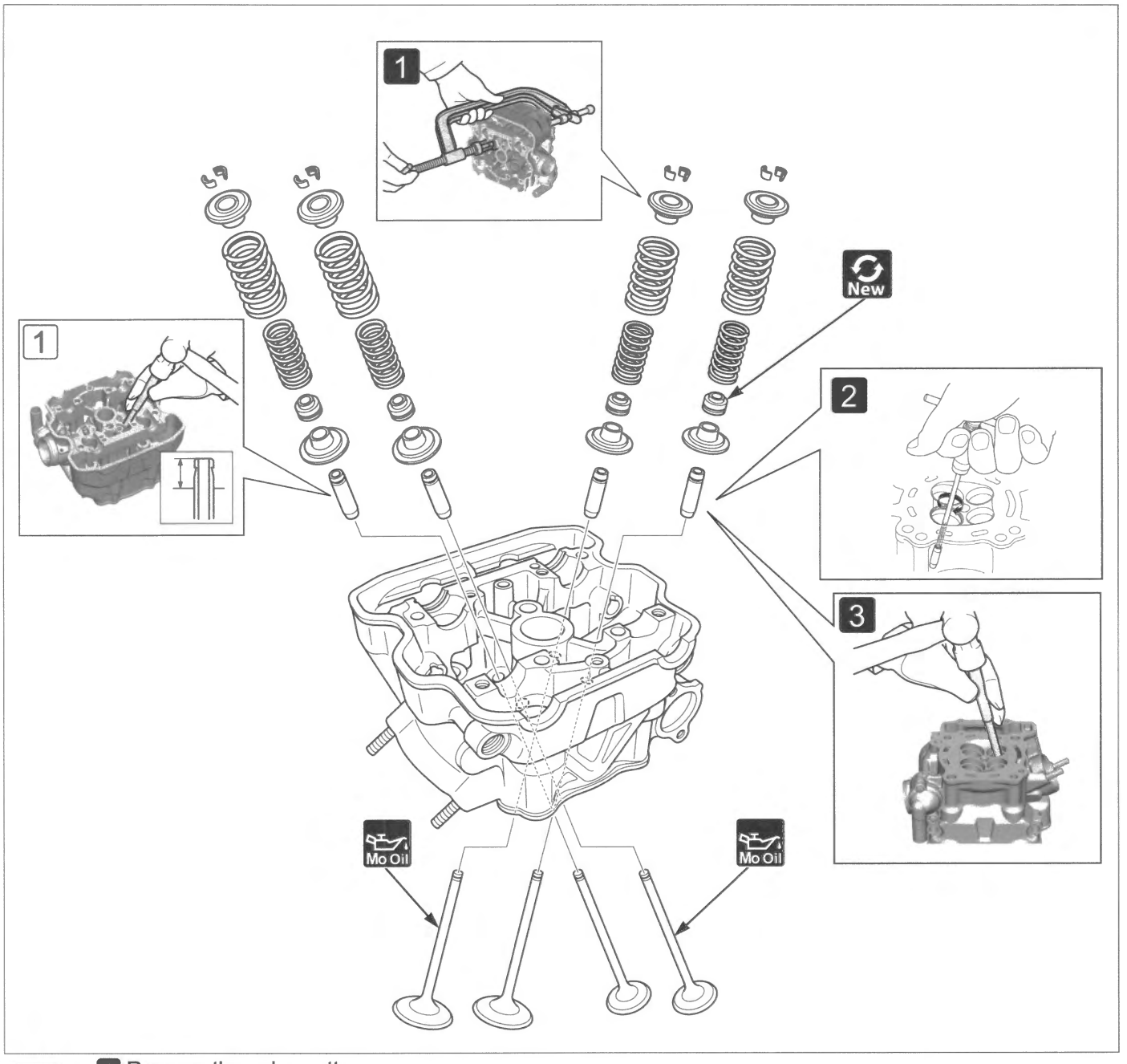


- Install the camshaft, rocker arm, camshaft holder and cam chain guide B to the correct position with the identification mark.

Basic
- Camshaft inspection
- Camshaft oil clearance inspection



- Engine ➔2-41
- Camshaft ➔2-24
- 1 Loosen the cylinder head nuts in a crisscross pattern in two or three steps.
- 1 Install the cam chain guide while aligning its pins with the grooves on the cylinder head and its end with the groove on the left crankcase.

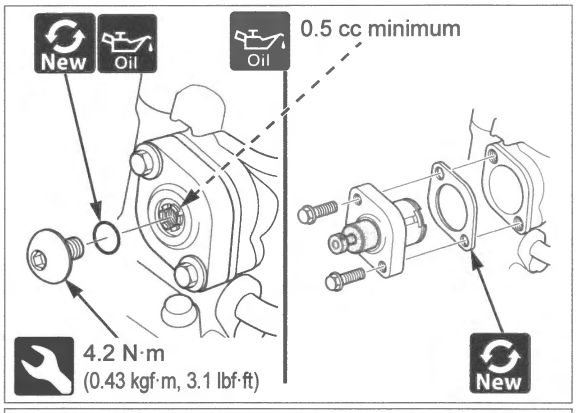


- 1 Remove the valve cotters.
  Valve spring compressor set: 07757-0010000
  Valve spring compressor attachment 21: 07959-KM30101 (U.S.A. : 07GME-001000A)
- 2 Ream the valve guide to remove any carbon build up before measuring the guide. Insert the reamer from the combustion chamber side of the cylinder head and always rotate the reamer clockwise.
  Valve guide reamer 4.508: 07HMH-ML00101 (07HMH-ML0010B U.S.A. only)
- 3 Support the cylinder head and drive the valve guides out of the cylinder head from the combustion chamber side.
  Valve guide driver 4.3 x 8.5: 07HMD-ML00101

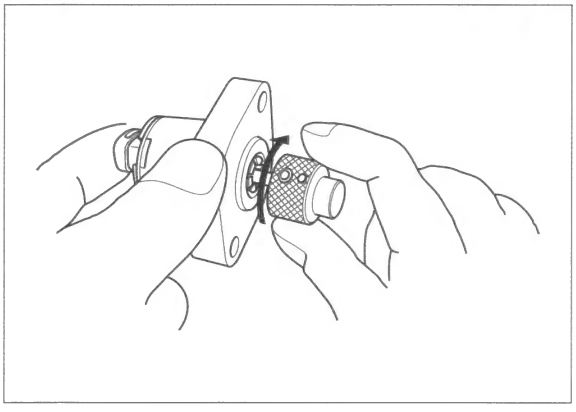
- 1 Drive new valve guides into the cylinder head to the specified height from the cylinder head.
  INTAKE/EXHAUST VALVE GUIDE HEIGHT: 13.8 – 14.0 mm
  Valve guide driver adjustable type: 07743-0020000 (U.S.A. : 07742-0010100 or 07942-6570100)

Basic
- Valve and valve spring inspection
- Valve guide inspection
- Valve seat inspection

CAM CHAIN TENSIONER

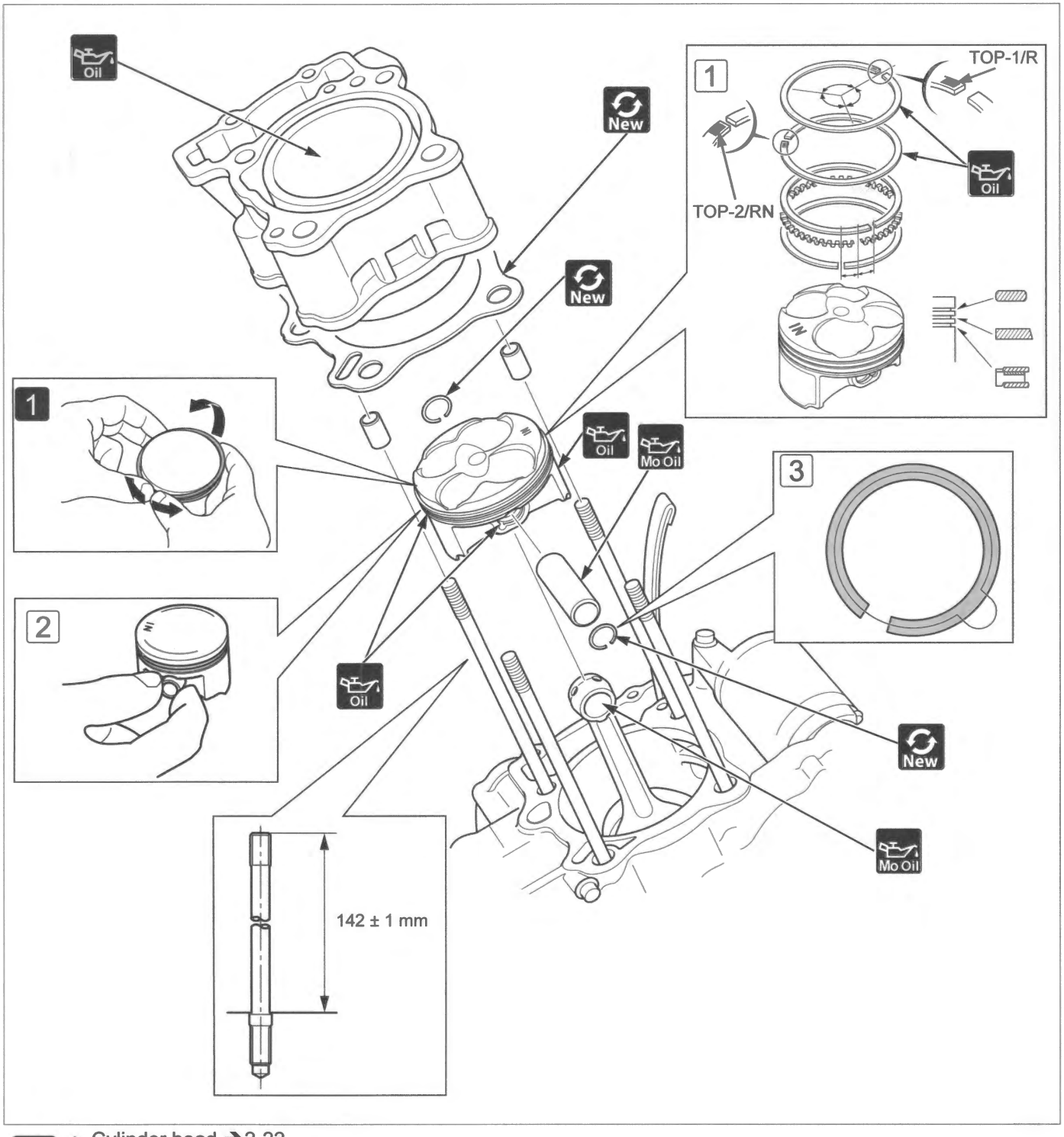


- Install the special tool into the tensioner body and turn the tool clockwise until it stops. Hold the tensioner lifter by pushing the tool while aligning the tabs of the tool with the grooves of the tensioner lifter.
  Stopper tensioner: 070MG-0010100
  (U.S.A. : 07AMG-001A100)



- Check the cam chain tensioner lifter operation:
  – The tensioner shaft should not go into the body when it is pushed.
  – When it is turned clockwise with the tensioner stopper, the tensioner shaft should be pulled into the body. The shaft should protrude from the body as soon as the tensioner stopper is released.

CYLINDER/PISTON

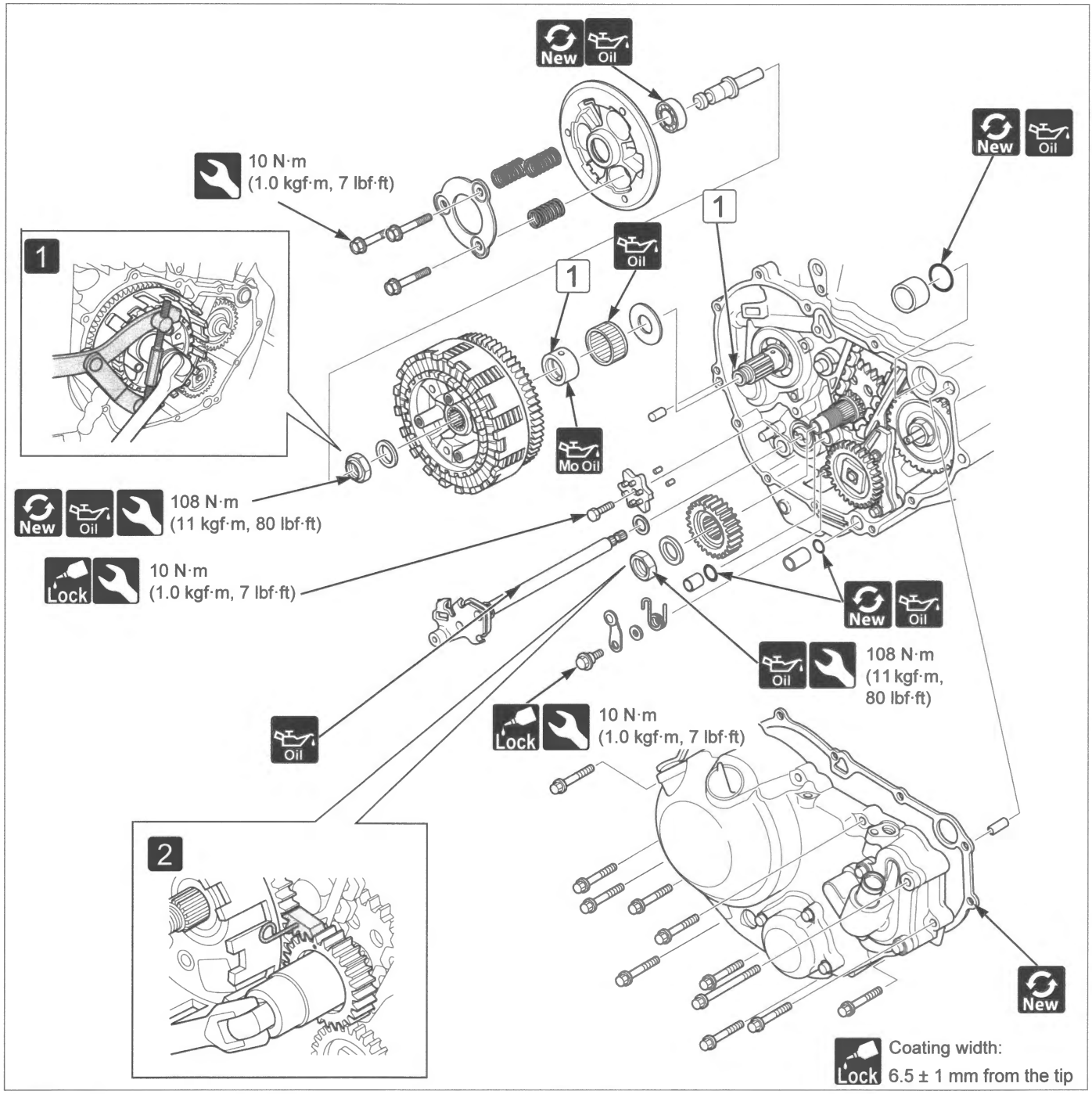


- Cylinder head ➔2-22
- Cam chain tensioner ➔2-28
- 1 Spread each piston ring and remove it by lifting up at the point opposite the gap.
- 1 Carefully install the piston rings into the piston ring grooves with the markings facing up.
- 2 Install the piston with the "IN" mark facing the intake side.
- 3 Do not align the piston pin clip end gap with the piston cut-out.
- Piston and piston rings inspection
- Cylinder inspection

Basic

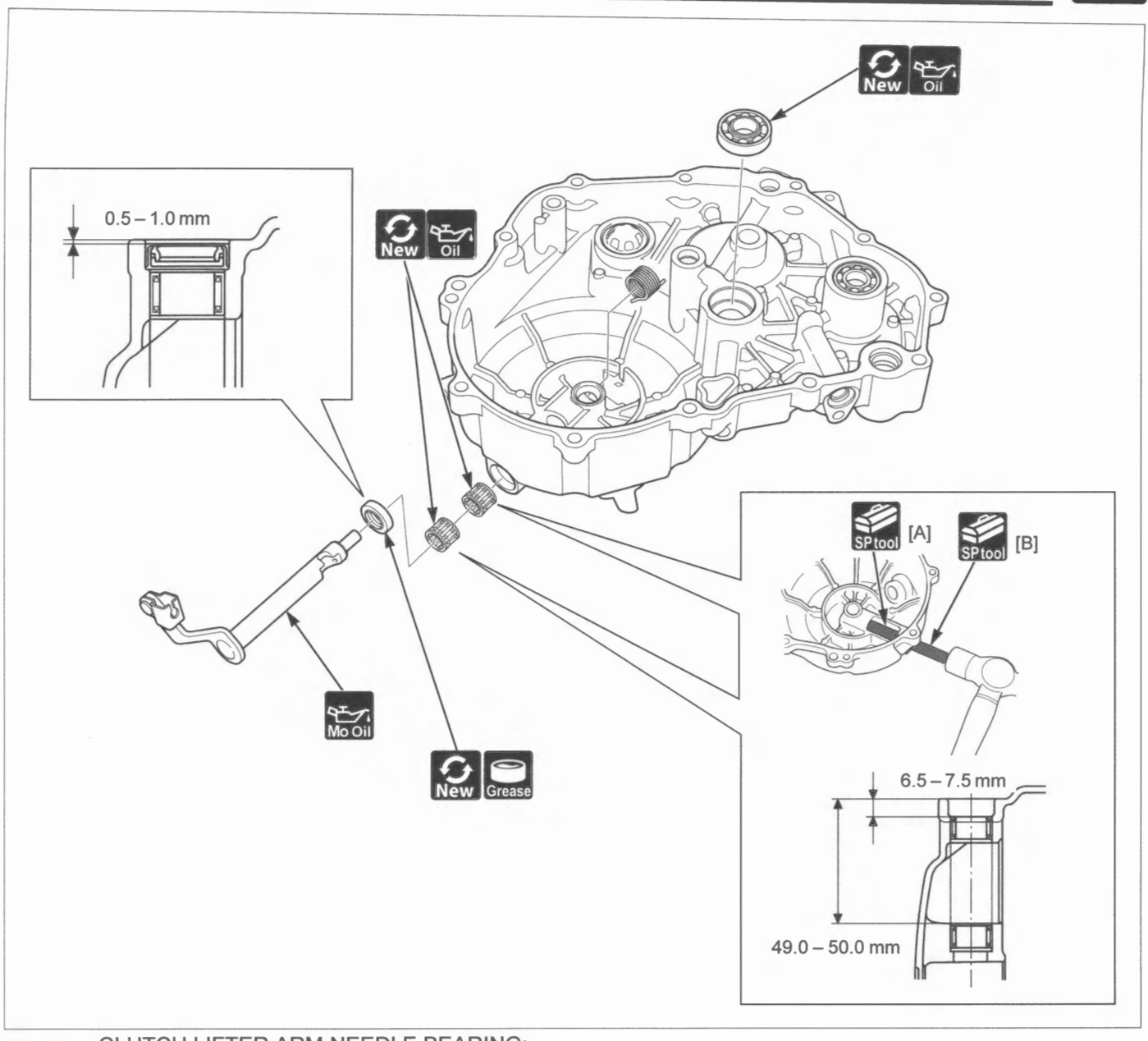
CLUTCH/GEARSHIFT LINKAGE

- This service can be performed with the engine installed in the frame.

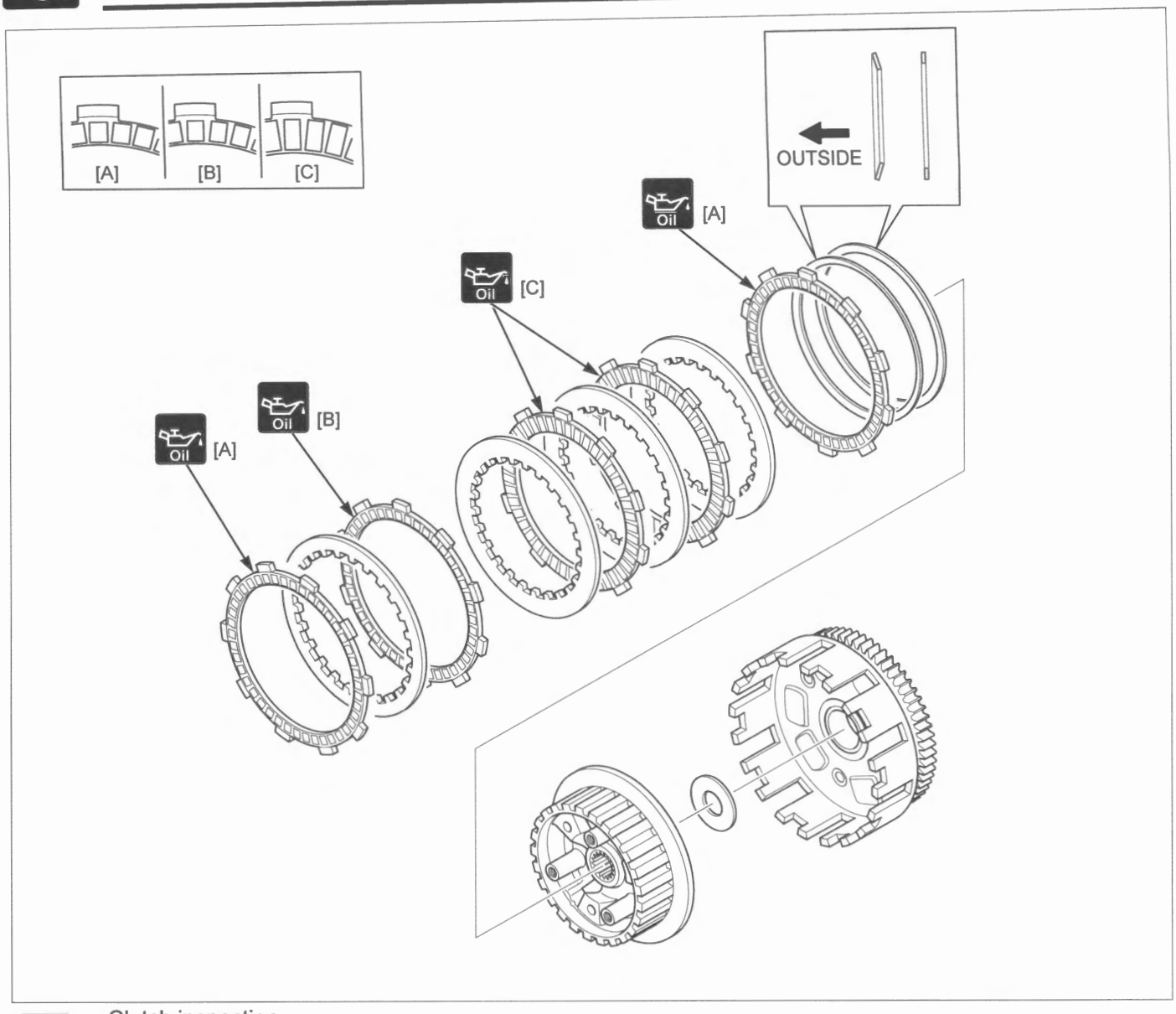


- Gearshift pedal ➔3-11
- Water pipe ➔2-20
- Under cowl ➔3-7
- Engine oil ➔2-15
- 1 Loosen the clutch center lock nut.
  Clutch center holder P.D. 48-135: 07724-0050002 (U.S.A. : Snap-on MTP08-0008)
- 2 Hold the flywheel and loosen the primary drive gear lock nut.
  Gear holder M1.5 mm: 07724-0010200 (U.S.A. : 07724-001A200)

- 1 The mainshaft and clutch outer guide has an ID color paint mark.
  When the clutch outer assembly is replaced, be sure to select the same color codes of the mainshaft and clutch outer guide.



- CLUTCH LIFTER ARM NEEDLE BEARING:
  [A] Pilot collar, 16 mm: 07PAF-0010620
  [B] Remover head 10 mm: 07746-0050200

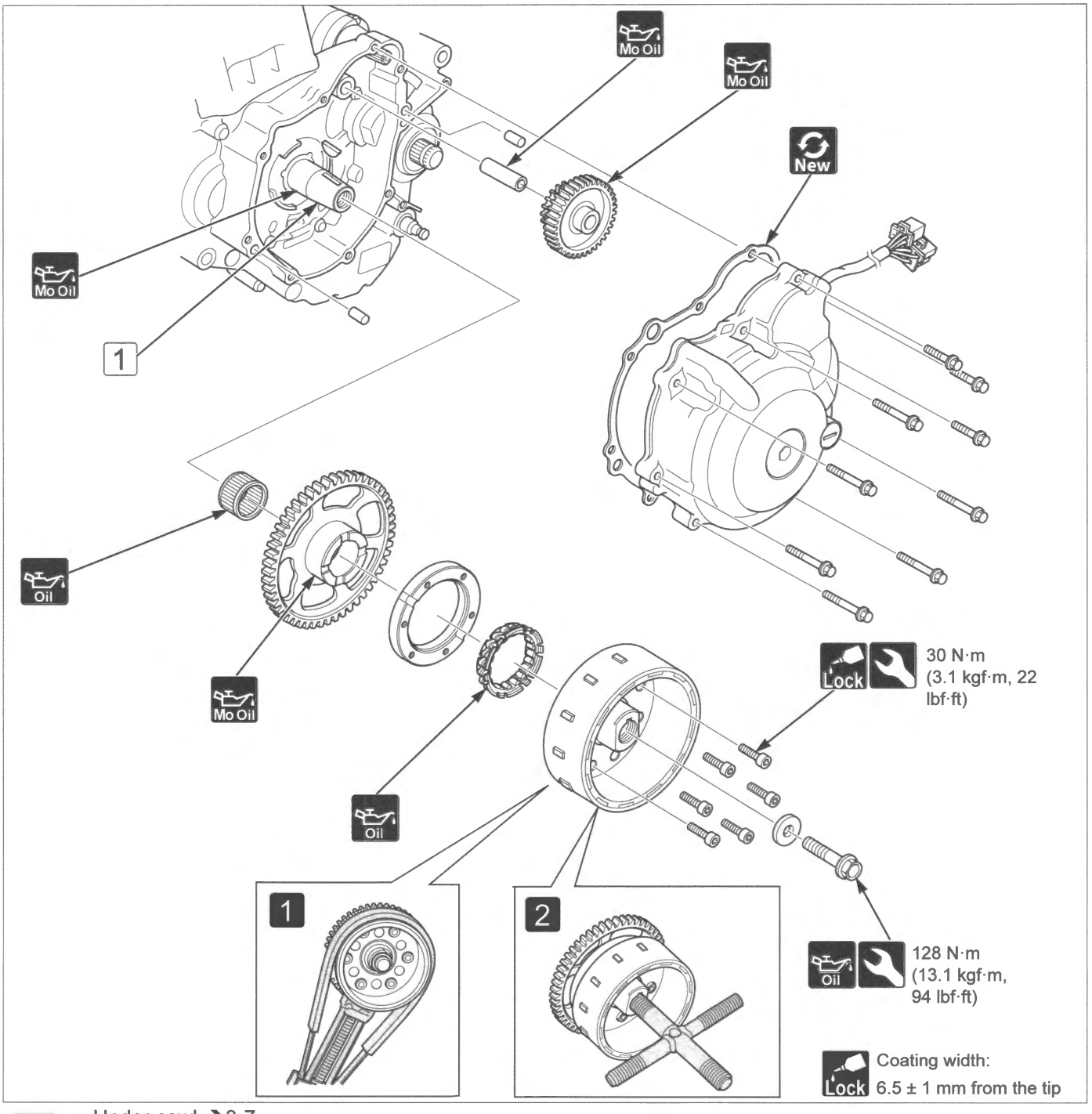


Basic

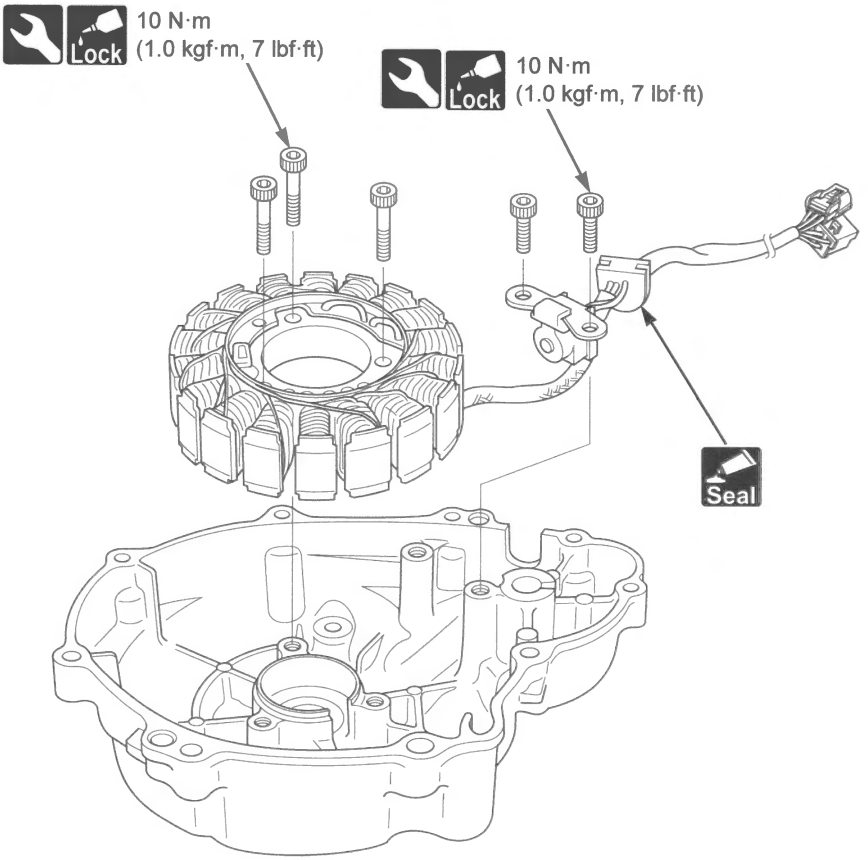
- Clutch inspection

ALTERNATOR/STARTER CLUTCH

- This service can be performed with the engine installed in the frame.

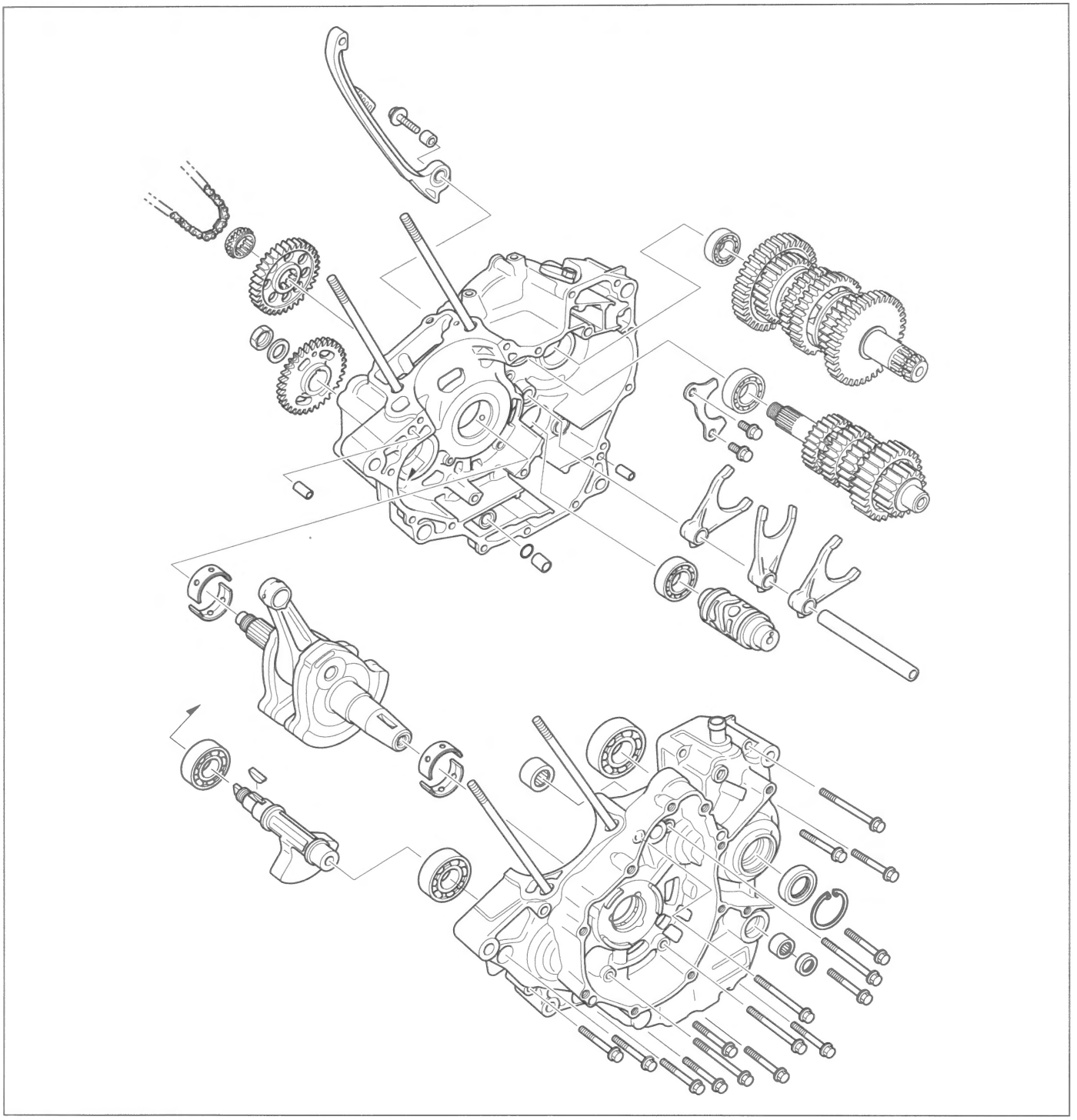


- Under cowl ➔3-7
- Drive sprocket cover ➔3-10
- Engine oil ➔2-15
- 1 Hold the flywheel with the special tool when removing the bolt.
  Holder fly wheel: 07725-0040001
- 2 Flywheel
  Outside screw puller: 07733-0020001
  (U.S.A. : 07933-2160000 (M16), 07933-3950000 (M20), 07933-3290001 (M22))
- 1 Clean any oil and grease from the crankshaft and flywheel contact area.

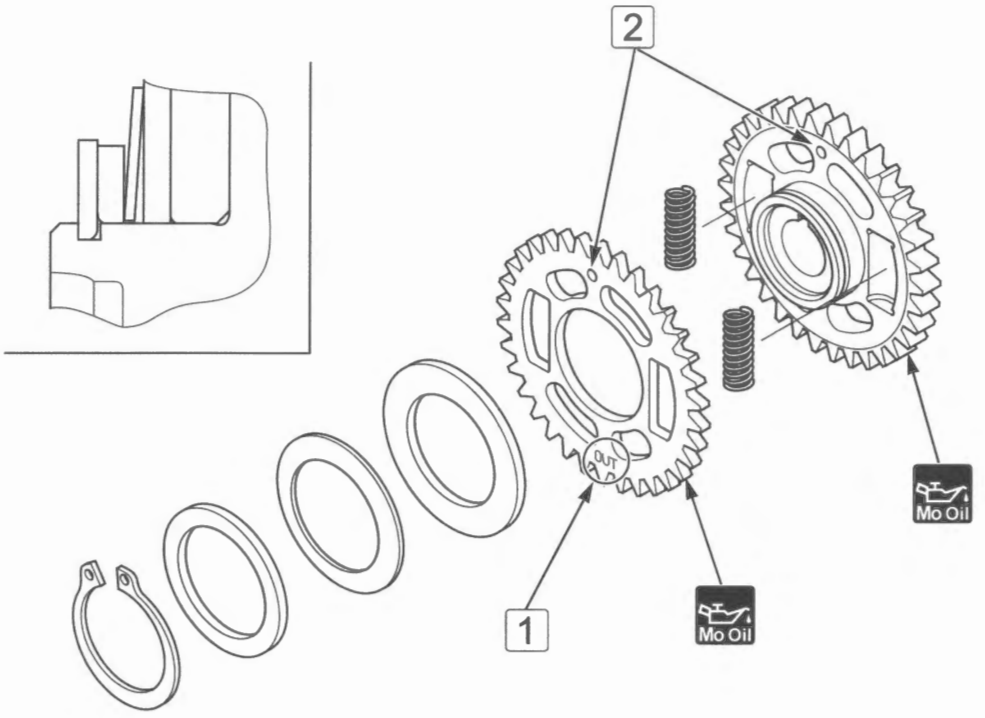


- Apply liquid sealant (Three bond 1207B, 1215 or equivalent) to the semicircular area.

CRANKCASE/CRANKSHAFT/BALANCER



- Engine ➔2-41
- Cylinder/piston ➔2-29
- Clutch/gearshift linkage ➔2-30
- Alternator/starter clutch ➔2-33
- Oil pump ➔2-16
- Gear position switch ➔4-35
- Starter motor ➔4-33
- Remove the crankcase bolts in a crisscross pattern in 2 – 3 steps.
- Place the crankcase with the right crankcase facing down and separate.

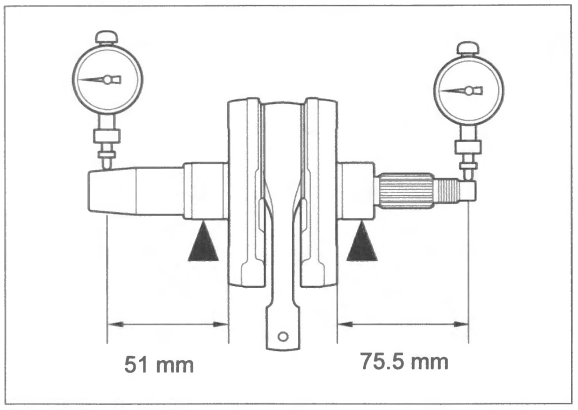


- 1 Install the balancer driven sub gear with the "OUT" mark facing out.
- 2 Align the holes of the balancer driven and sub gear.

Basic

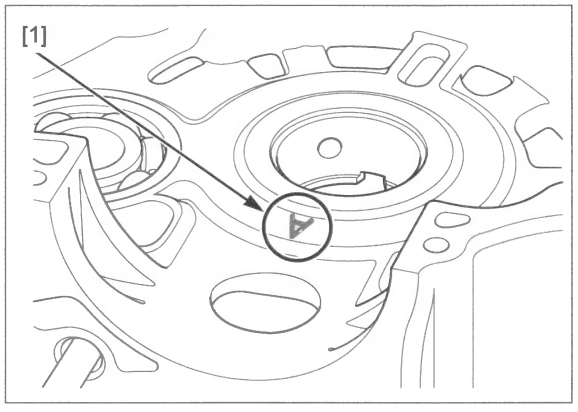
- Balancer inspection

CRANKSHAFT RUNOUT INSPECTION



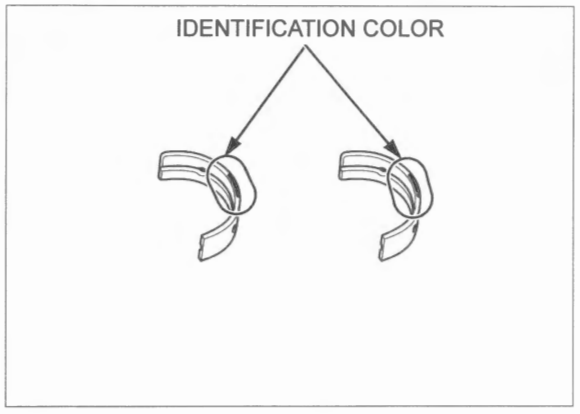
- Set the crankshaft on V-blocks and measure the runout using a dial indicator.
  SERVICE LIMIT: (L) 0.02 mm/(R) 0.03 mm

MAIN JOURNAL BEARING SELECTION



- Record the bearing support I.D. code letter [1].
- Letters A, B or C on each crankcase is the code for the crankcase main journal bearing support I.D.

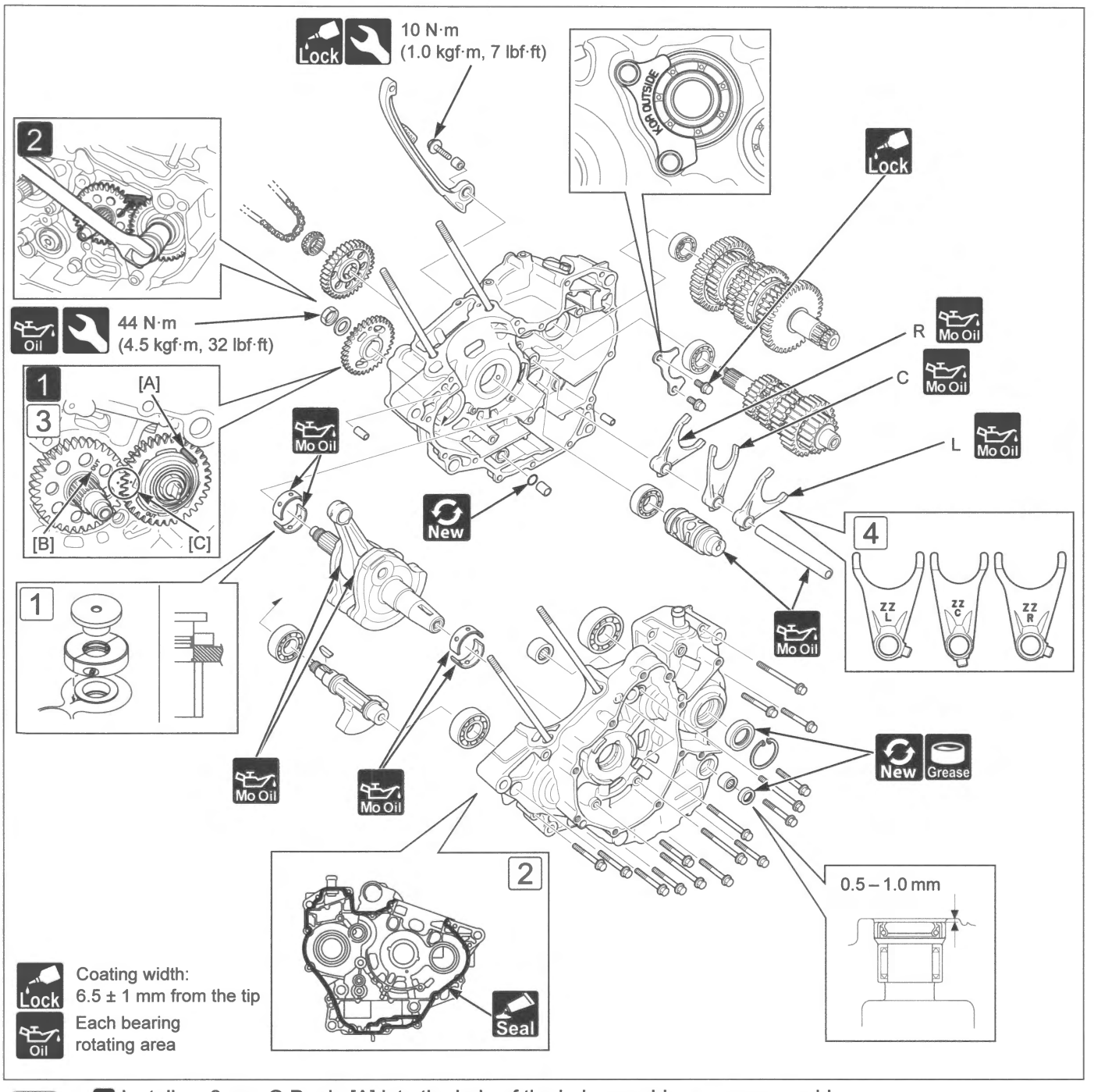
BEARING SUPPORT I.D. CODE (Crankcase replaced)	BEARING SUPPORT I.D.	MAIN JOURNAL O.D.	
		33.985 – 34.000 mm (Crankshaft replaced)	33.975 – 33.985 mm
A	38.000 – 38.006 mm	C (Brown) 1.996 – 1.999 mm	B (Black) 1.999 – 2.002 mm
B	38.006 – 38.012 mm	B (Black) 1.999 – 2.002 mm	A (Blue) 2.002 – 2.005 mm
C	38.012 – 38.018 mm	A (Blue) 2.002 – 2.005 mm	O.S. G (Pink) 2.005 – 2.008 mm
–	38.018 – 38.024 mm	O.S. G (Pink) 2.005 – 2.008 mm	O.S. F (Yellow) 2.008 – 2.011 mm
–	38.024 – 38.030 mm	O.S. F (Yellow) 2.008 – 2.011 mm	O.S. E (Green) 2.011 – 2.014 mm
–	38.030 – 38.036 mm	O.S. E (Green) 2.011 – 2.014 mm	O.S. D (Red) 2.014 – 2.017 mm



BEARING THICKNESS:

O.S. D (Red):	Thick
O.S. E (Green):	↑
O.S. F (Yellow):	
O.S. G (Pink):	Middle
A (Blue):	↓
B (Black):	
C (Brown):	Thin

- After selecting new bearings, recheck the clearance. Incorrect clearance can cause severe engine damage.



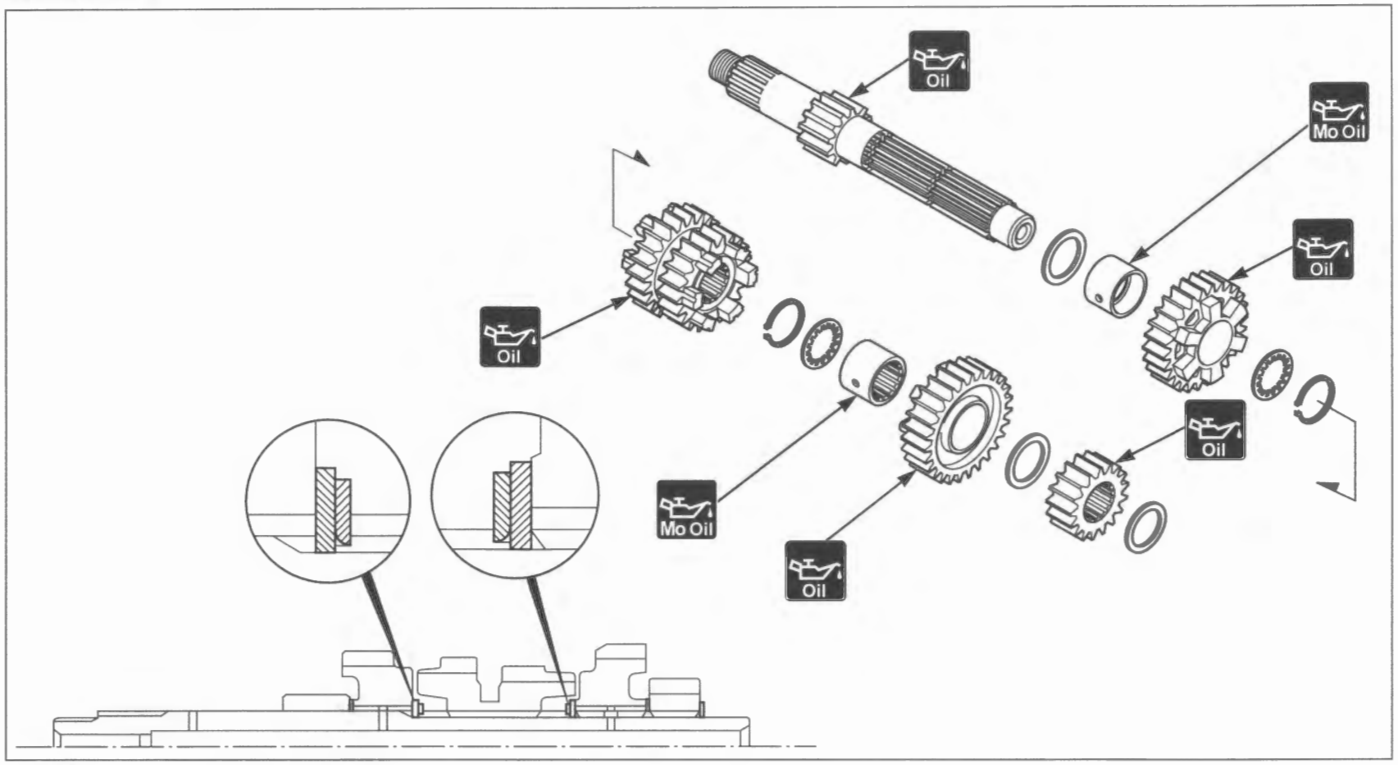
- 1 Install an 3 mm O.D. pin [A] into the hole of the balancer driven gear assembly.
- 2 Insert the gear holder between the balancer drive gear and balancer driven gear assembly.
  Gear holder M2.5 mm: 07724-0010100 (U.S.A. : 07724-001A100)

- 1 Set the bearings and special tools assembly on the inside of the crankcase, fitting the bearing edge in the crankcase main journal. Align the mating line of the bearings with the index mark on the crankcase as shown.
  Metal installer set: 070MF-KYJ0100 (U.S.A. : 070MF-KYJA100)
- 2 Apply sealant (Three bond 1207B, 1215 or equivalent) to the left crankcase mating surface except the oil passage area.
- 3 Install an 3 mm O.D. pin [A] into the hole of the balancer driven gear assembly.
  Install the balancer drive gear with the "OUT" mark [B] facing out. Align the punch marks [C] of the balancer drive gear and balancer driven gear.
- 4 Each shift fork has an identification mark.

Basic
- Crankshaft inspection
- Connecting rod inspection
- Shift fork/shift drum/drum journal inspection

TRANSMISSION

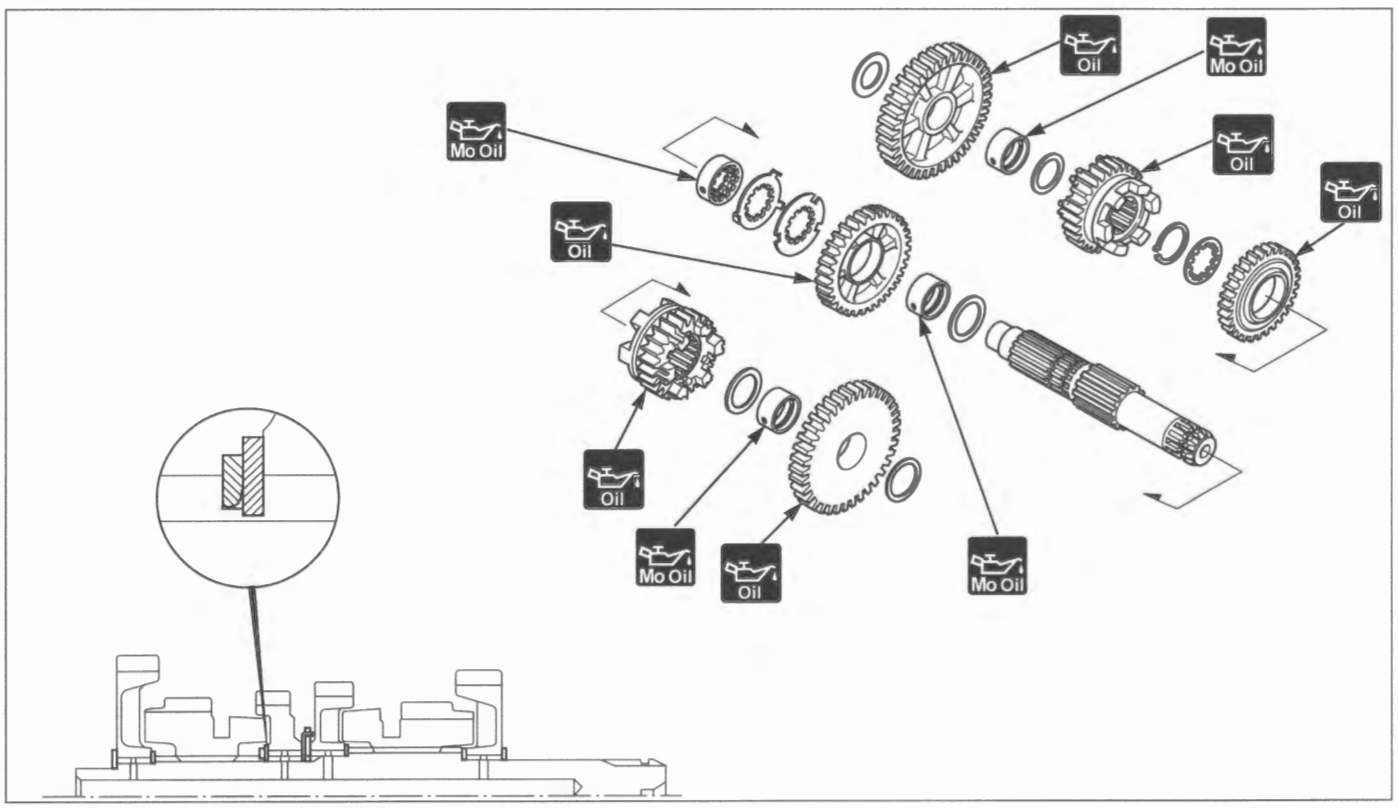
MAINSHAFT



Basic

- Transmission inspection

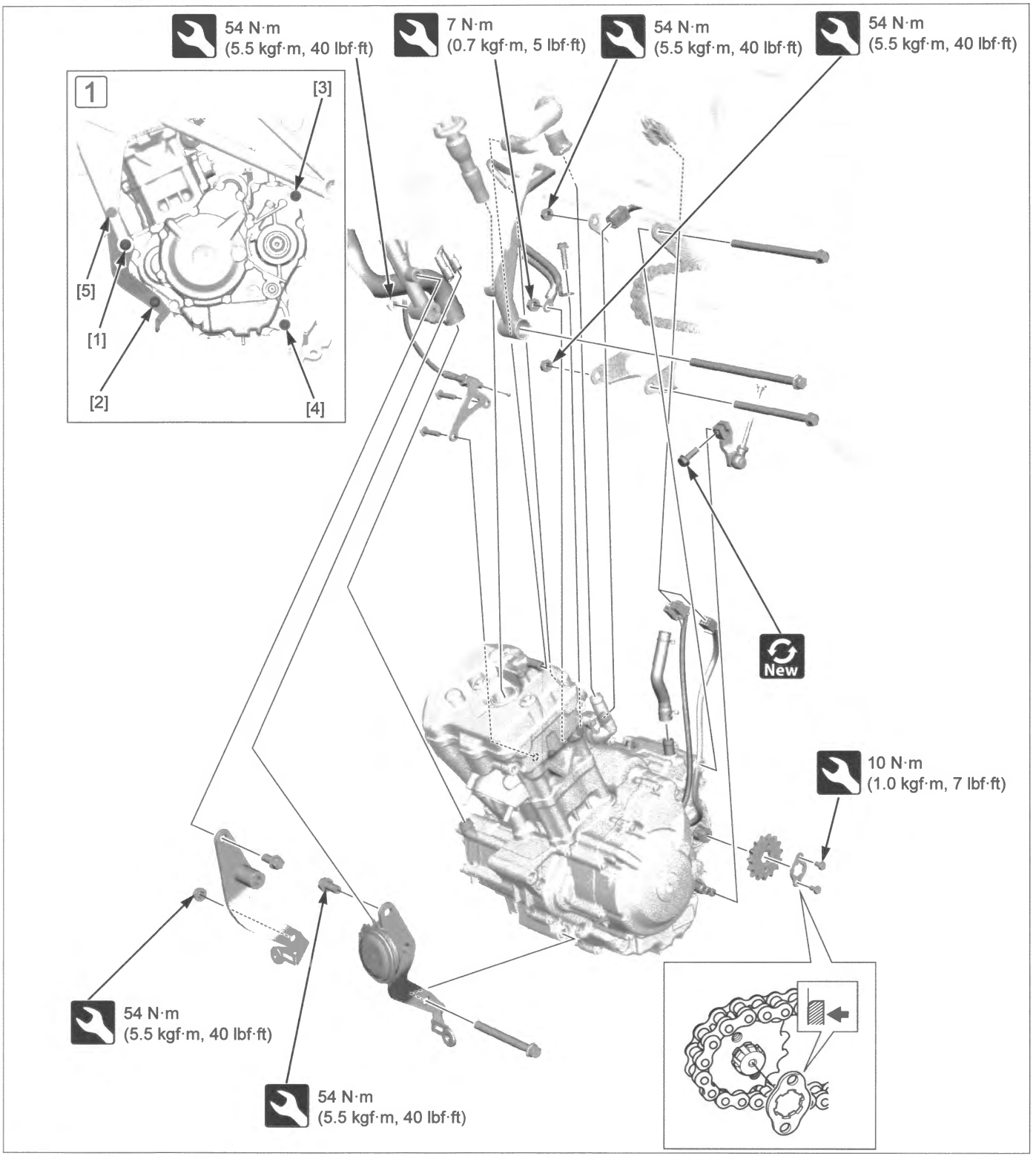
COUNTERSHAFT



Basic

- Transmission inspection

ENGINE UNIT



- Coolant ➔2-17
- Throttle body ➔2-8
- Exhaust pipe/muffler ➔3-16
- Drive sprocket cover ➔3-10

- [1] Loosely install all the engine fastener in the order of [1] to [5], then tighten them with the specified torque in order of [1] to [5].

MEMO

3. FRAME & CHASSIS

BODY PANELS 3-2

SIDESTAND 3-15

EXHAUST PIPE/MUFFLER 3-16

FRONT WHEEL 3-17

FORK 3-19

HANDLEBAR 3-22

STEERING STEM 3-24

DRIVE CHAIN 3-26

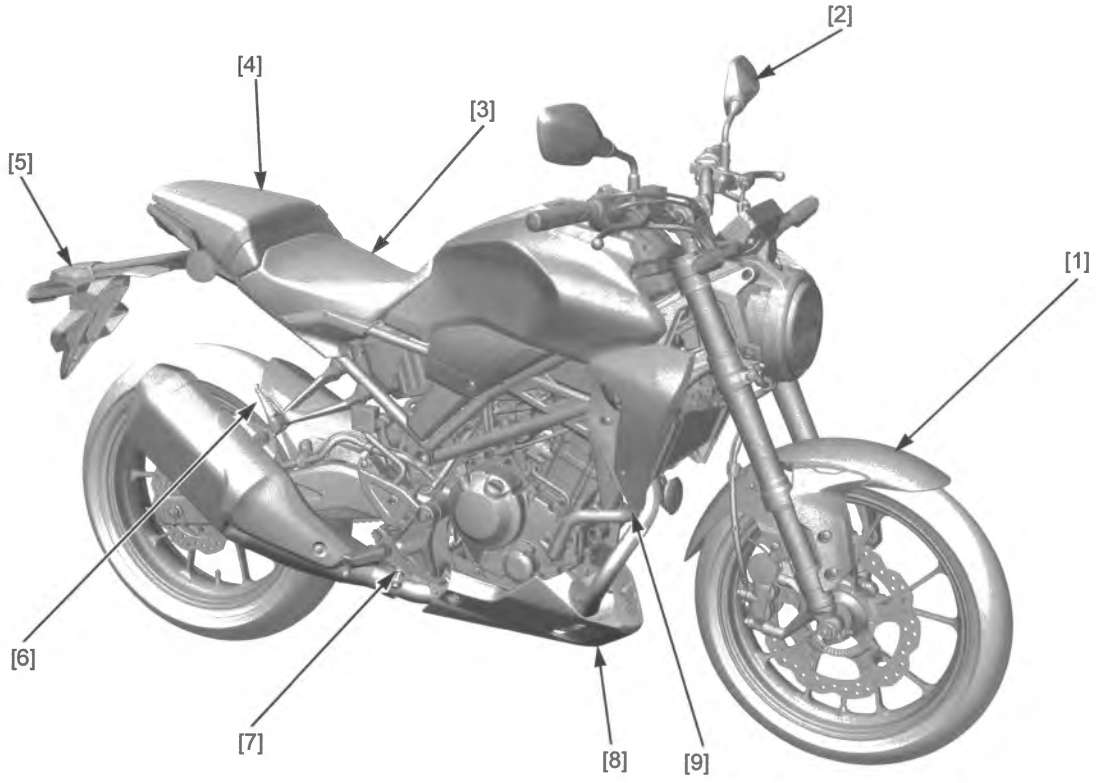
REAR WHEEL 3-26

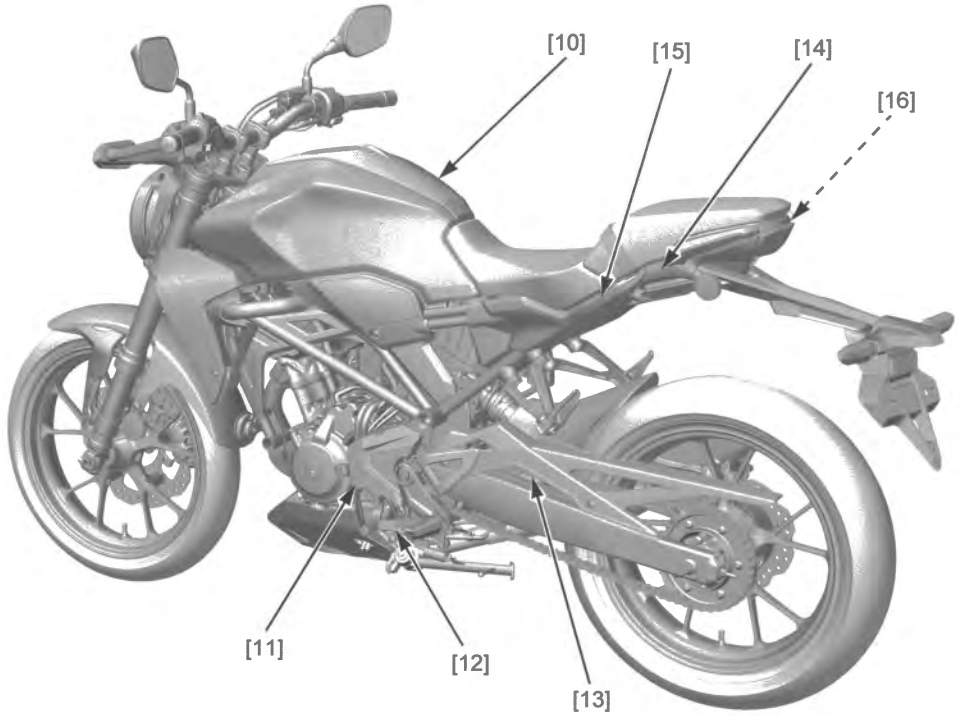
REAR SUSPENSION 3-28

FRONT BRAKE 3-29

REAR BRAKE 3-32

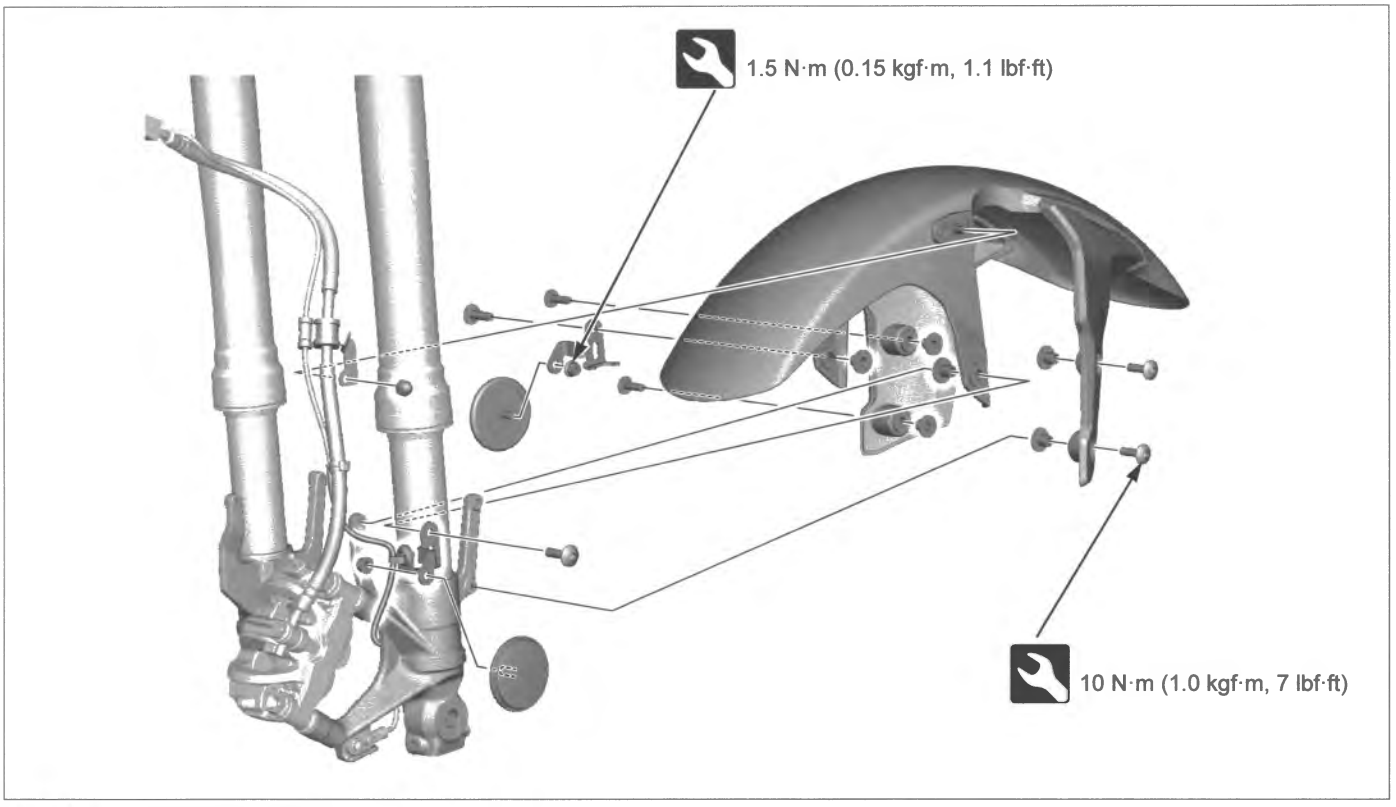
BODY PANELS





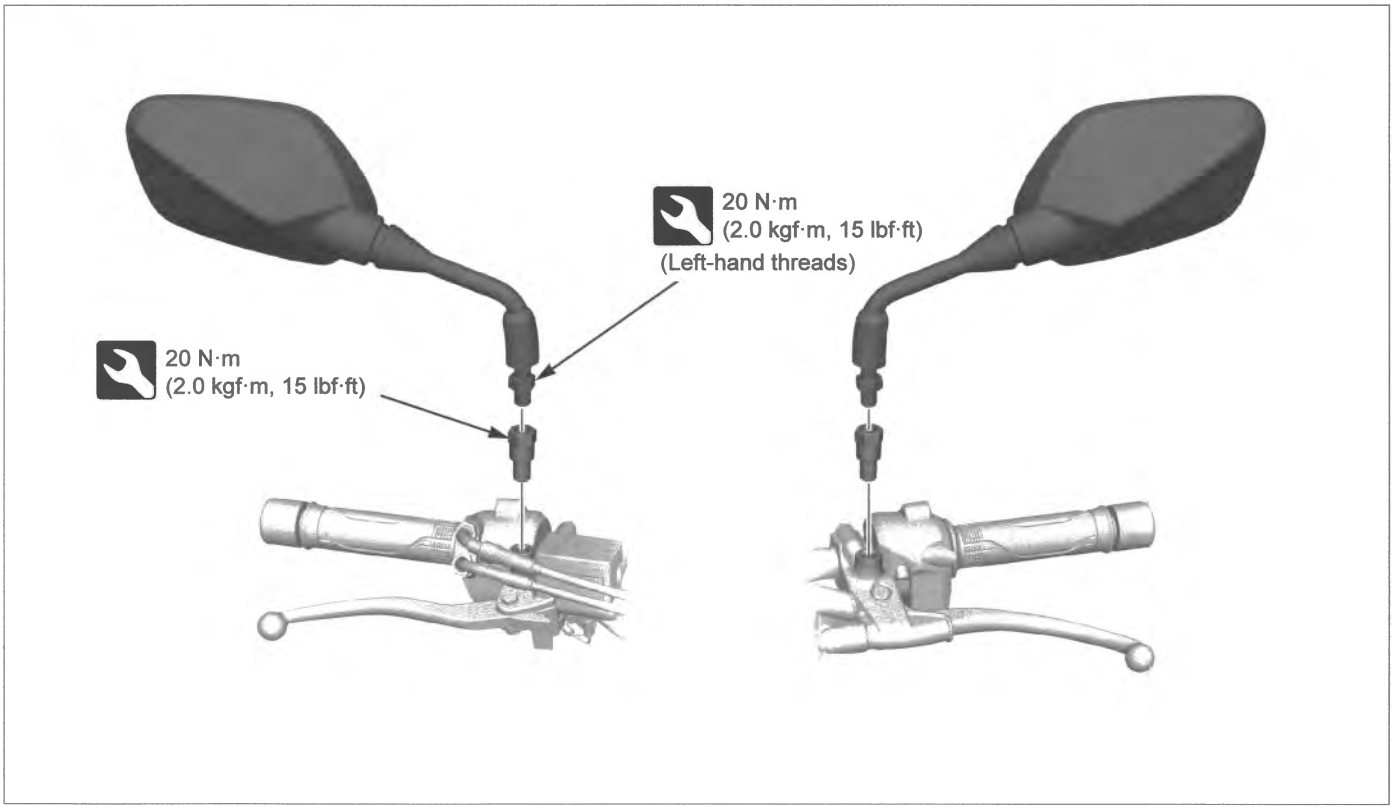
[1] Front fender ➔3-3
[2] Rearview mirror ➔3-3
[3] Main seat ➔3-4
[4] Passenger seat ➔3-4
[5] Rear fender A ➔3-5
[6] Passenger step ➔3-6
[7] Brake pedal ➔3-6
[8] Under cowl ➔3-7
[9] Radiator cover ➔3-8
[10] Fuel tank cover ➔3-9
[11] Drive sprocket cover ➔3-10
[12] Gearshift pedal ➔3-11
[13] Drive chain case ➔3-12
[14] Rear fender B ➔3-13
[15] Rear cowl ➔3-14
[16] Seat lock ➔3-14

FRONT FENDER

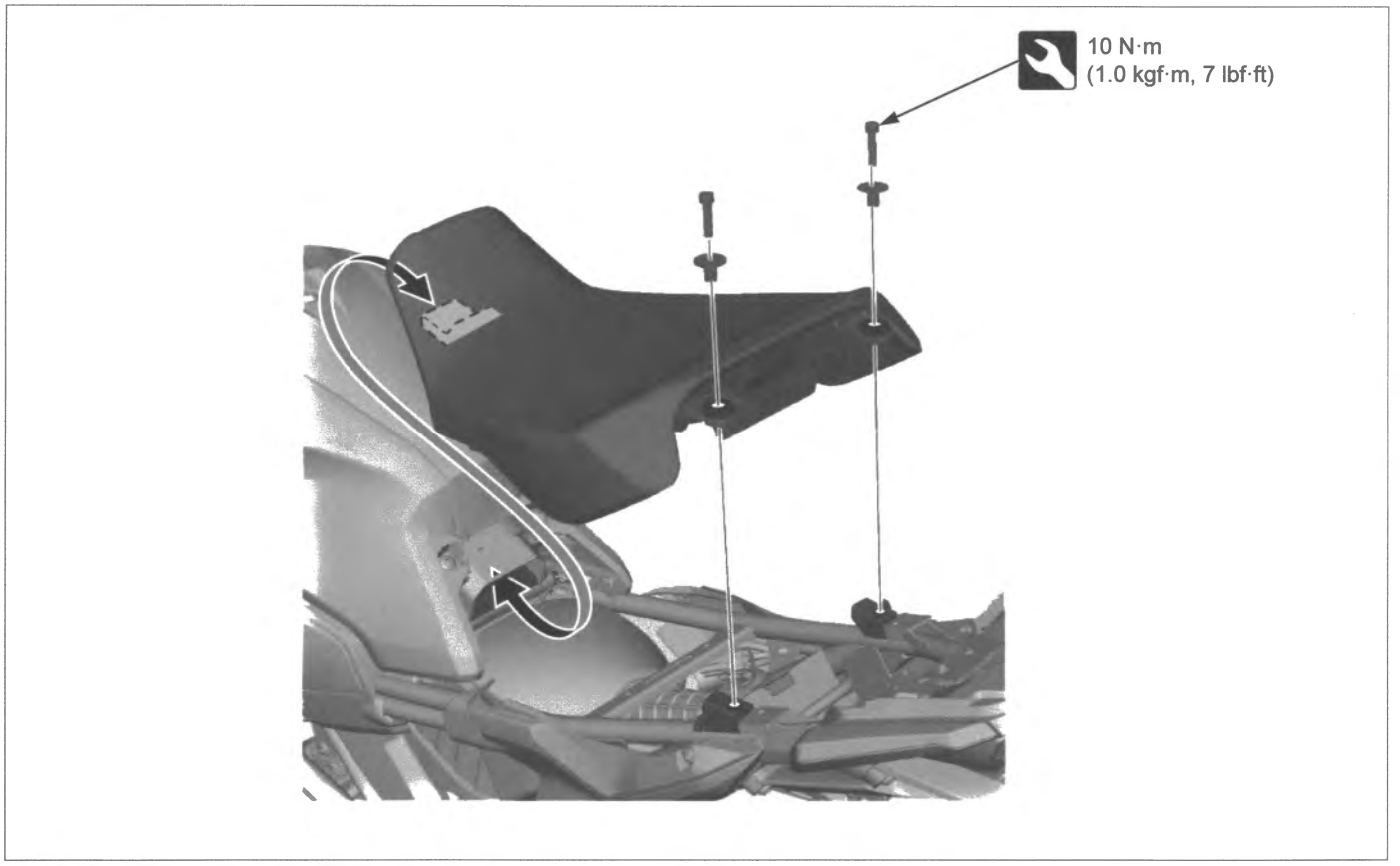


- Front wheel ➔3-17

REARVIEW MIRROR

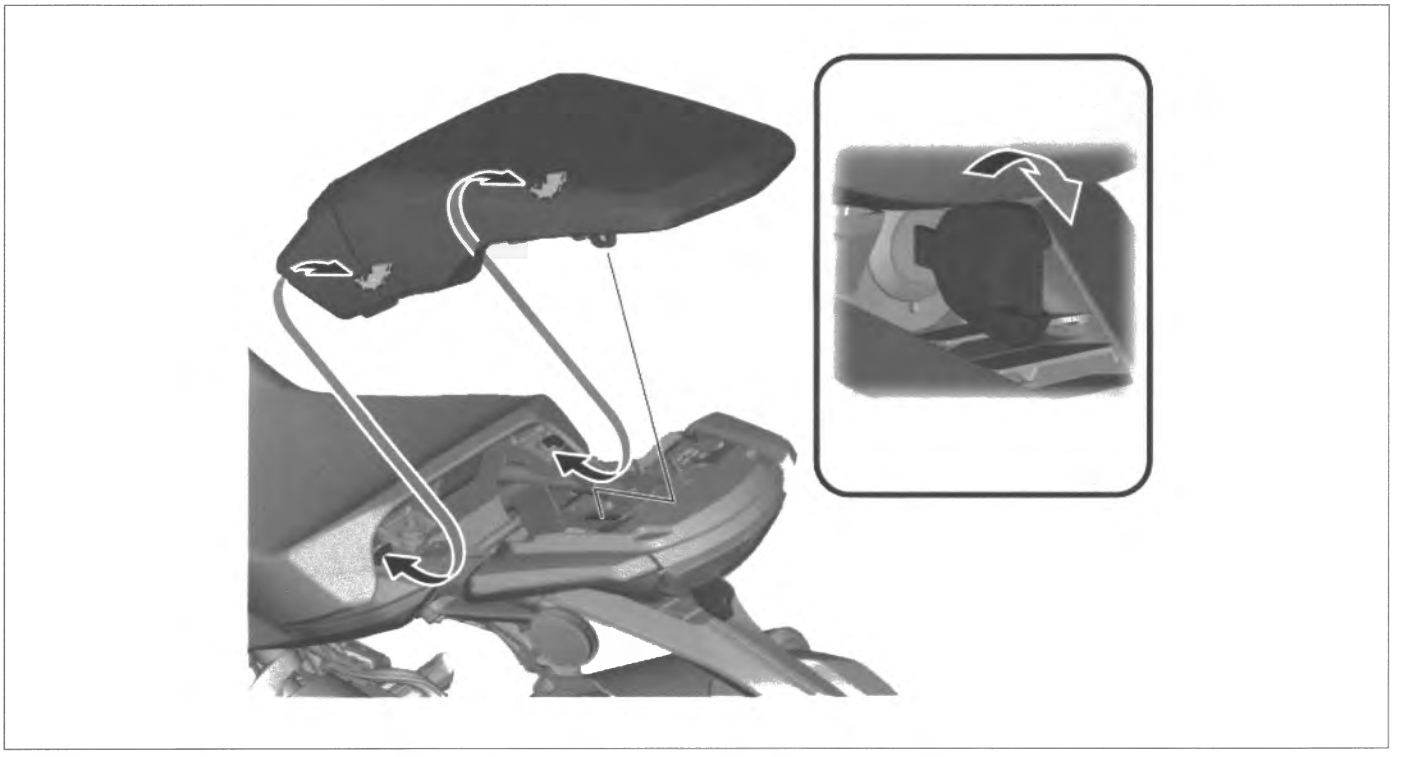


MAIN SEAT

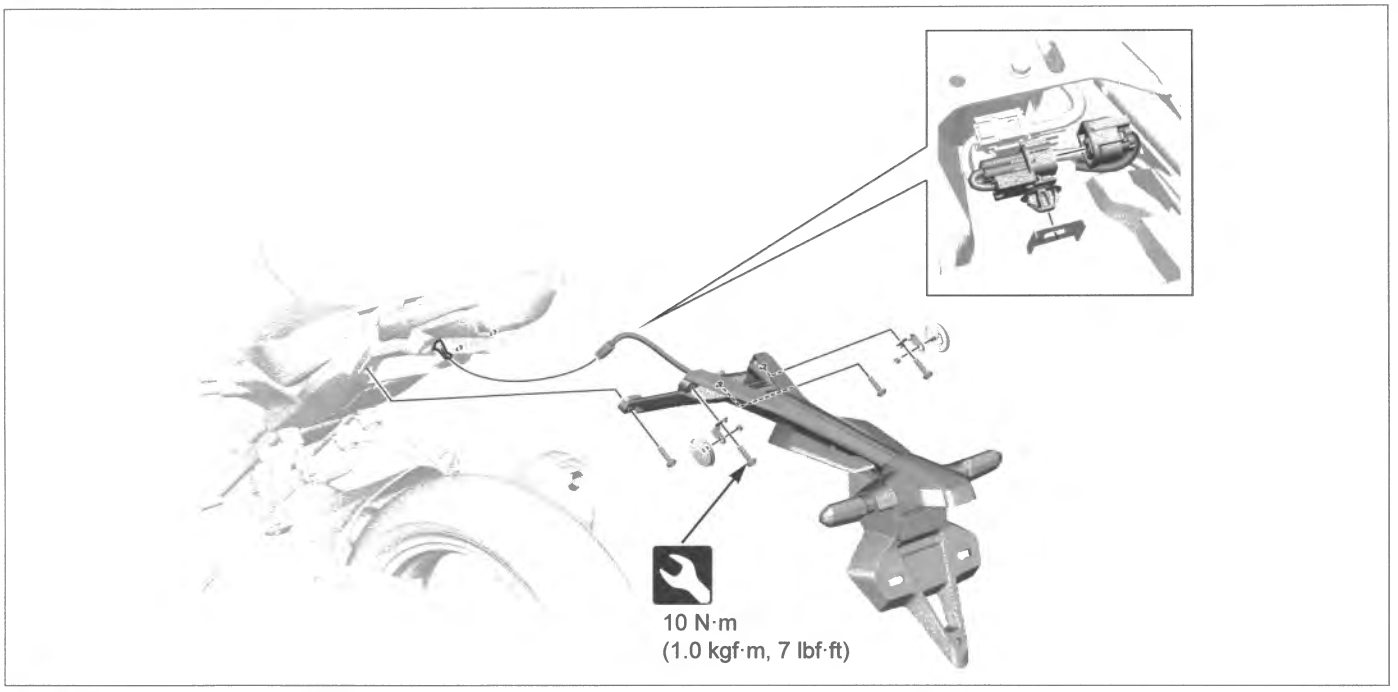


- Passenger seat ➔3-4

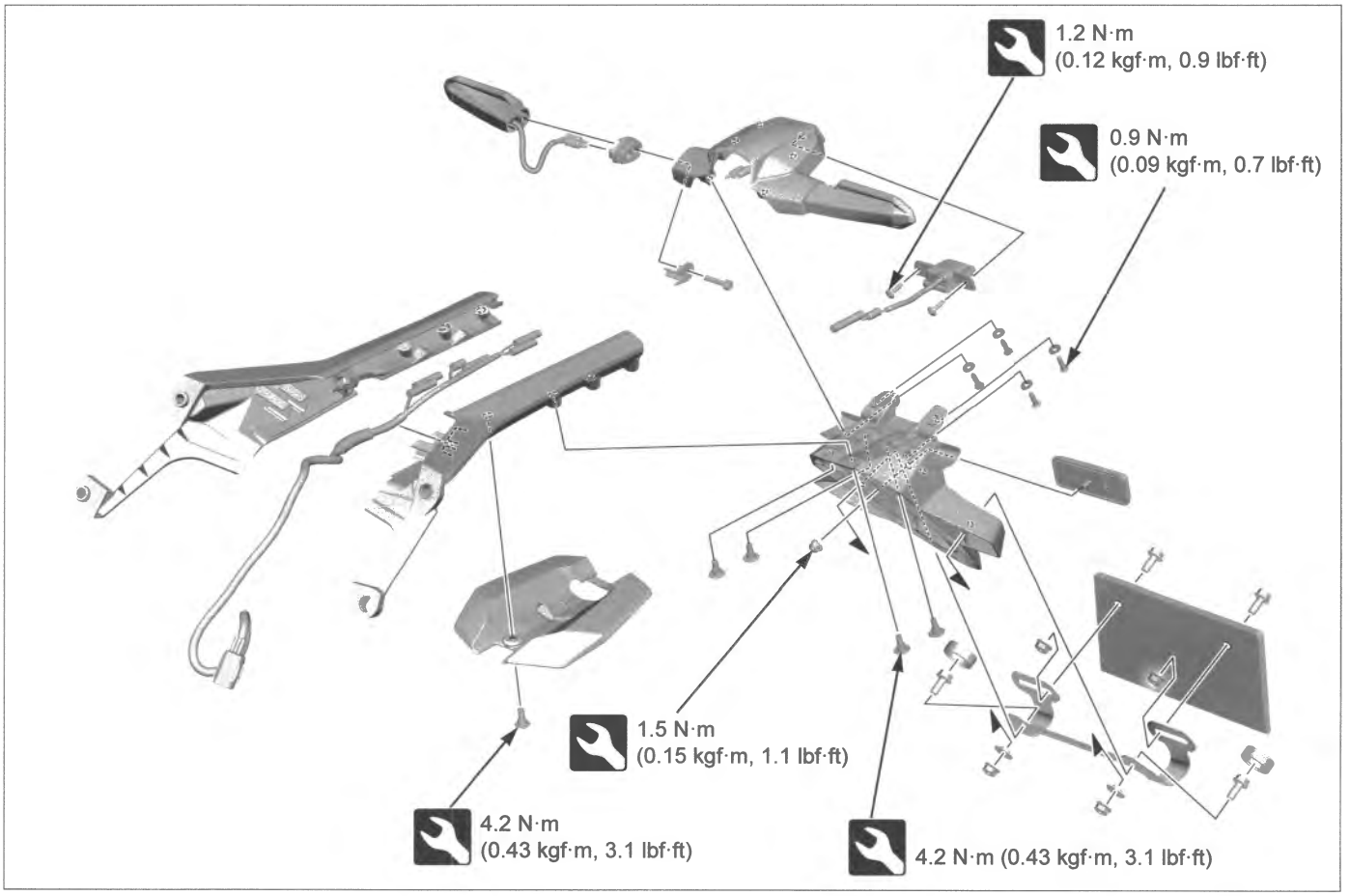
PASSENGER SEAT



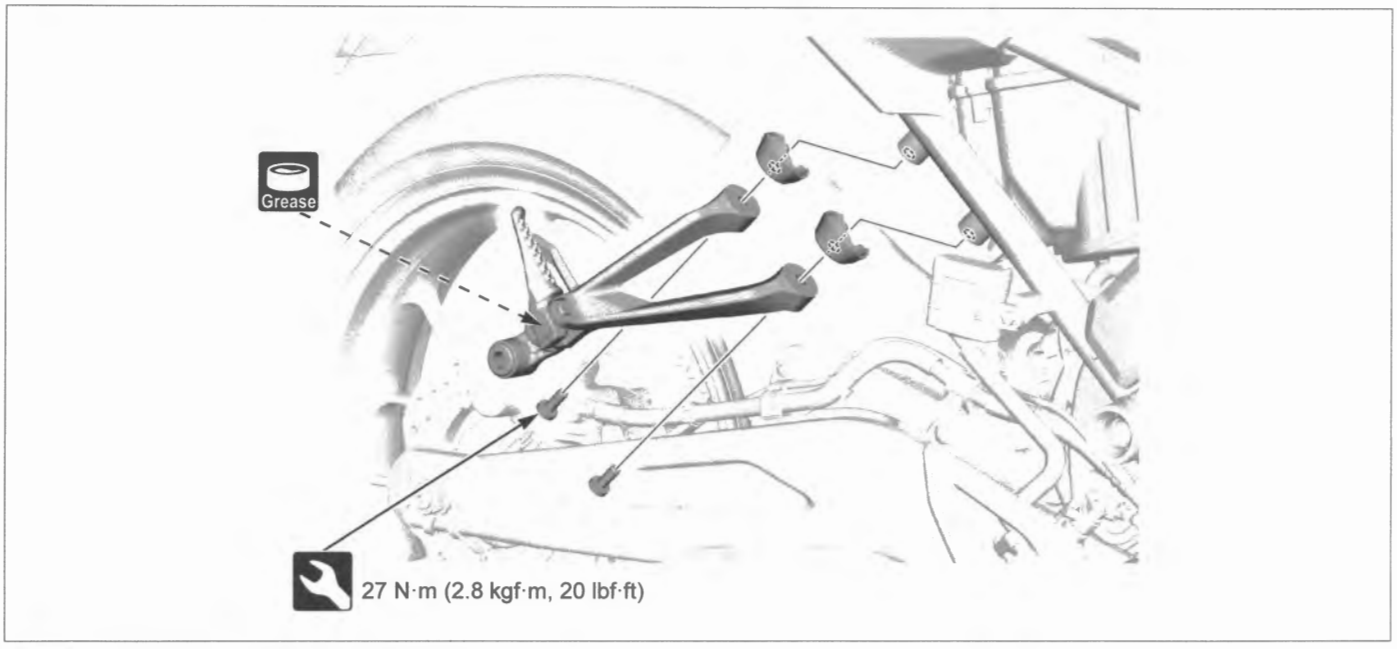
REAR FENDER A



- Passenger seat ➔3-4

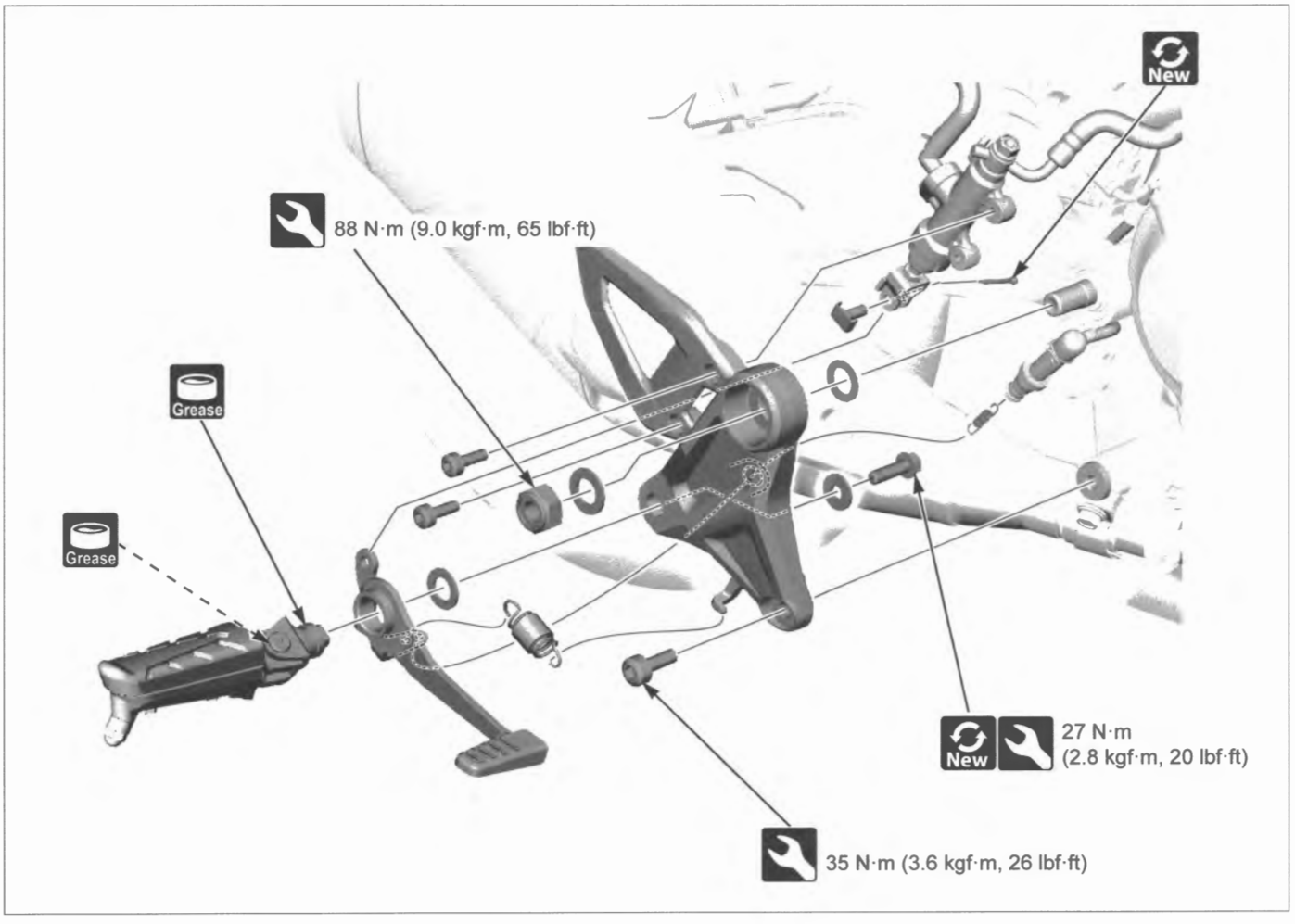


PASSENGER STEP

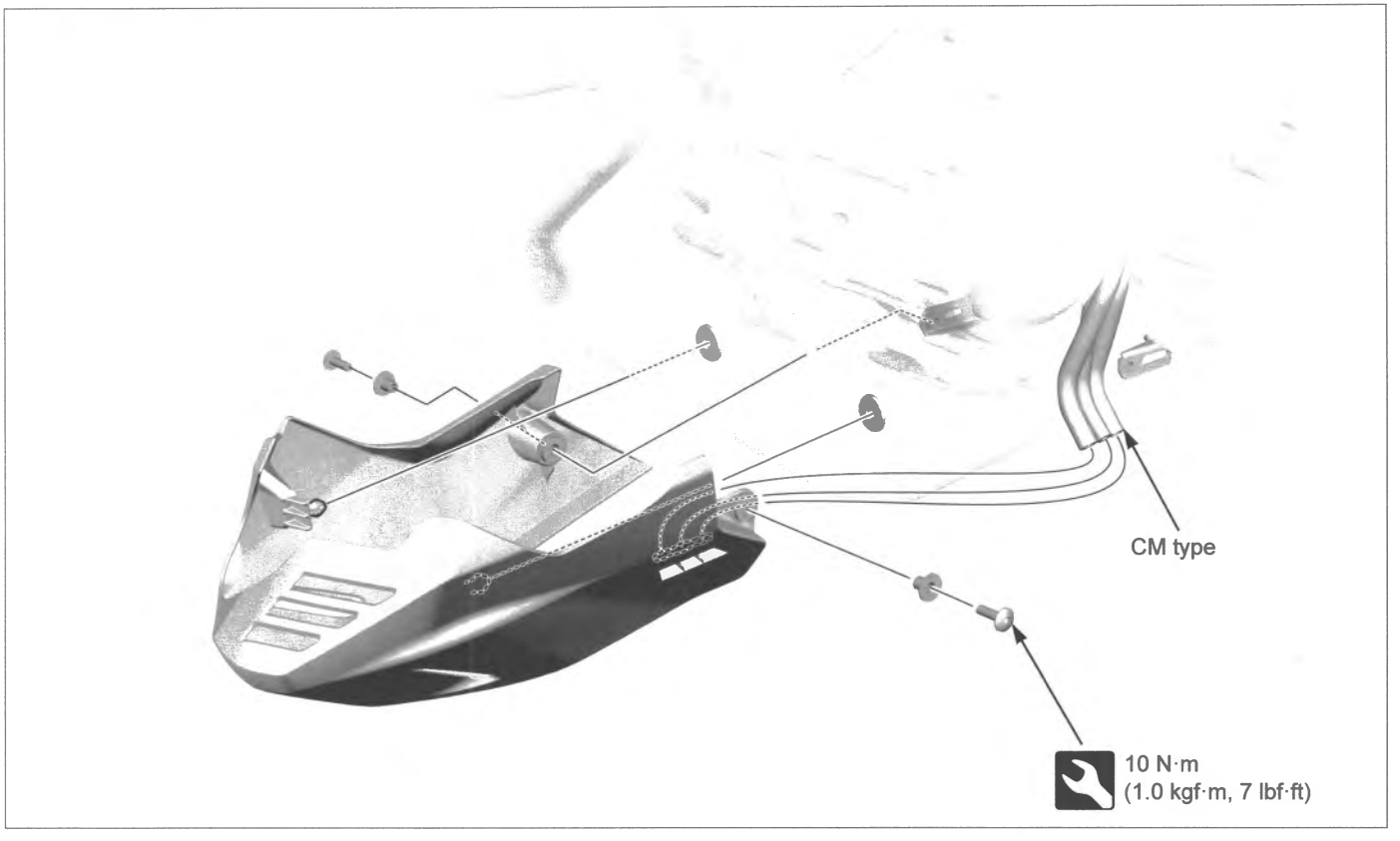


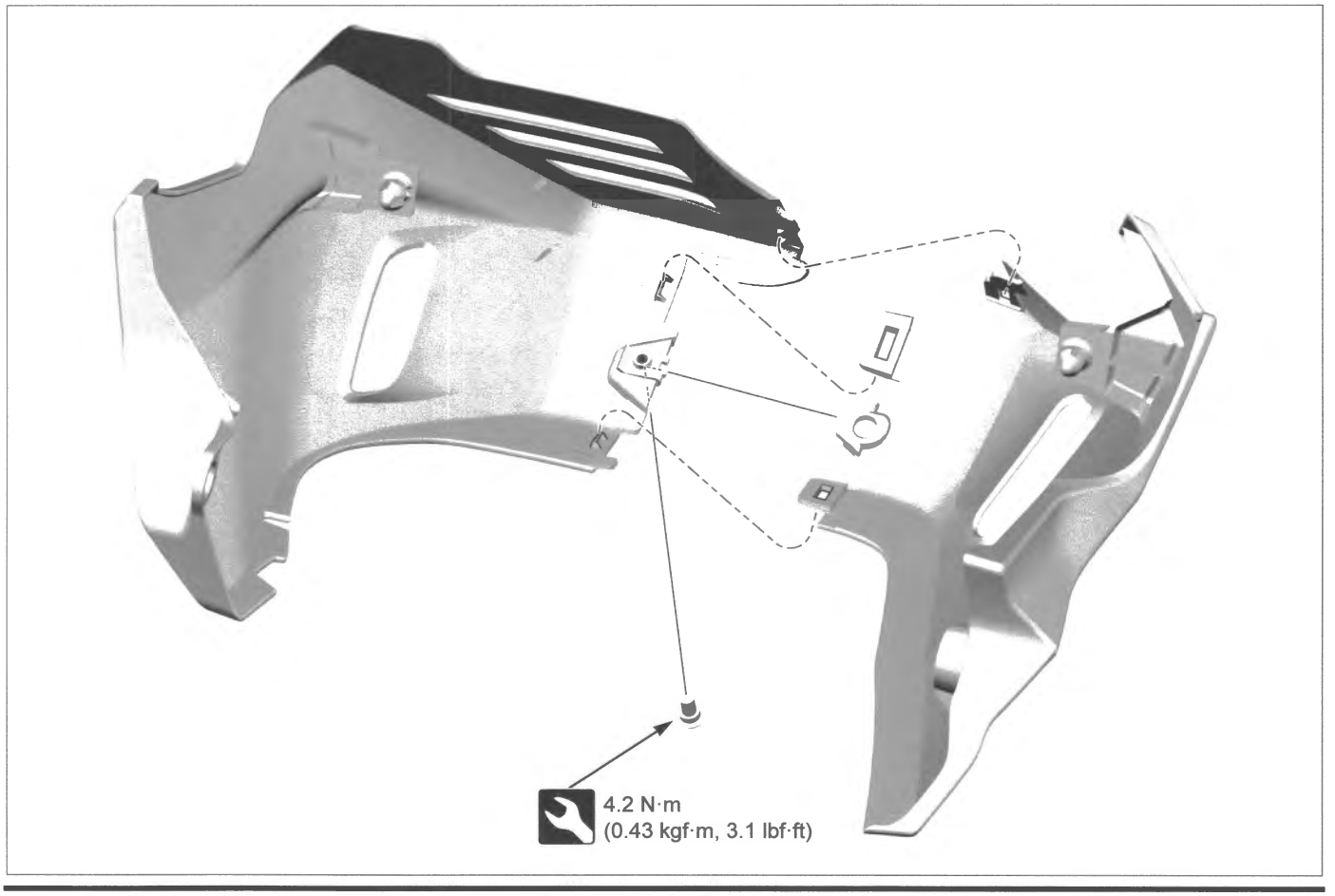
- Exhaust pipe/muffler ➔3-16

BRAKE PEDAL

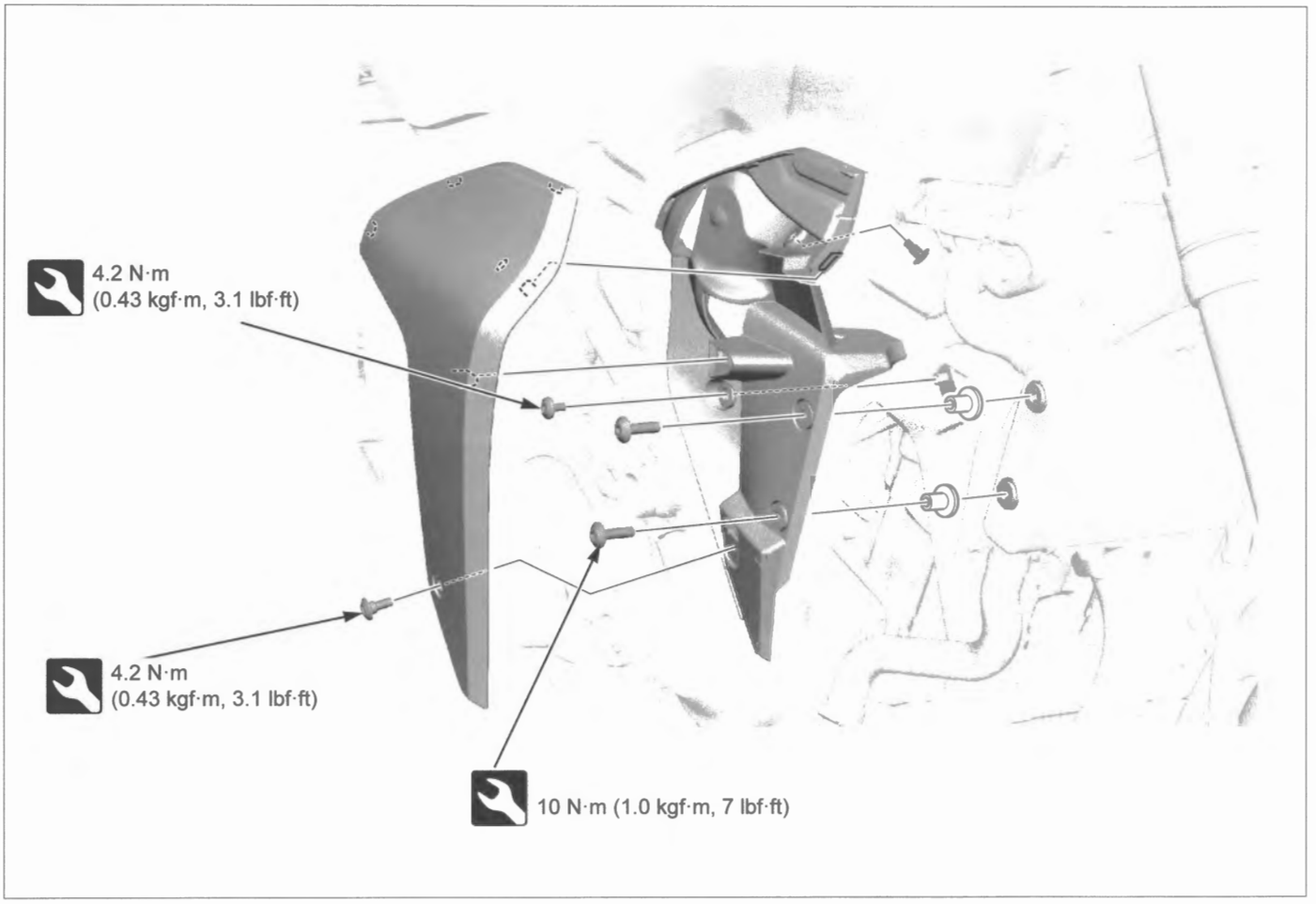


UNDER COWL

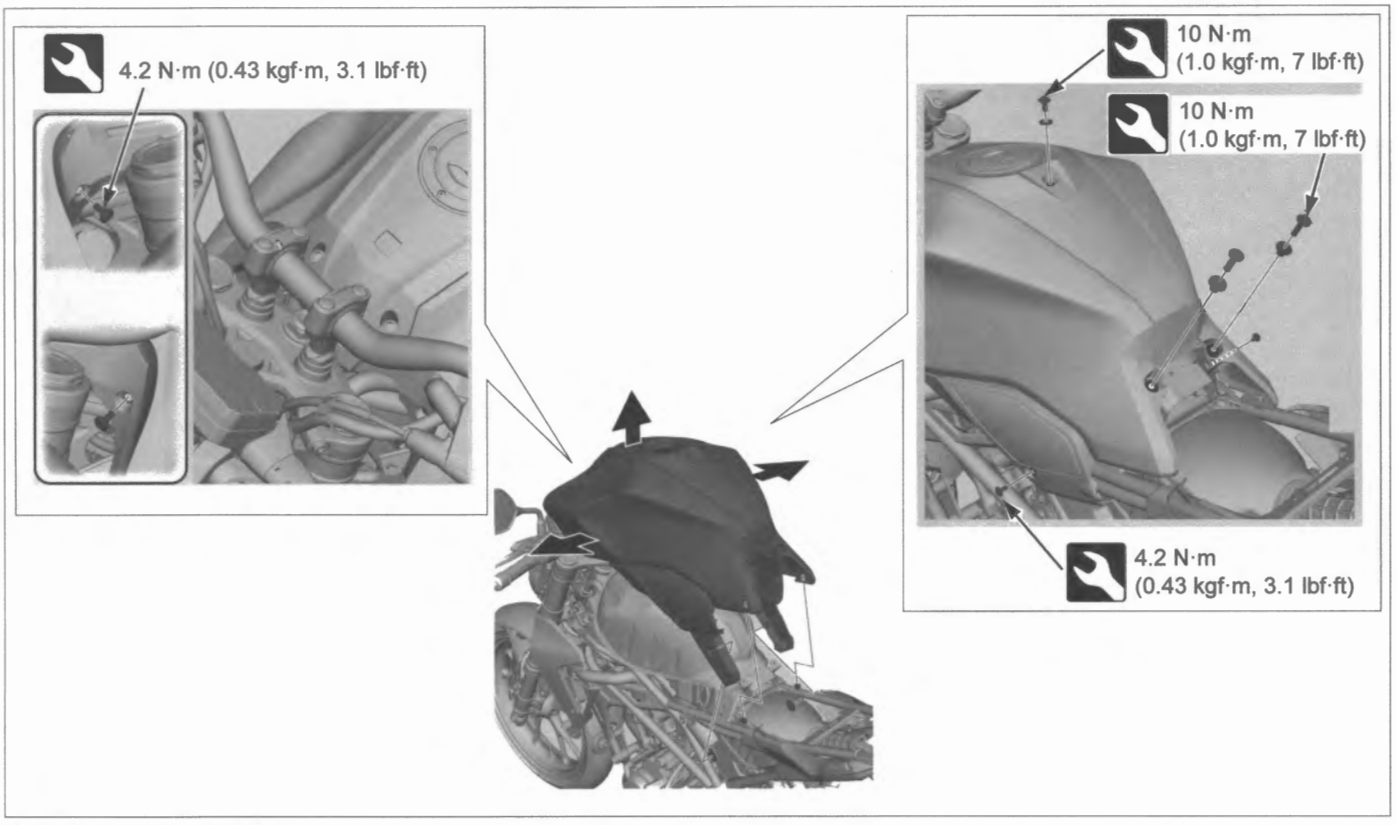




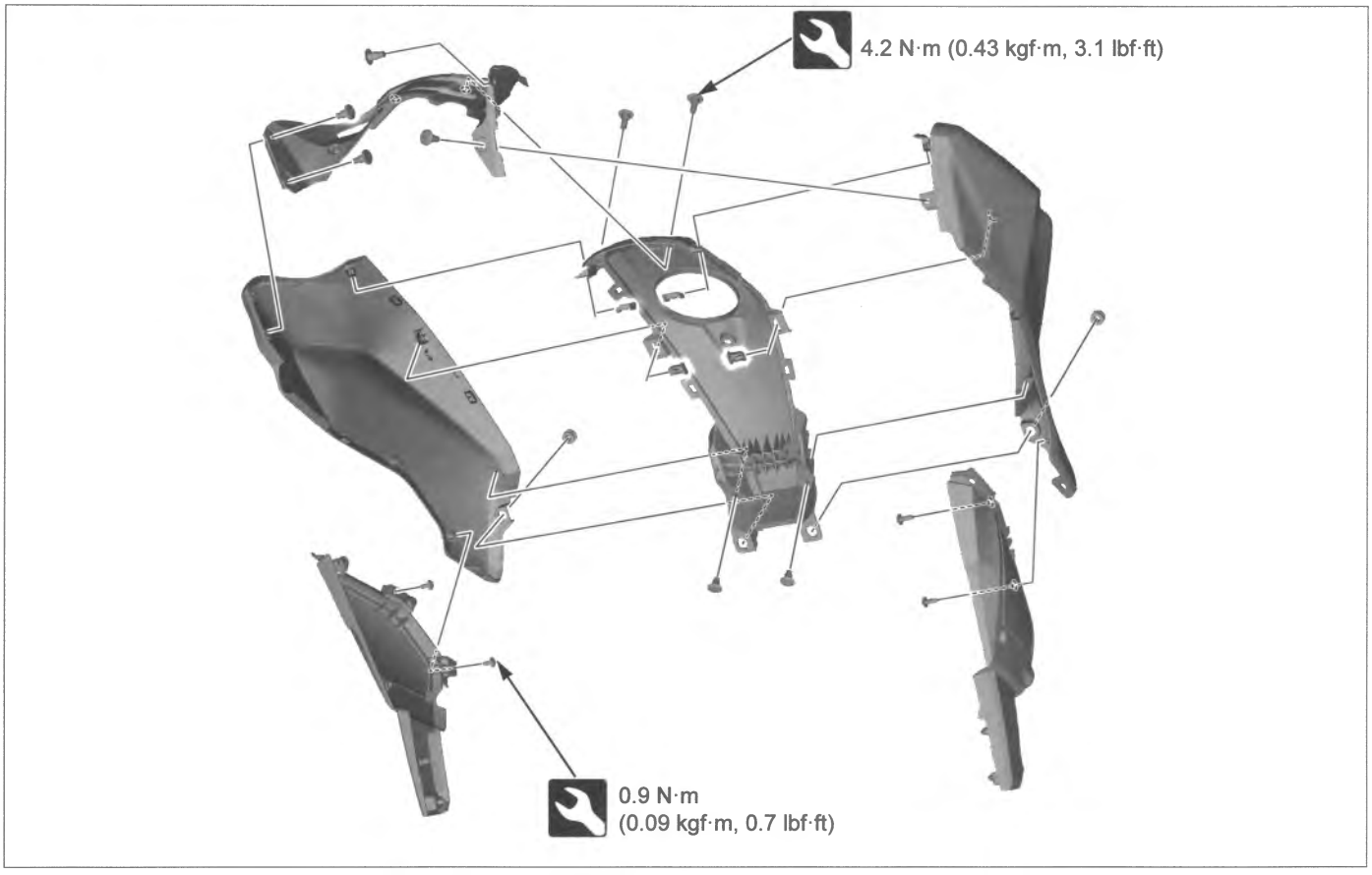
RADIATOR COVER



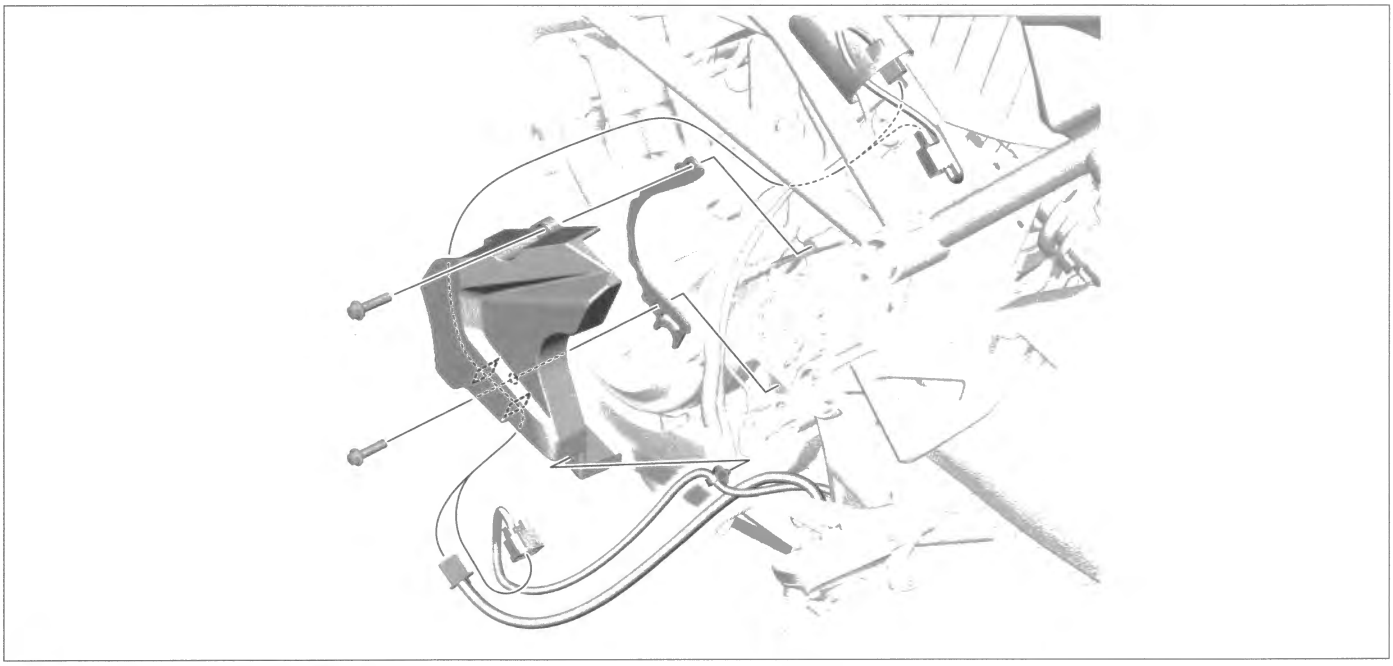
FUEL TANK COVER



- Main seat ➔3-4

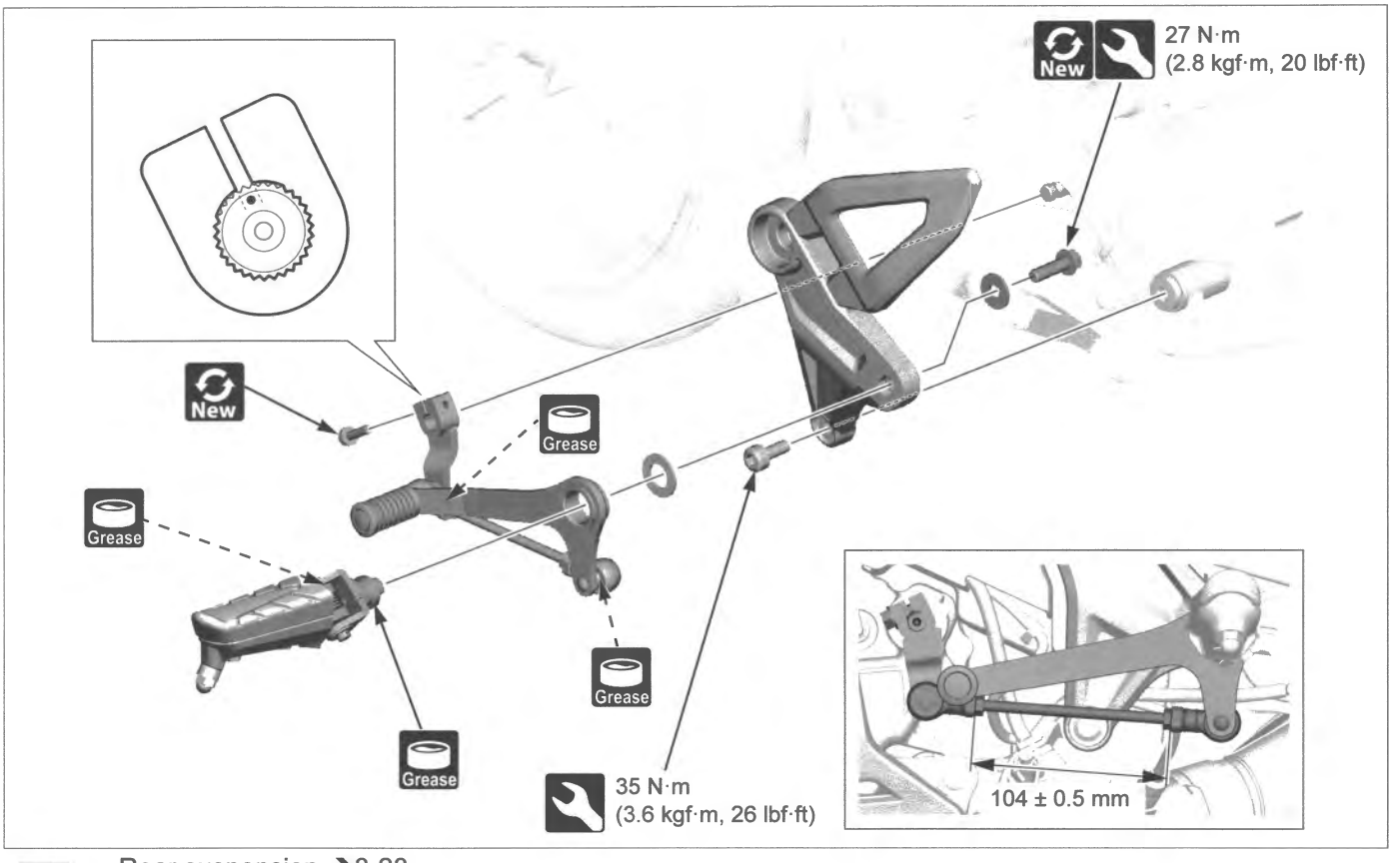


DRIVE SPROCKET COVER



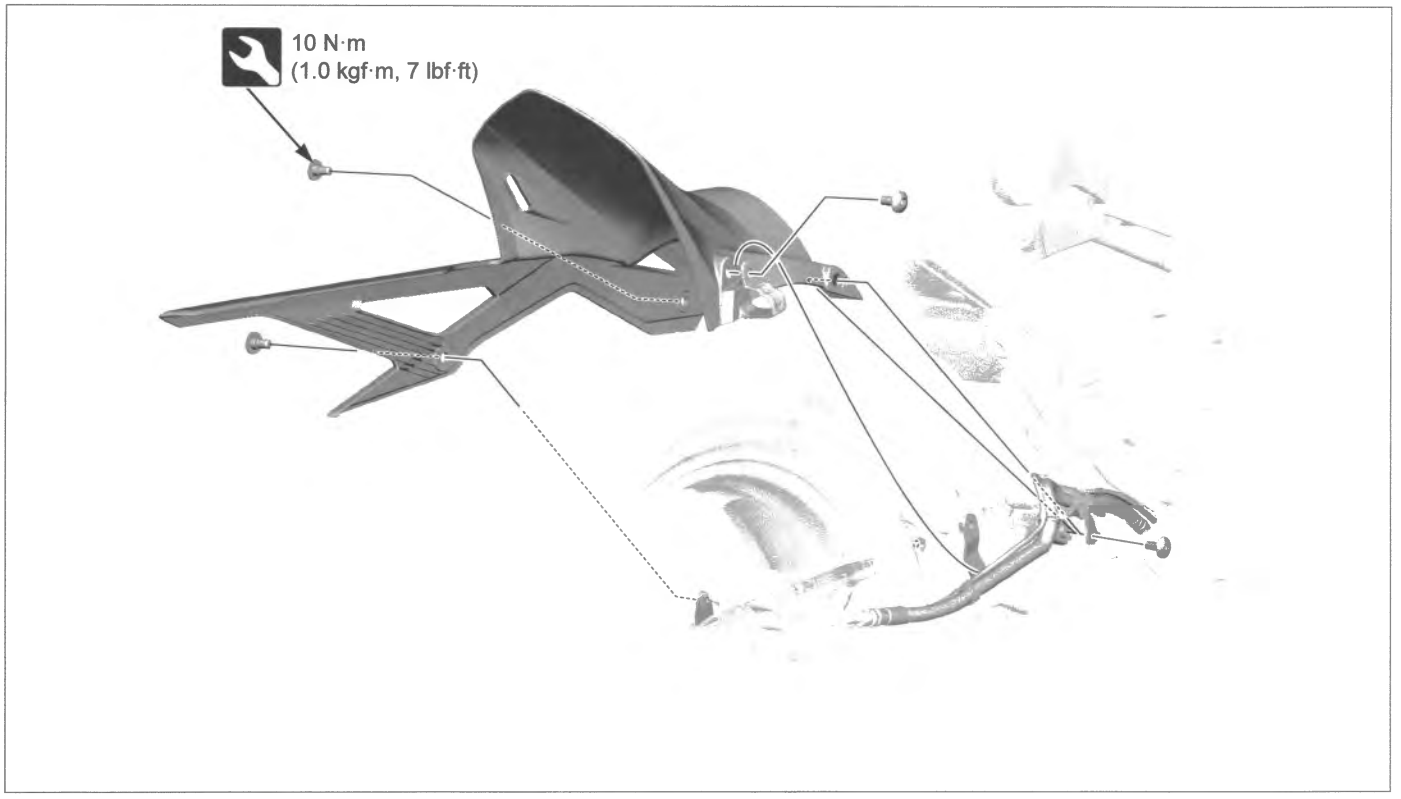
- Fuel tank cover ➔3-9

GEARSHIFT PEDAL

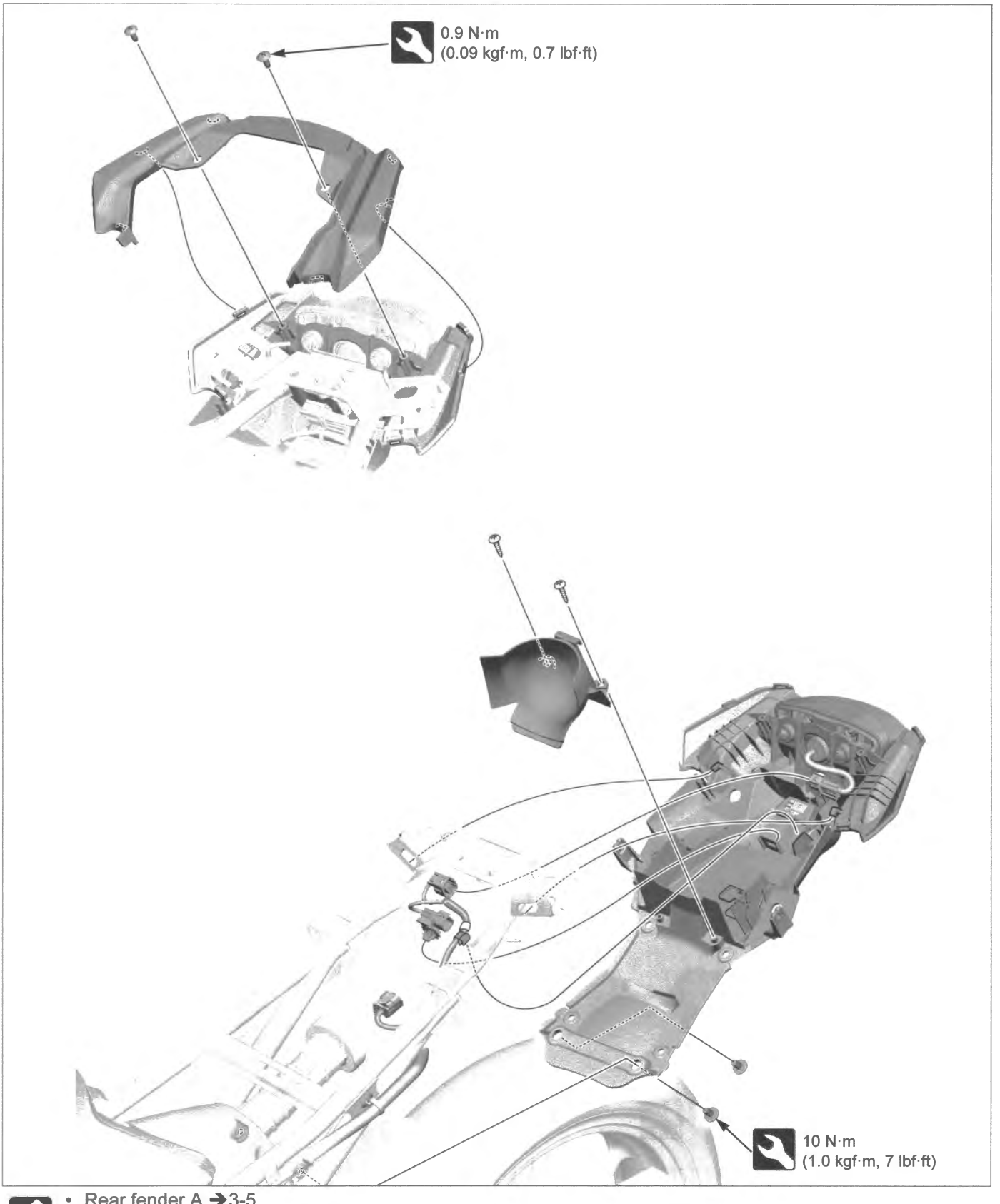


- Rear suspension ➔3-28

DRIVE CHAIN CASE

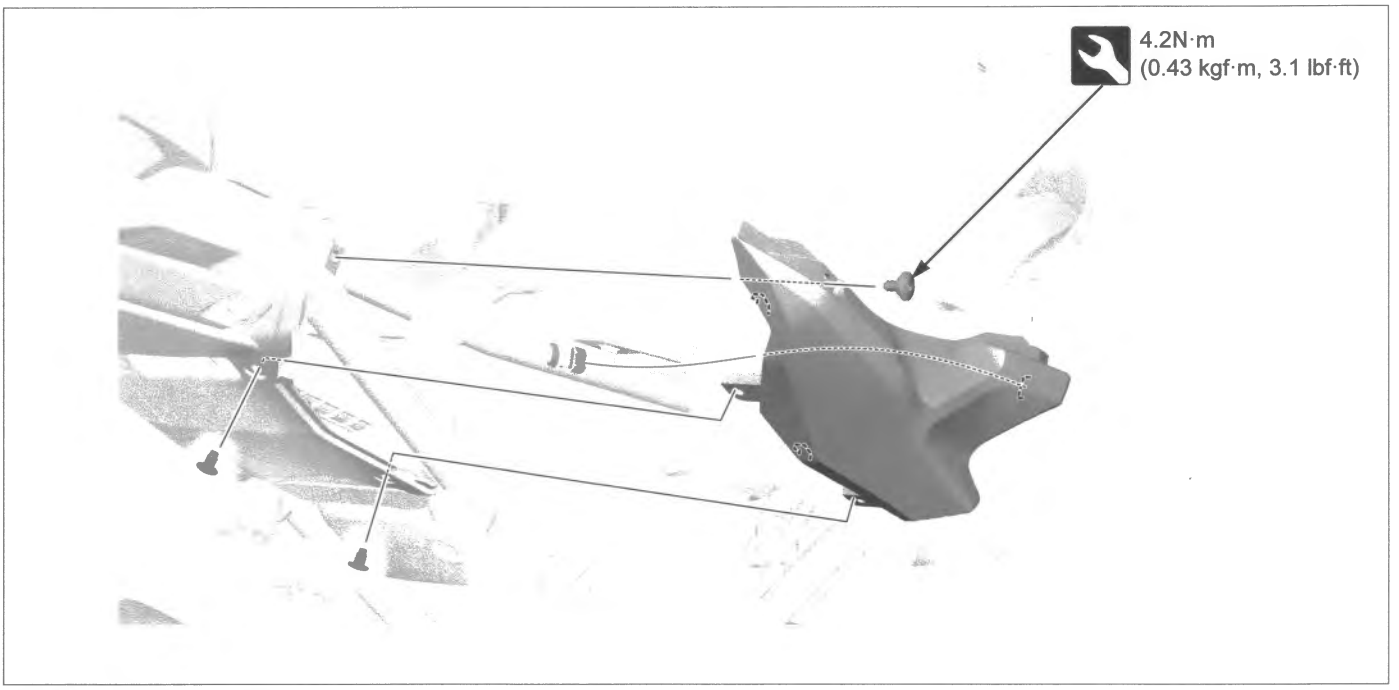


REAR FENDER B



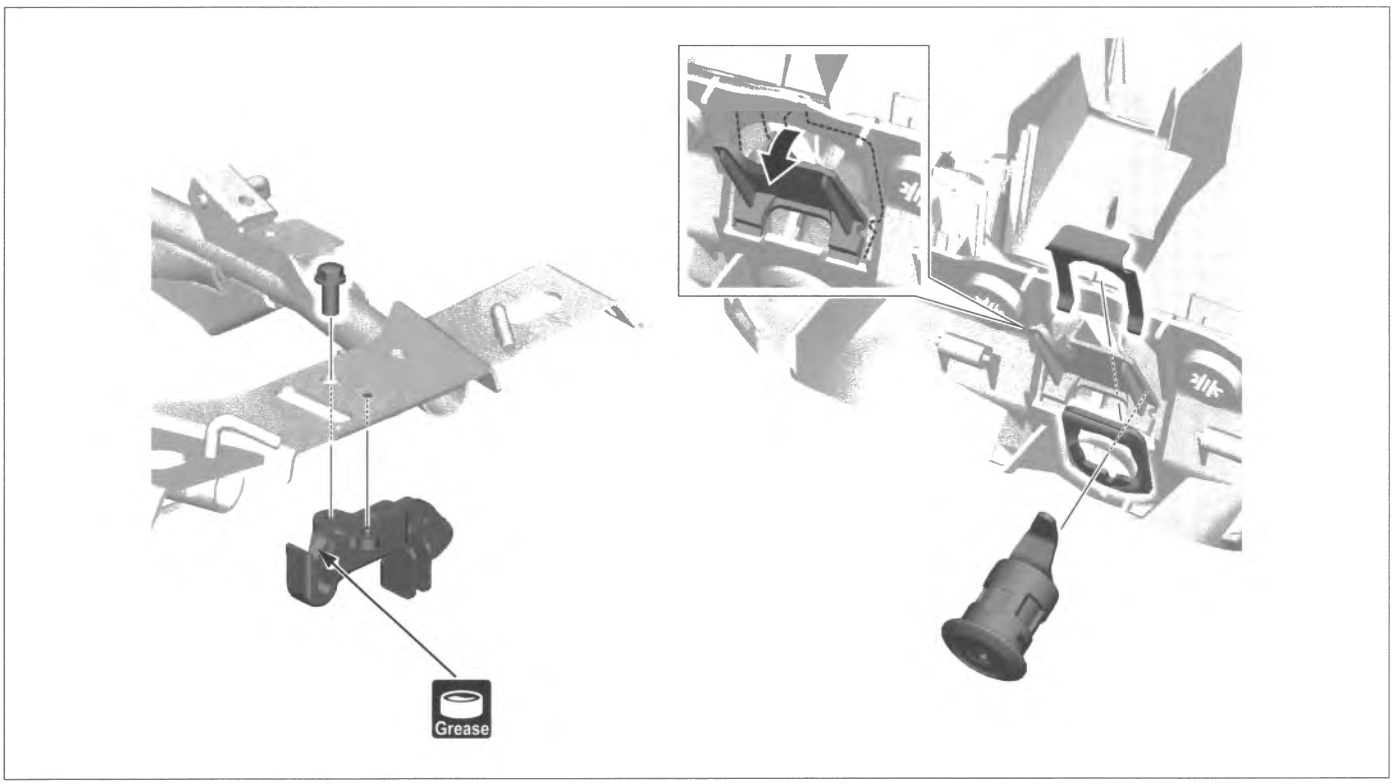
- Rear fender A ➔3-5
- Rear cowl ➔3-14

REAR COWL



- Main seat ➔3-4

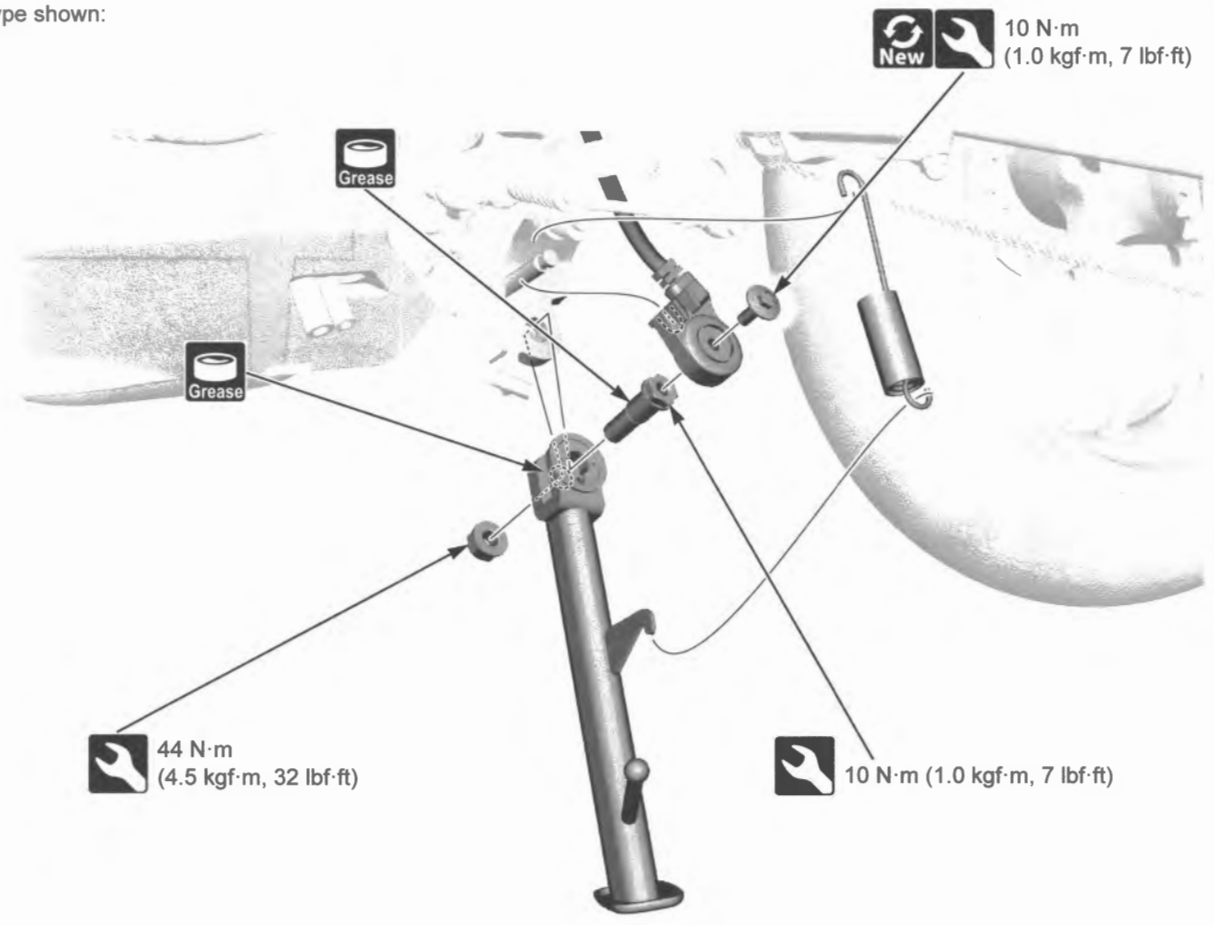
SEAT LOCK



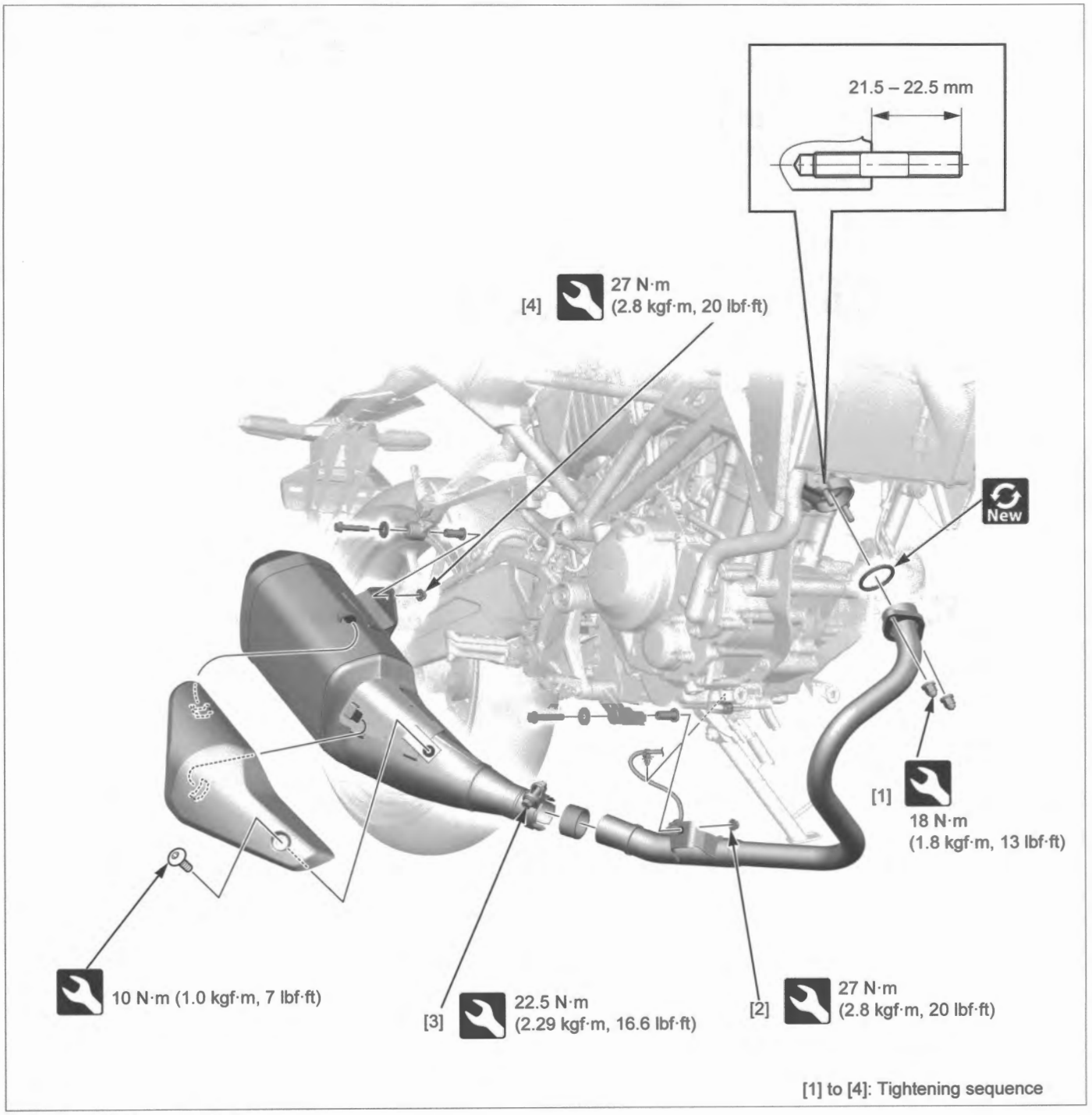
- Rear fender B ➔3-13
- Brake/taillight ➔4-57

SIDESTAND

AC type shown:

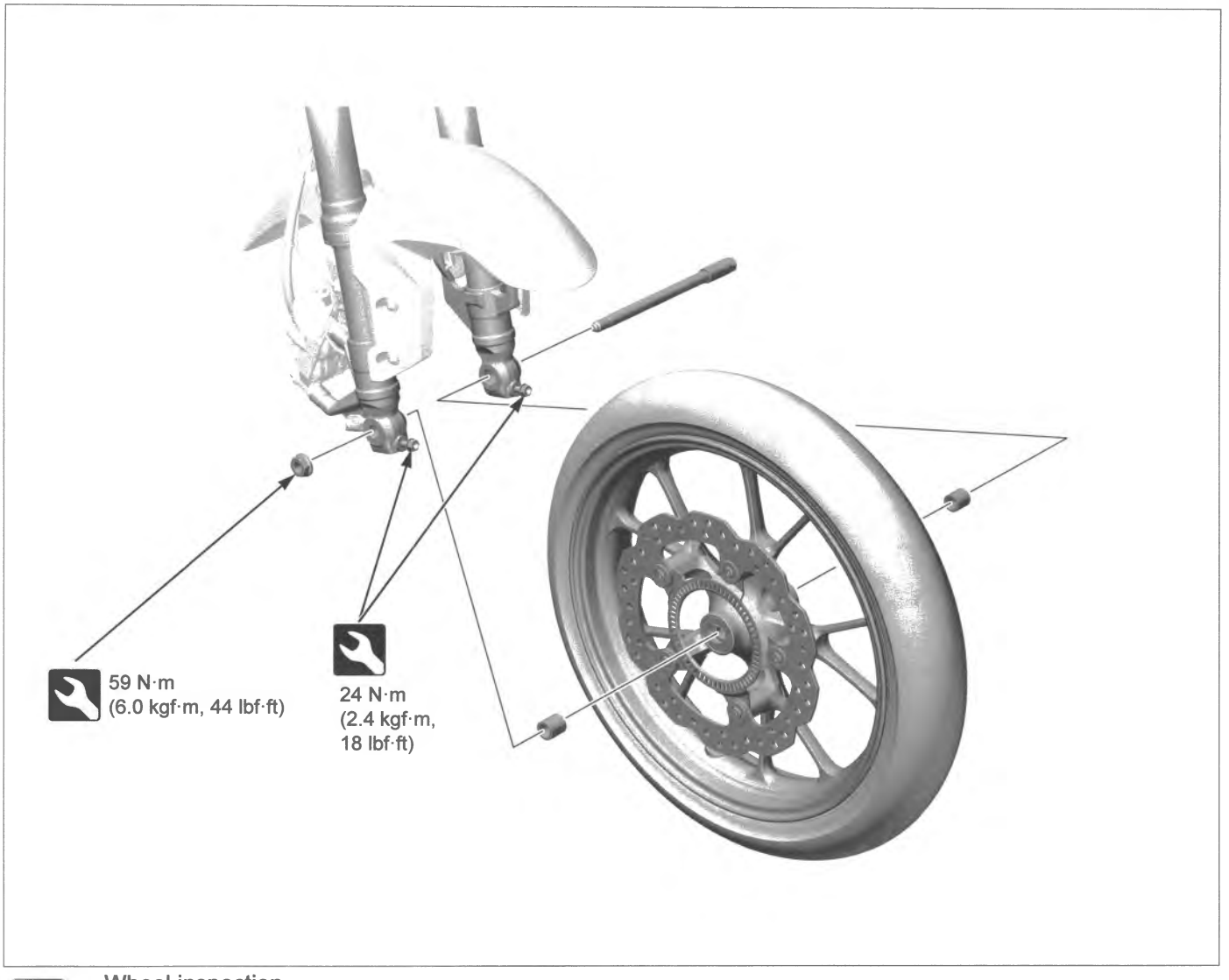


EXHAUST PIPE/MUFFLER



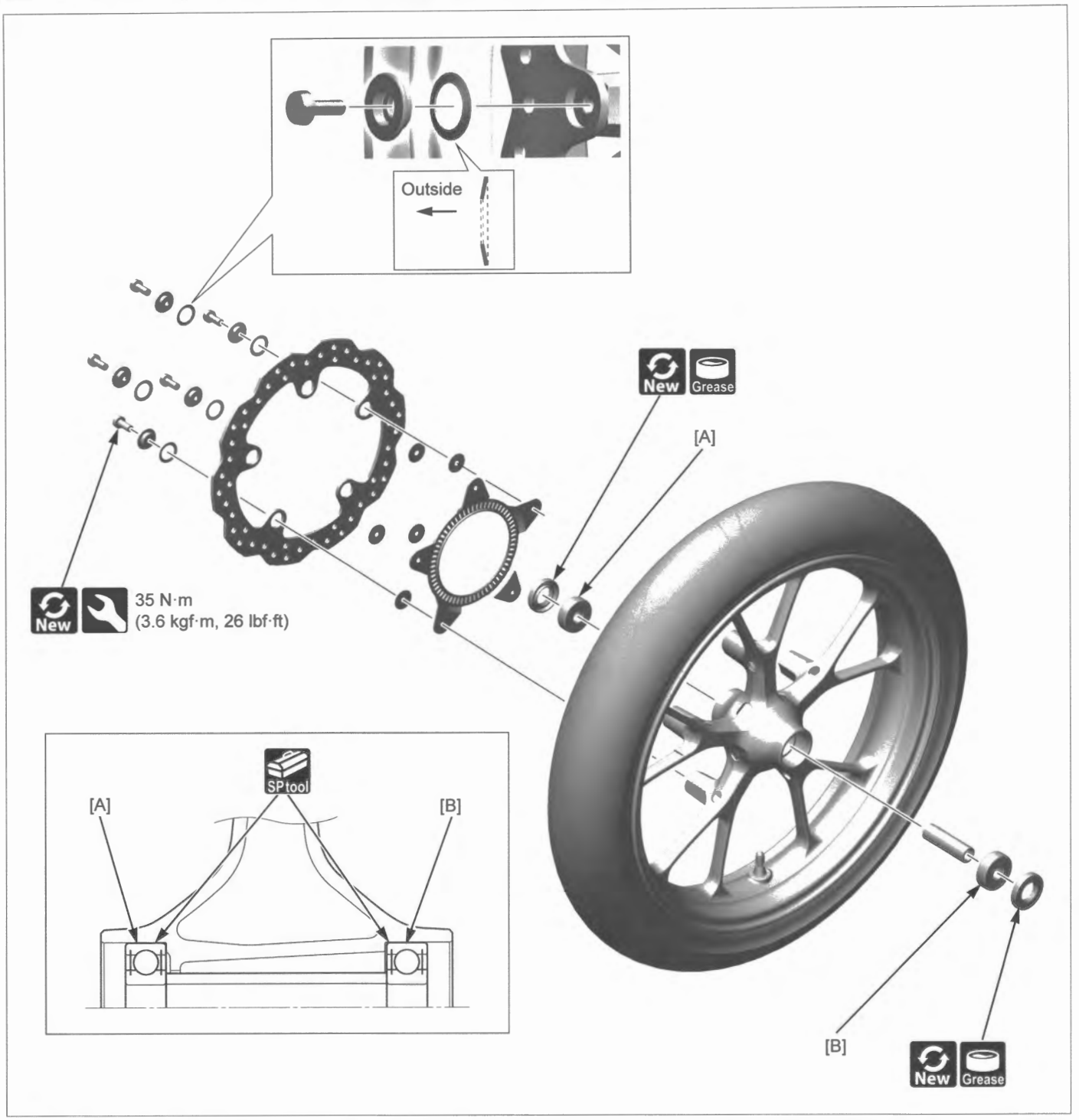
- Under cowl ➔3-7
- Drive sprocket cover ➔3-10

FRONT WHEEL



Basic

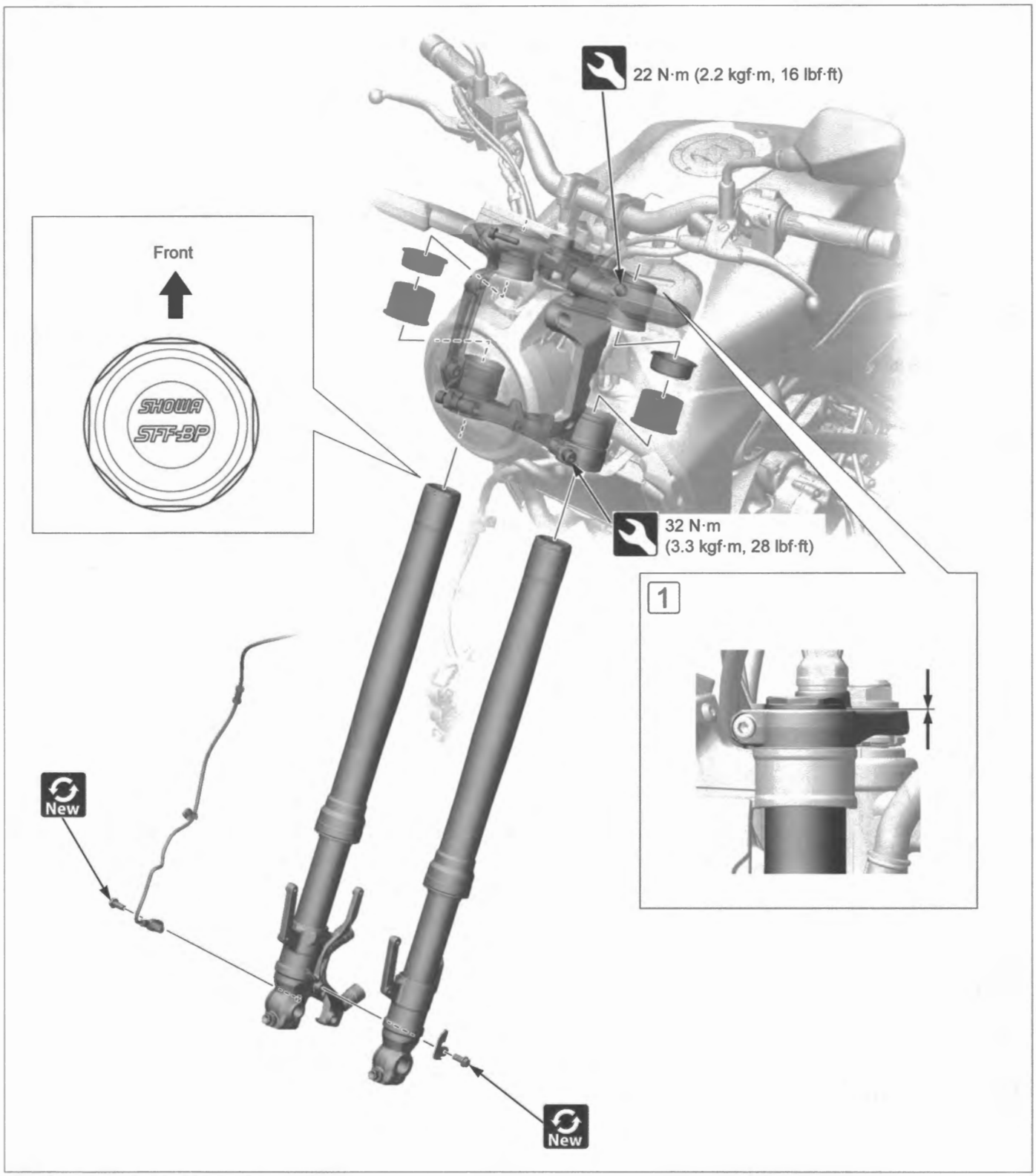
- Wheel inspection



- Install the bearing remover head into the bearing. From the opposite side, install the bearing remover shaft and drive out the bearing from the wheel hub.
  Remover head 15 mm: 07746-0050400
  Bearing remover shaft 9 x 200L: 07746-0050100
- Drive in a new right bearing [A] squarely with its marked side facing outside until it is fully seated.
- Install the distance collar.
- Drive in a new left bearing [B] squarely with its marked side facing outside until it is fully seated on the distance collar.
  Attachment, 42 x 47 mm: 07746-0010300
  Pilot 15 mm: 07746-0040300
  Driver handle, 15 x 135L: 07749-0010000
- Wheel disassembly and inspection

Basic

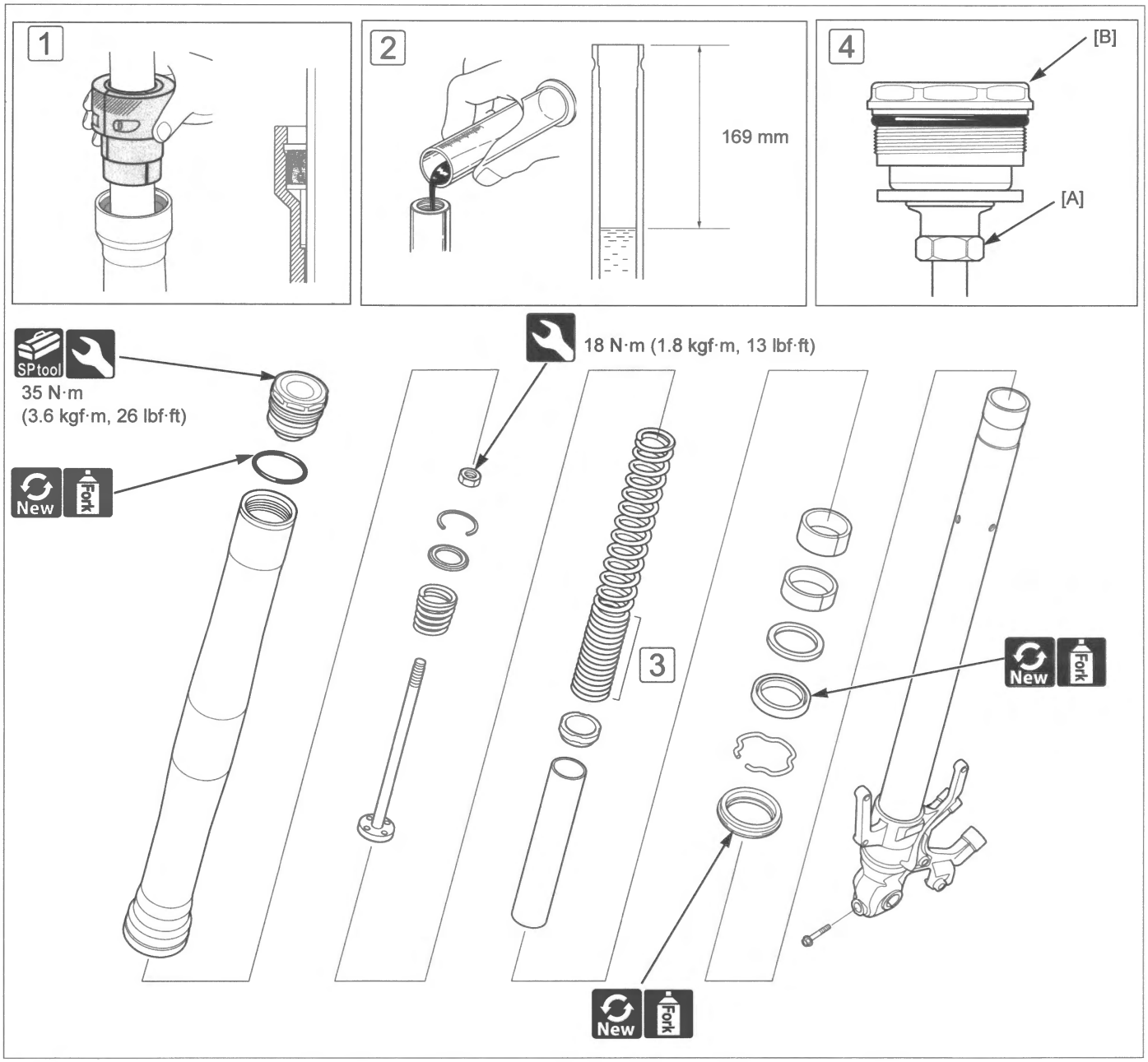
FORK



- Front fender ➔3-3
- Front brake caliper ➔3-30

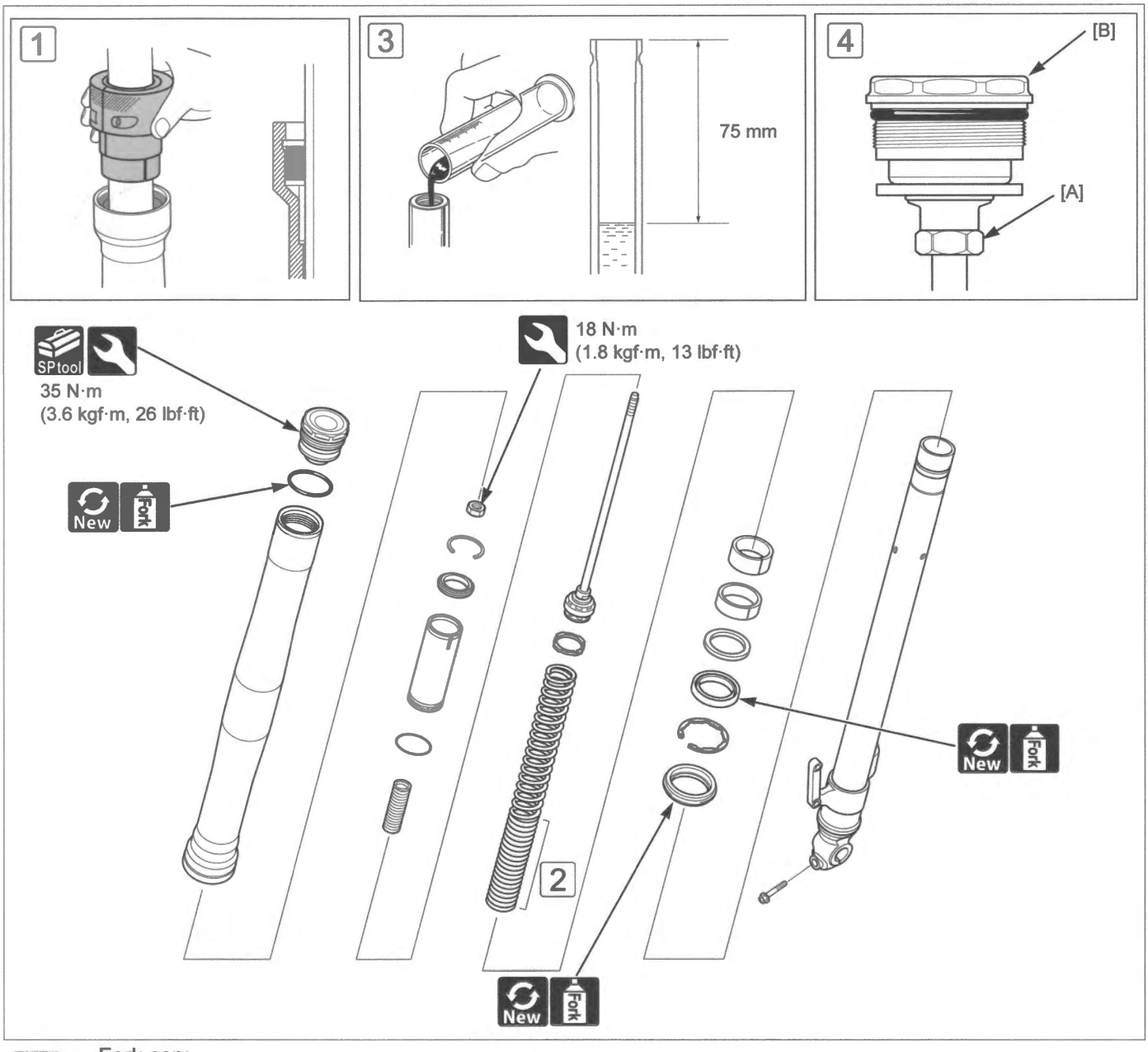
- [1] Install the front fork so that the end of the outer pipe is aligned with the top bridge upper surface.

RIGHT SIDE:



- Fork cap:
  Fork bolt wrench: 070MA-MGP0100 (U.S.A. : 07AMA-MGPA100)
- [1] Drive the oil seal into the outer tube using the special tool.
  Fork seal driver 45.2: 07KMD-KZ30100 (07KMD-KZ3010A U.S.A. only)
  Fork seal driver attachment 41.3: 07RMD-MW40100 (U.S.A. : 07RMC-KCW0100)
- [2] Pour the specified amount of recommended fork fluid into the fork pipe.
  RECOMMENDED FORK FLUID: Fork Fluid (viscosity: 10W)
  FORK FLUID CAPACITY: 435 ± 2.5 cm^3
- Compress the fork leg fully and measure the fluid level from the top of the outer tube.
  FORK FLUID LEVEL: 169 mm
- [3] Install the fork spring with its tightly wound coil side facing down.
- [4] Hold the fully seated fork rod nut [A] and tighten the fork cap [B].
- Fork cap:
  Fork bolt wrench: 070MA-MGP0100 (U.S.A. : 07AMA-MGPA100)
- Fork disassembly and inspection

LEFT SIDE:



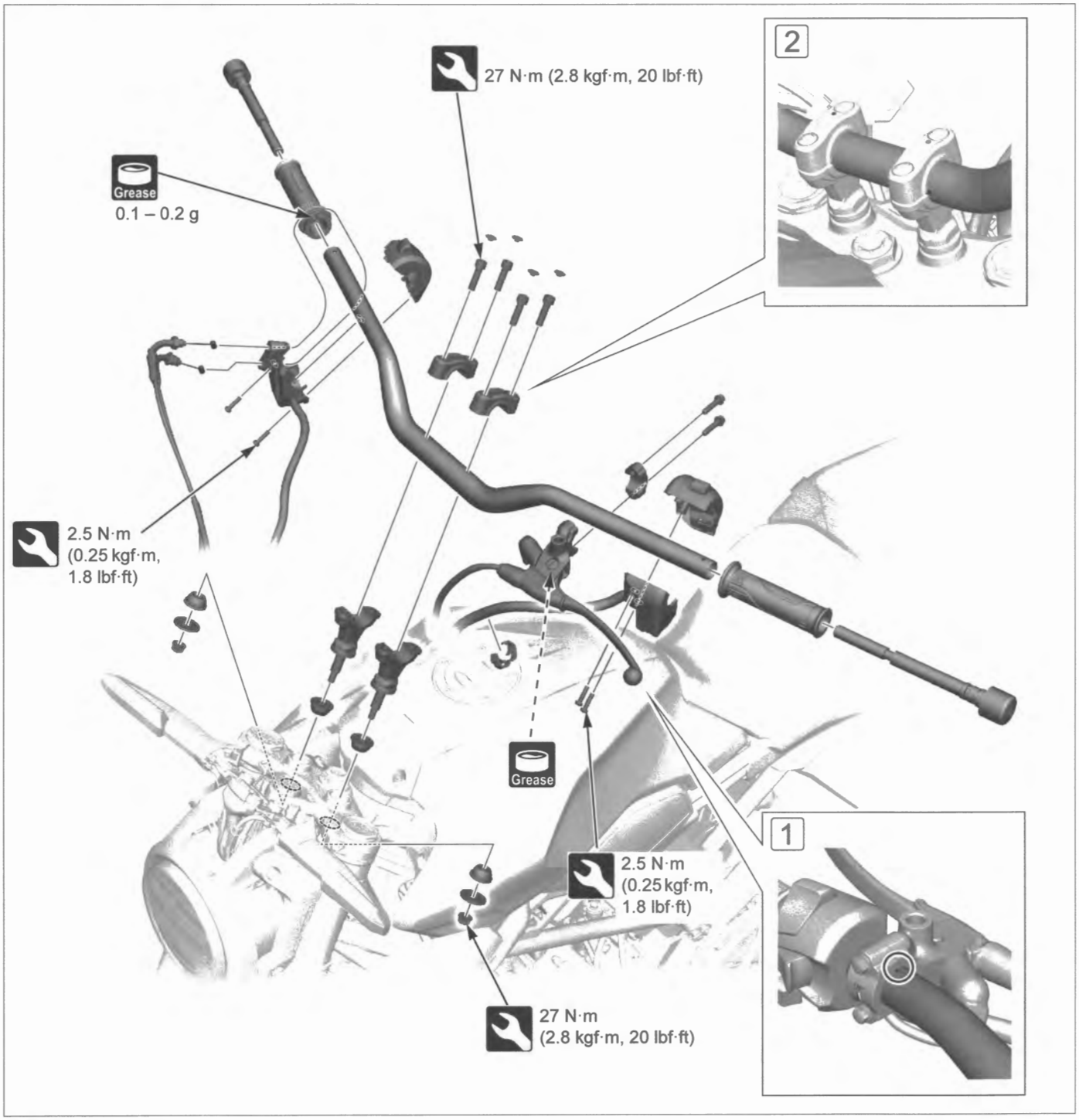
- Fork cap:
  Fork bolt wrench: 070MA-MGP0100 (U.S.A. : 07AMA-MGPA100)

- [1] Drive the oil seal into the outer tube using the special tool.
  Fork seal driver 45.2: 07KMD-KZ30100 (07KMD-KZ3010A U.S.A. only)
  Fork seal driver attachment 41.3: 07RMD-MW40100 (U.S.A. : 07RMC-KCW0100)
- [2] Install the fork spring with its tightly wound coil side facing down.
- [3] Pour the specified amount of recommended fork fluid into the fork pipe.
  RECOMMENDED FORK FLUID: Fork Fluid (viscosity: 10W)
  FORK FLUID CAPACITY: 455 ± 2.5 cm^3
- Compress the fork leg fully and measure the fluid level from the top of the outer tube.
  FORK FLUID LEVEL: 75 mm

- [4] Hold the fully seated fork rod nut [A] and tighten the fork cap [B].
  Fork bolt wrench: 070MA-MGP0100 (U.S.A. : 07AMA-MGPA100)

- Fork disassembly and inspection

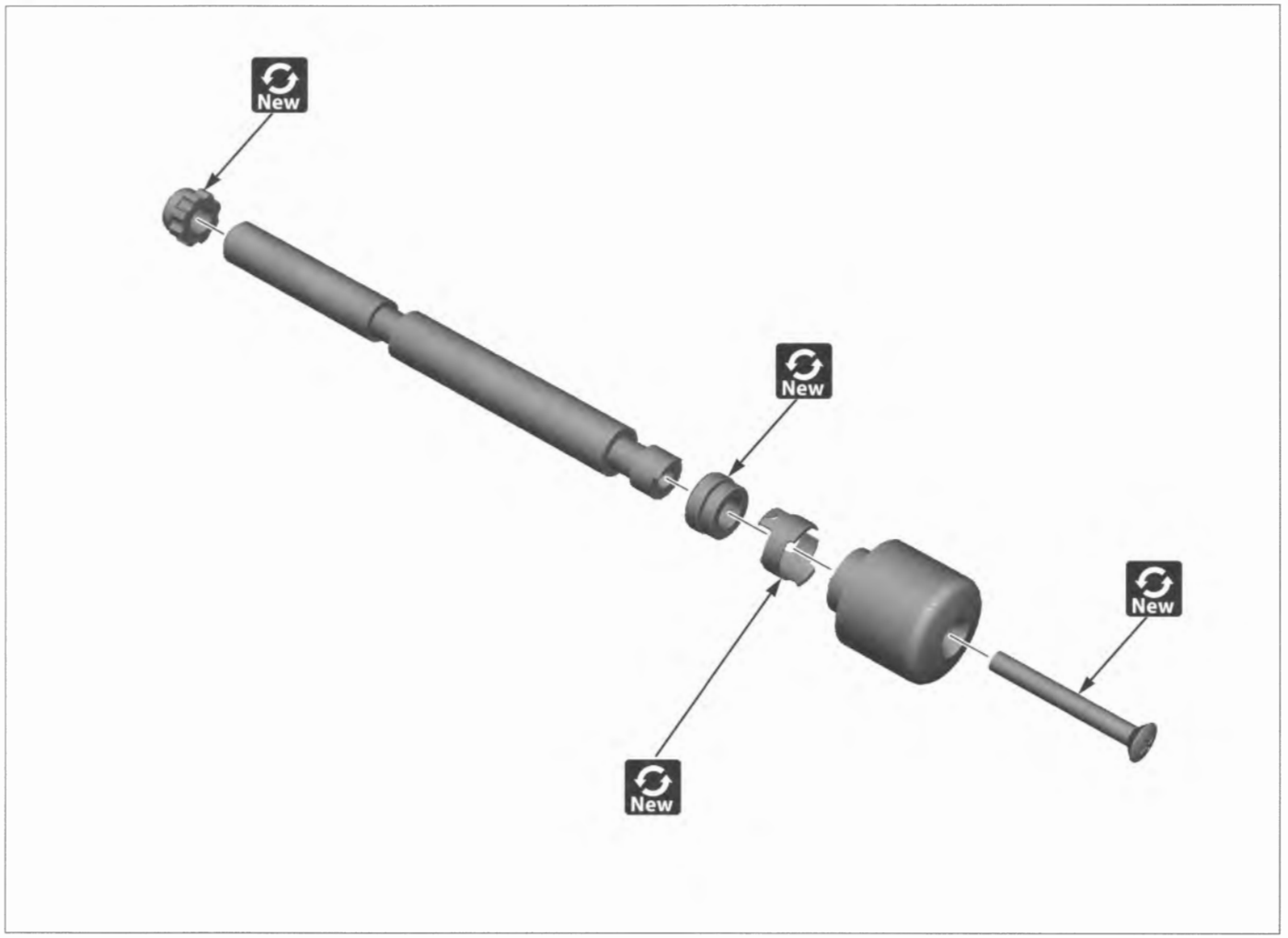
HANDLEBAR



- Front brake master cylinder ➔3-29

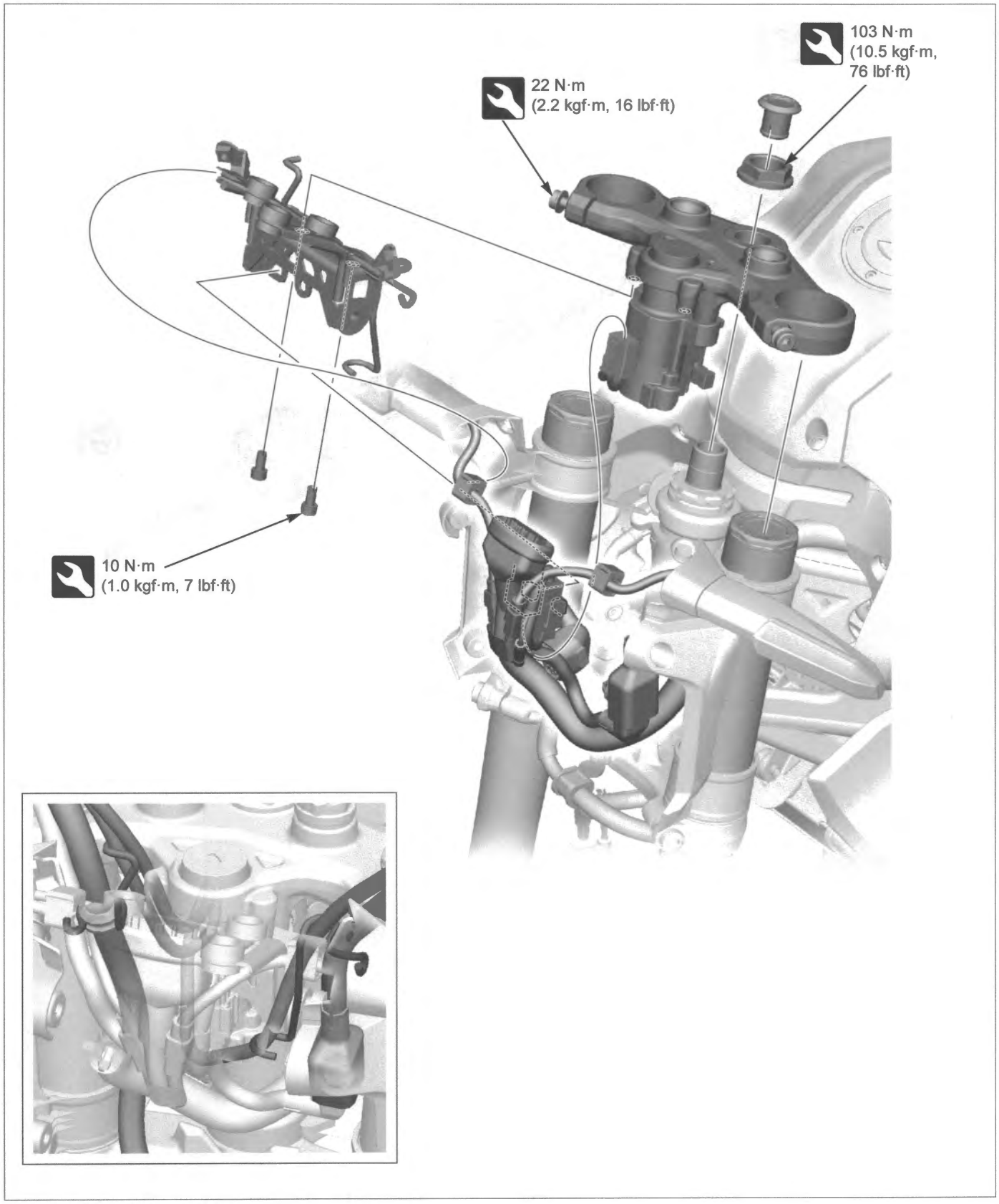
- [1] Install the holder with the "UP" mark facing up. Align the edge of the lever bracket with the punch mark.
- [2] Align the upper surface of the lower handlebar holder with the punch mark on the handlebar. Tighten the bolts towards the front of the motorcycle first, then the rear bolts.

HANDLEBAR WEIGHT



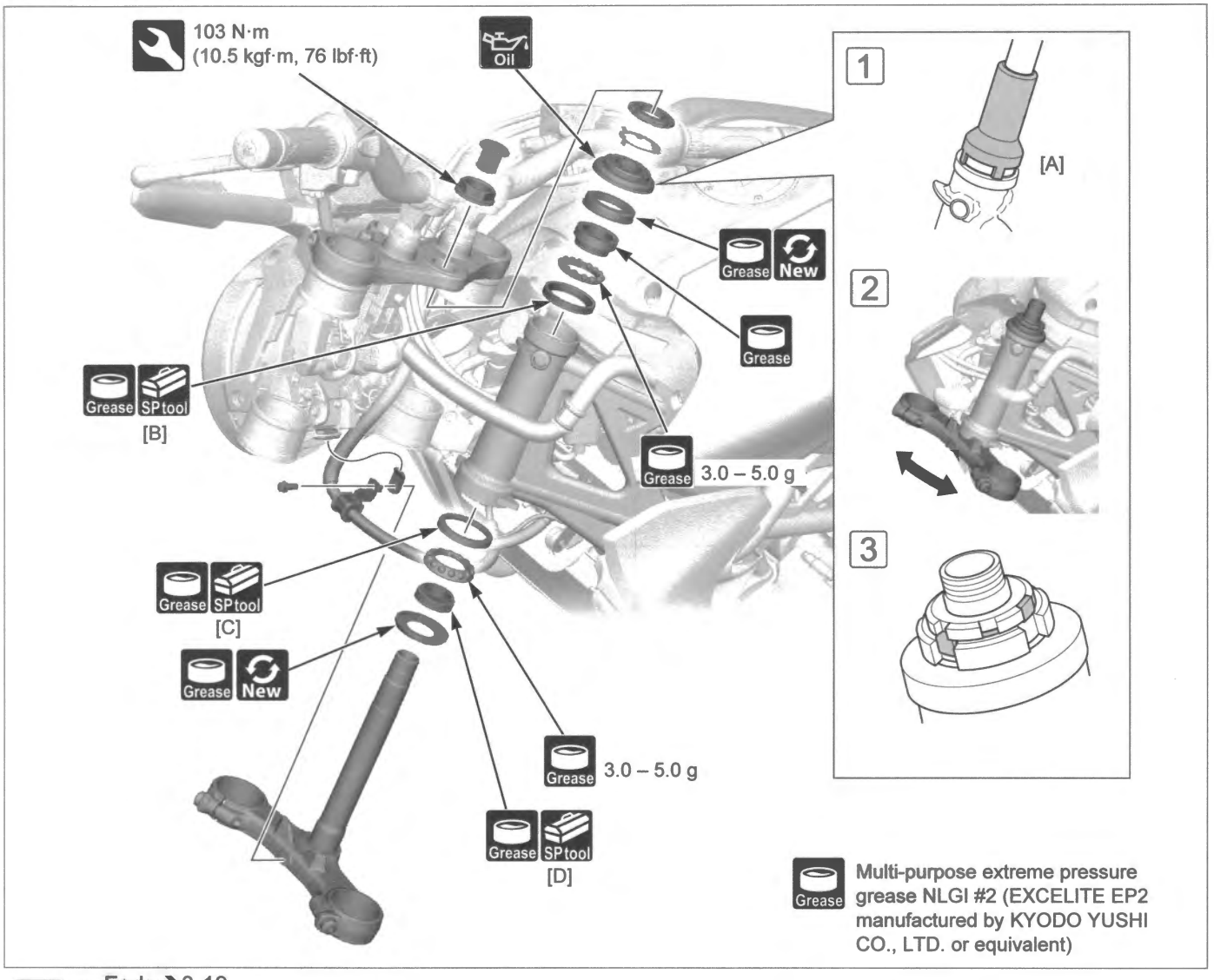
STEERING STEM

TOP BRIDGE



- Handlebar ➔3-22
- Combination meter ➔4-61

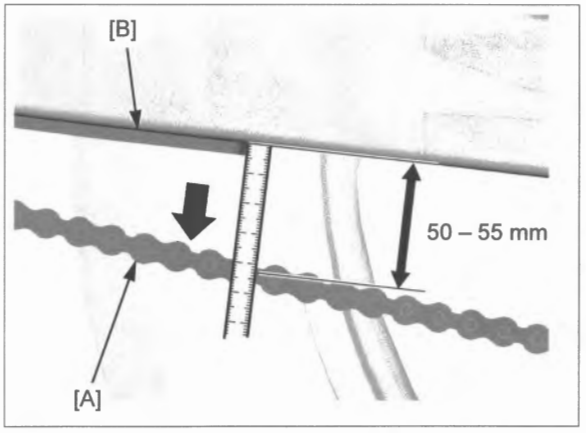
BOTTOM BRIDGE



- Fork ➔3-19
- STEERING STEM:
  [A] Locknut wrench 5.7 x 50: 07916-3710101 (Use 07916-3710101 or 07916-3710000 for USA)
- STEERING STEM BEARING:
  [B] Remover attachment 40: 07953-MJ10100 (U.S.A. : 07953-MJ1000B), Handle 370: 07953-MJ10200 (U.S.A. : 07953-MJ1000B)
- STEERING STEM BEARING:
  [C] Ball race remover 44.5: 07946-3710500 (U.S.A. : 07946-3710300)
- STEERING STEM BEARING:
  [D] Driver, 30 mm I.D.: 07946-MB00000 (U.S.A. : 07946-ME90200 + 07947-KA50100 + 07965-MA60000)
- STEERING STEM:
  [A] Locknut wrench 5.7 x 50: 07916-3710101 (Use 07916-3710101 or 07916-3710000 for USA)
- [1] Install the adjusting nut. Hold the steering stem and tighten the adjusting nut to the initial torque.
  TORQUE: 39 N·m (4.0 kgf·m, 29 lbf·ft)
- [2] Turn the steering stem lock-to-lock five times to seat the bearing. Completely loosen the adjusting nut, and then tighten the adjusting nut to the specified torque.
  TORQUE: 29 N·m (3.0 kgf·m, 21 lbf·ft)
- [3] Install the top thread until it is lightly seated to the lock washer tabs. Further tighten the top thread within 90° enough to align its grooves with the lock washer tabs. Bend the lock washer tabs up into the lock nut grooves. Then, make sure the steering stem moves smoothly by turning the steering stem again.
- Steering disassembly/assembly and inspection

DRIVE CHAIN

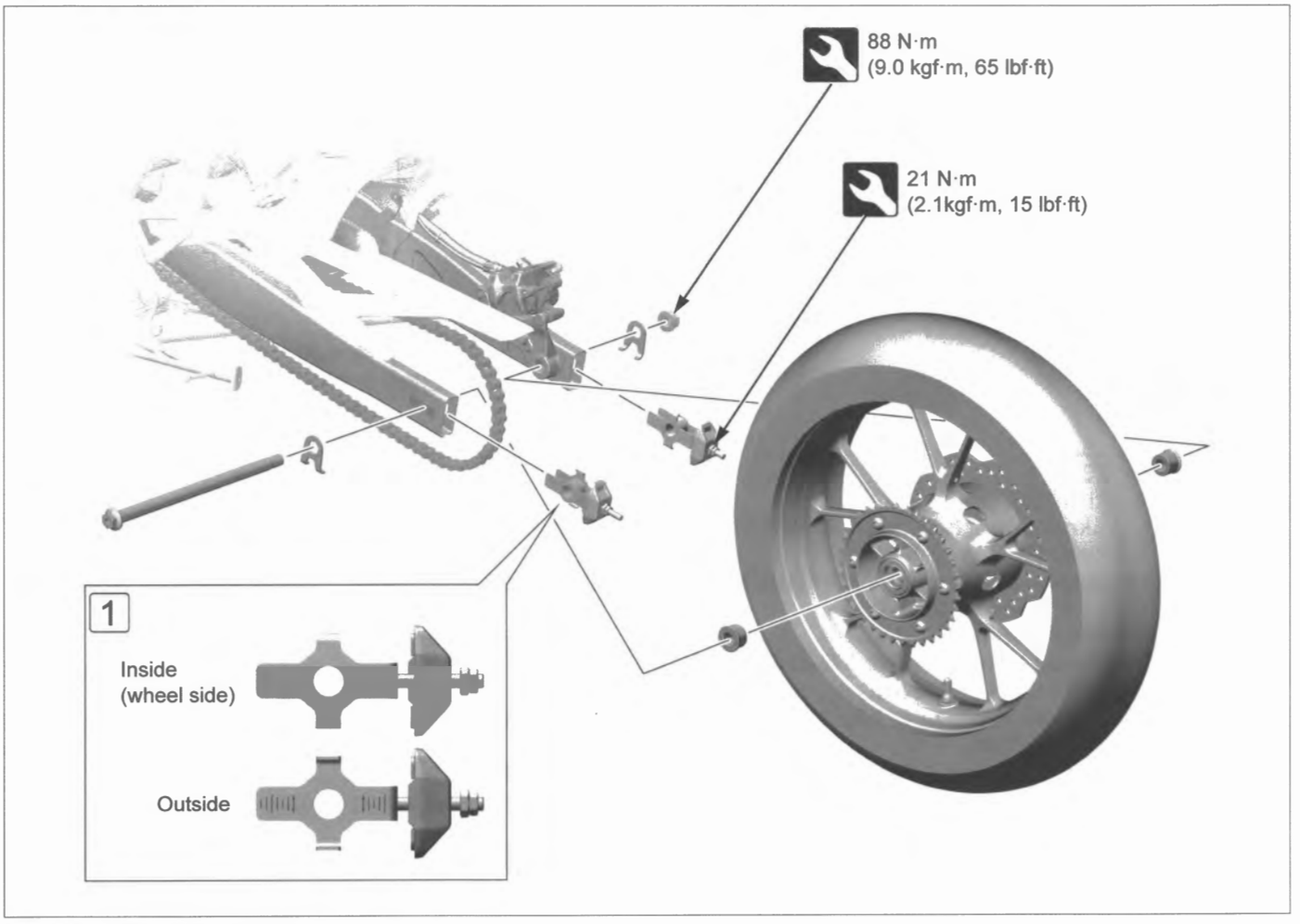
DRIVE CHAIN SLACK INSPECTION



- Place the motorcycle on its sidestand and shift the transmission into neutral.
- While depressing the drive chain [A], measure the distance from the bottom of the swingarm to the drive chain at the end of the drive chain slider [B].
- Measure the slack in the drive chain at several points on the chain by turning the rear wheel.
- Drive chain

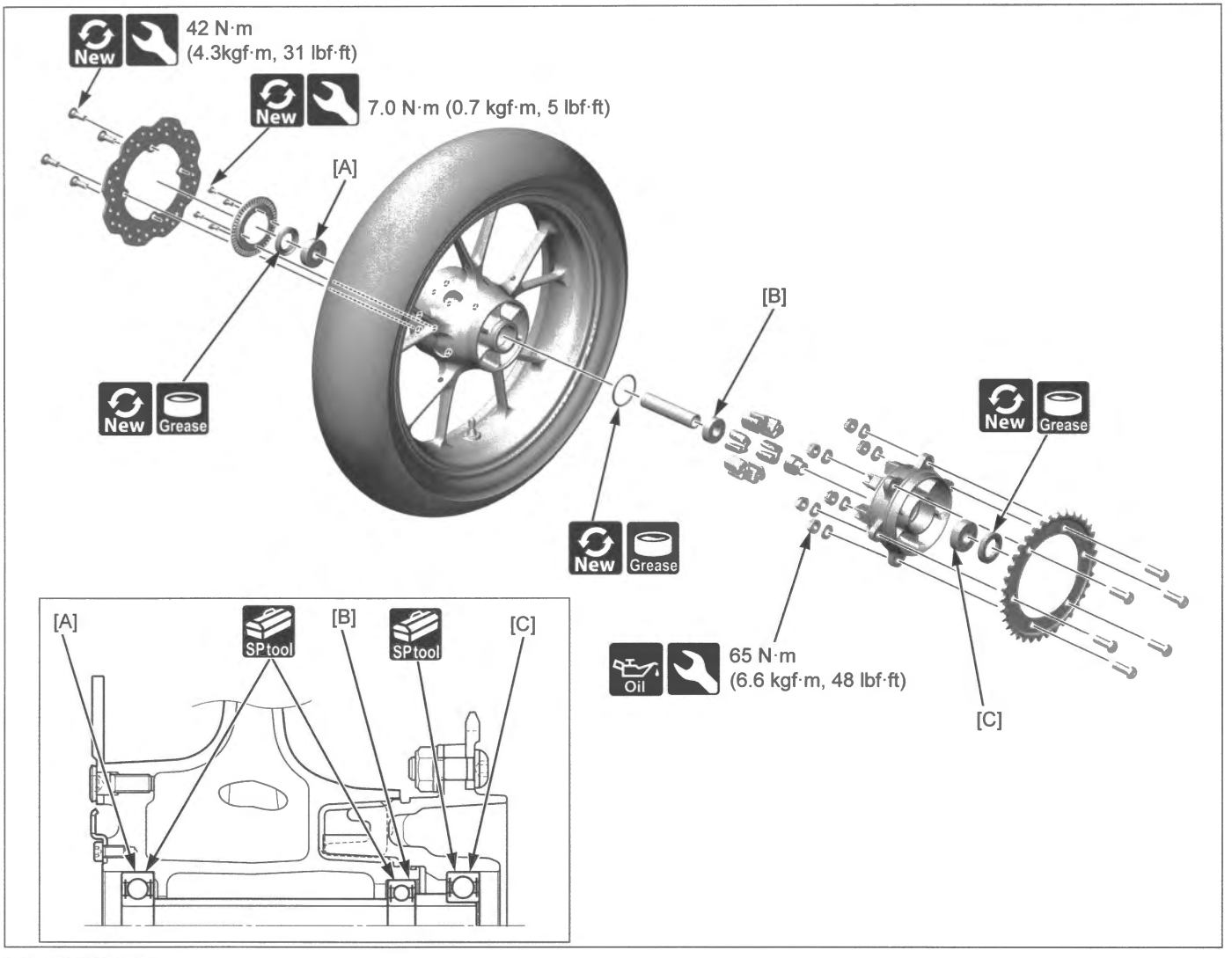
Basic

REAR WHEEL



Basic

- Wheel inspection
- 1 Install the swingarm end cap in the direction as shown.



REAR WHEEL

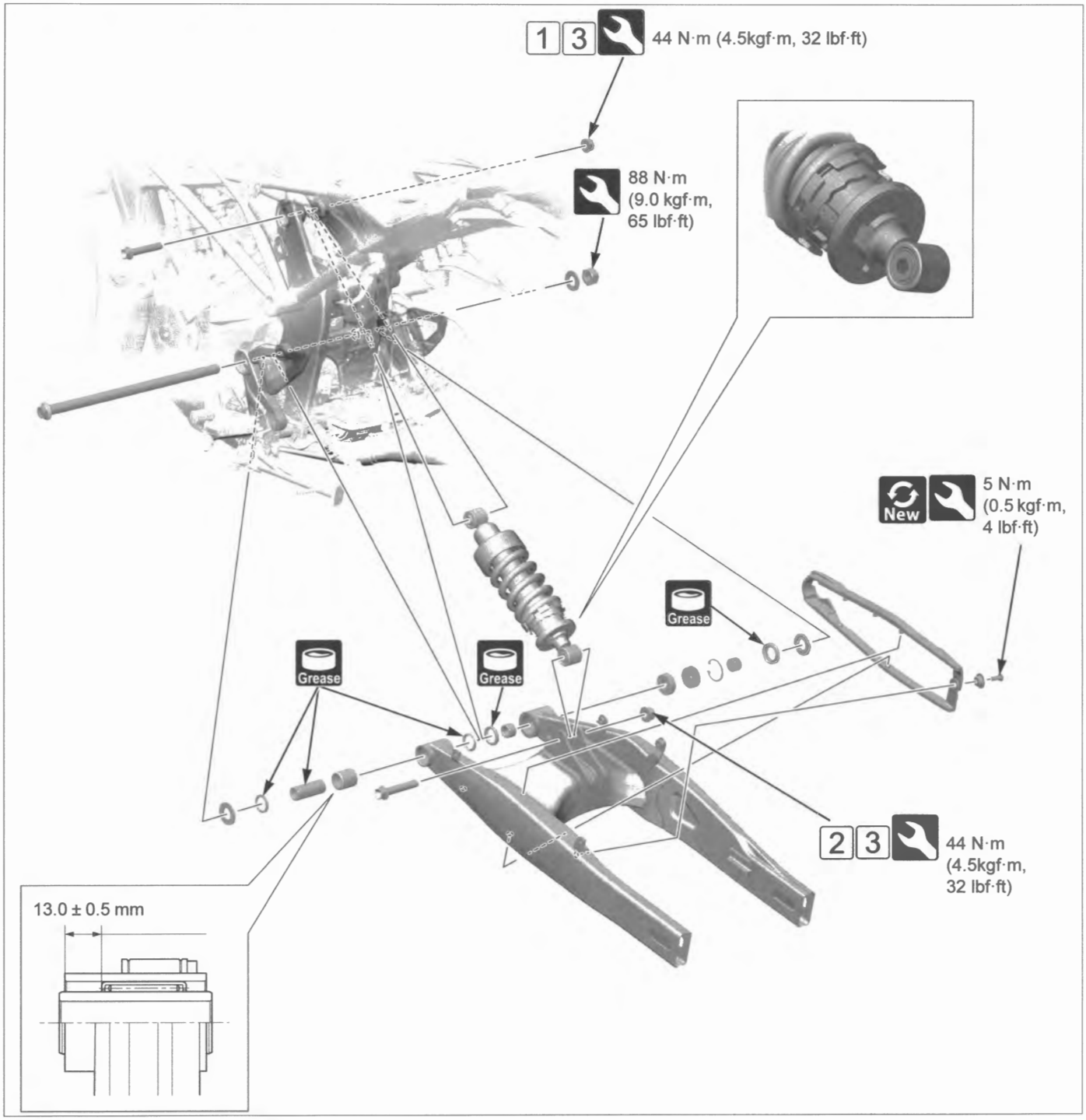
- Install the bearing remover head into the bearing. From the opposite side, install the bearing remover shaft and drive out the bearing from the wheel hub.
  Remover head 17 mm: 07746-0050500
  Bearing remover shaft 9 x 200L: 07746-0050100
- Drive in a new right bearing [A] squarely with its marked side facing outside until it is fully seated.
  Attachment, 42 x 47 mm: 07746-0010300
  Pilot 17 mm: 07746-0040400
  Driver handle, 15 x 135L: 07749-0010000
- Install the distance collar.
- Drive in a new left bearing [B] squarely with its marked side facing outside until it is fully seated on the distance collar.
  Attachment, 37 x 40 mm: 07746-0010200
  Pilot 17 mm: 07746-0040400
  Driver handle, 15 x 135L: 07749-0010000
- Wheel disassembly and inspection

Basic

DRIVEN FLANGE

- Drive in a new bearing [C] squarely.
  Attachment, 42 x 47 mm: 07746-0010300
  Pilot 20 mm: 07746-0040500
  Driver handle, 15 x 135L: 07749-0010000

REAR SUSPENSION

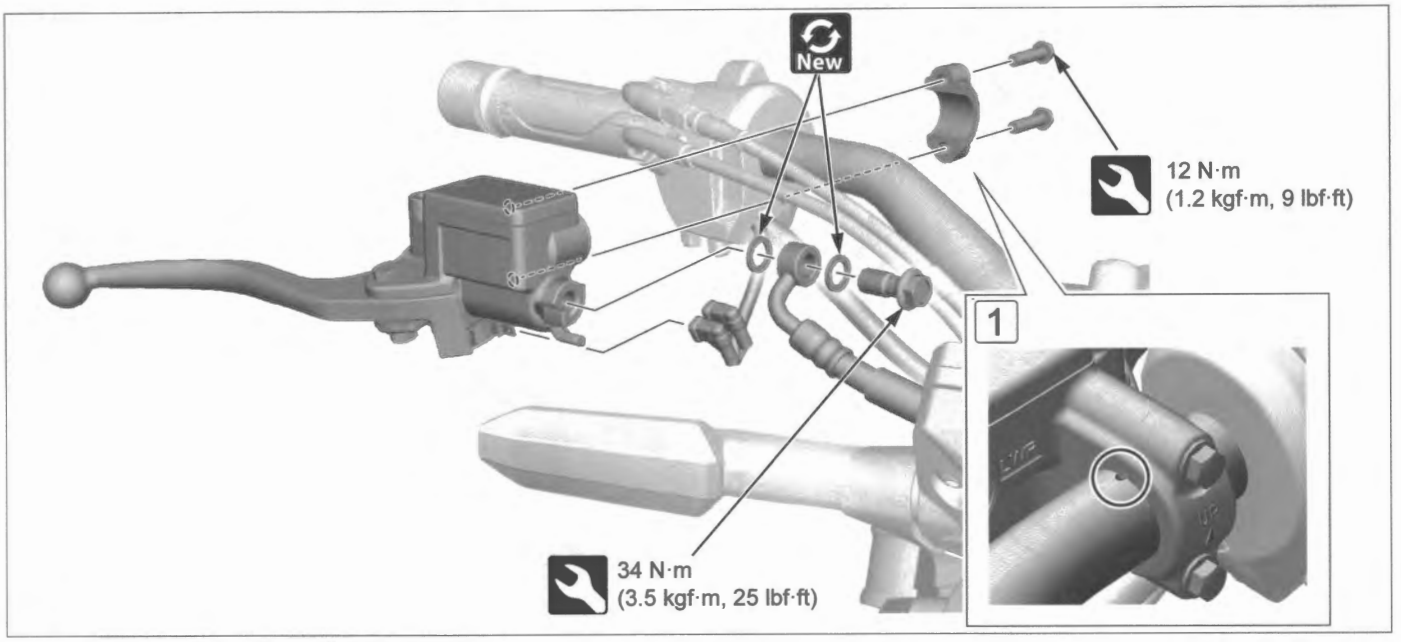


- Fuel tank cover ➔3-9
- Drive chain case ➔3-12
- Rear wheel ➔3-26

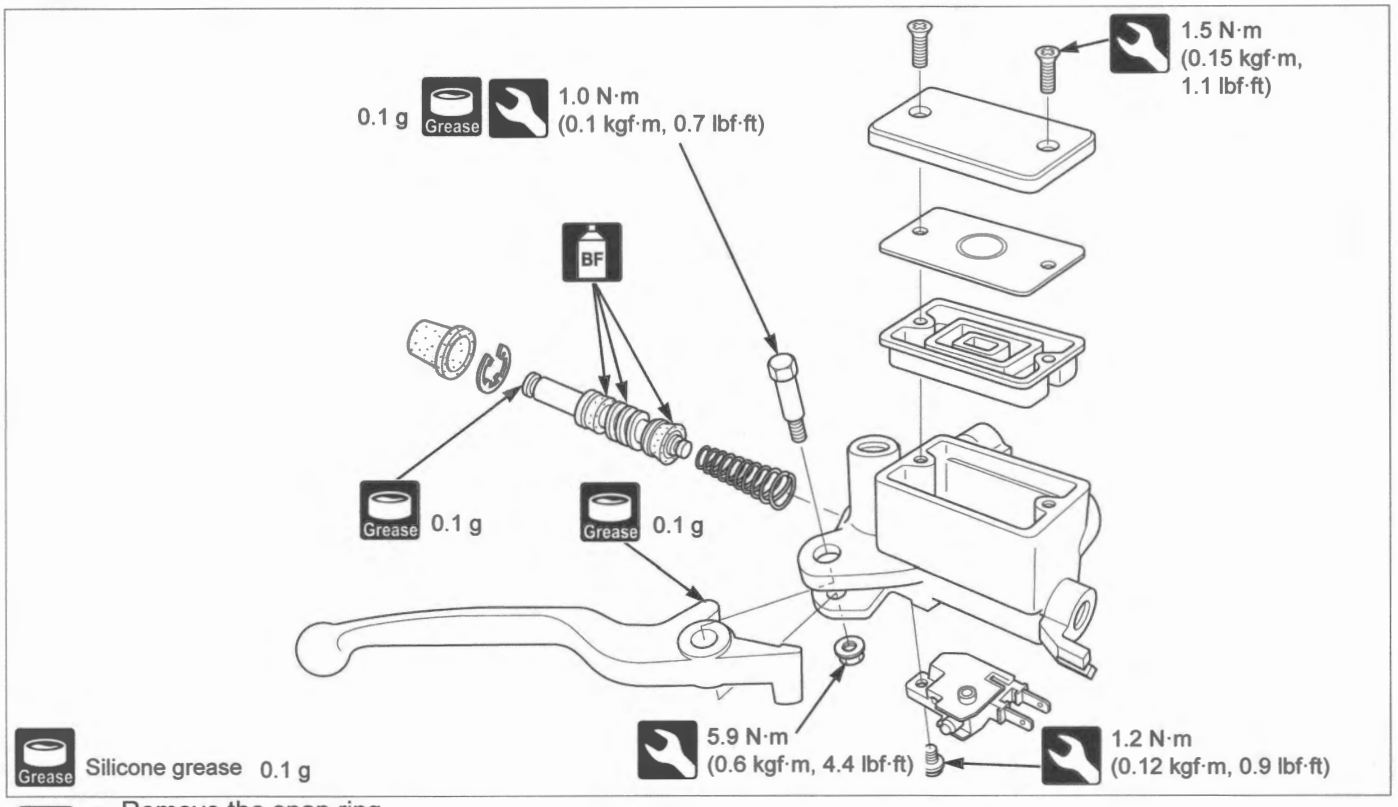
- 1 Loosely install the shock absorber upper nut.
- 2 Loosely install the shock absorber lower nut.
- Rear wheel ➔3-26
- 3 Place the vehicle on the ground. Compressing the rear end several times, then tighten the shock absorber nuts to the specified torque.

FRONT BRAKE

BRAKE MASTER CYLINDER



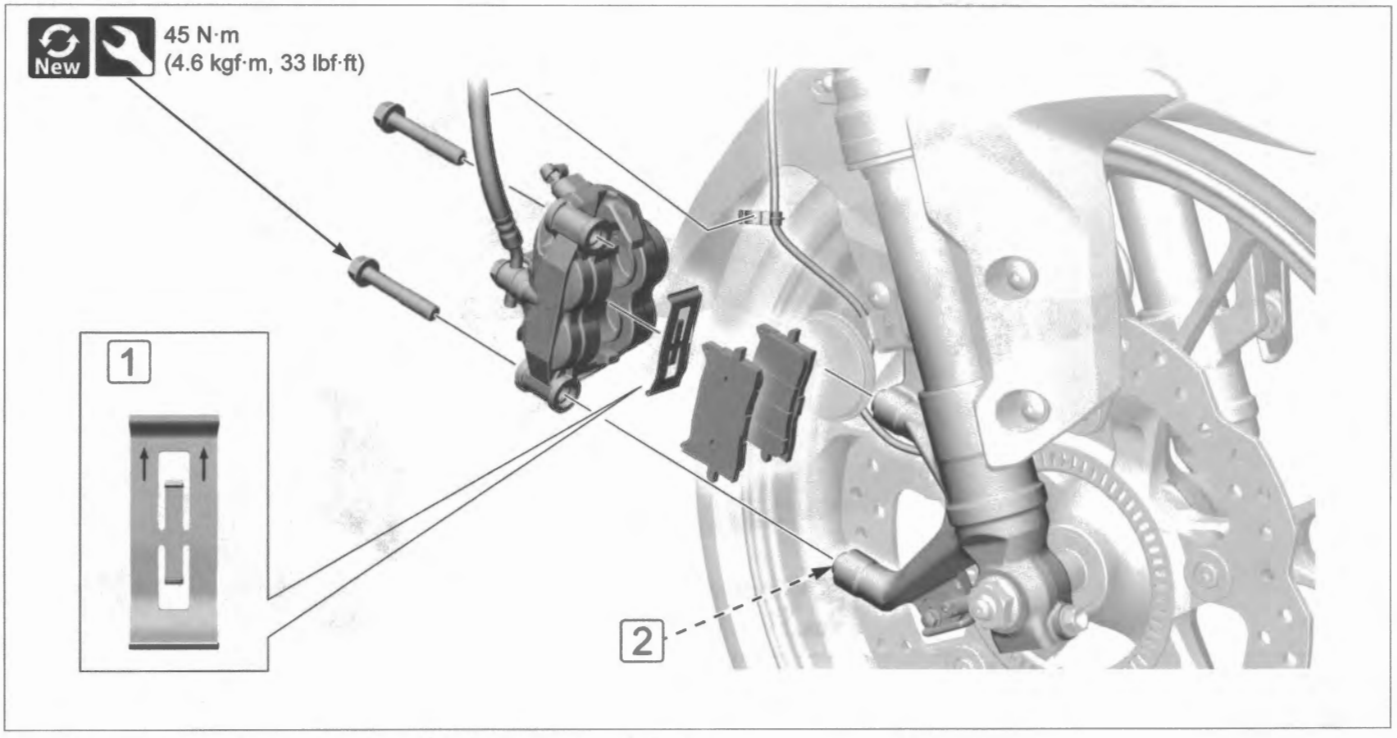
- Rearview mirror ➔3-3
- [1] Install the holder with the "UP" mark facing up. Align the edge of the master cylinder with the punch mark.



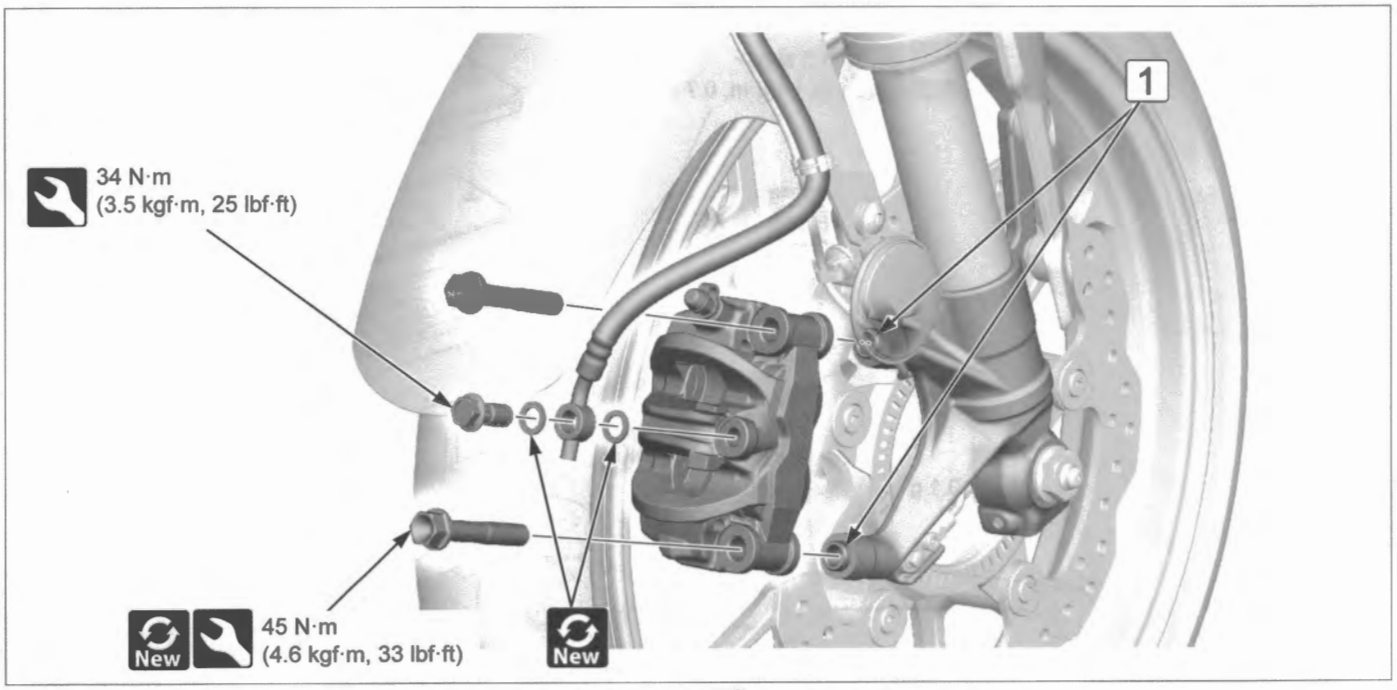
- Remove the snap ring.
  Snap ring pliers: 07914-SA50001 (U.S.A. : 07AAA-PAAA100)
- Master cylinder inspection

BRAKE CALIPER

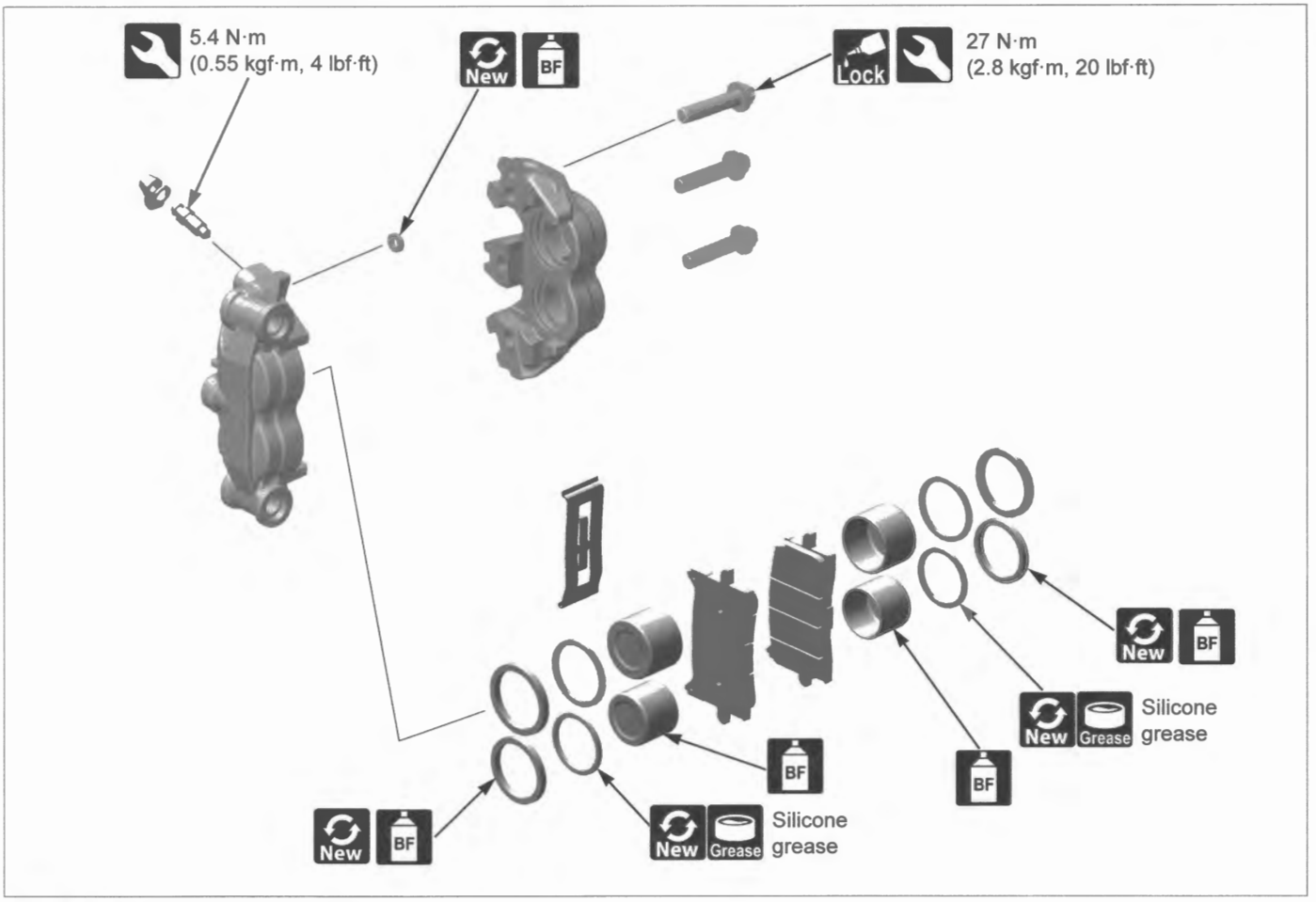
BRAKE PAD REPLACEMENT



- 1 Install the pad spring with the arrow mark facing up.
- 2 Make sure that the collars are installed into the caliper bracket properly.



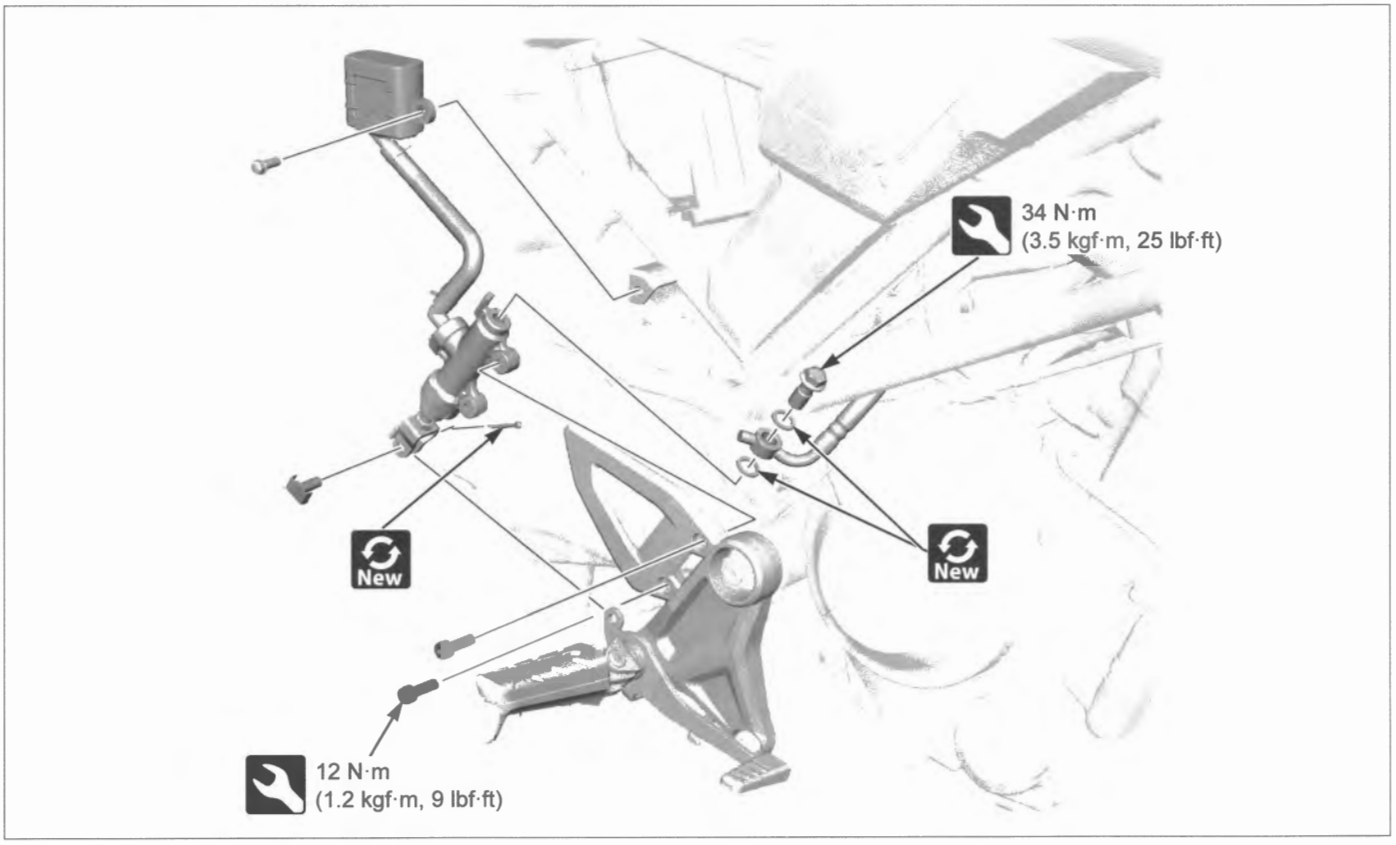
- 1 Make sure that the collars are installed into the caliper bracket properly.

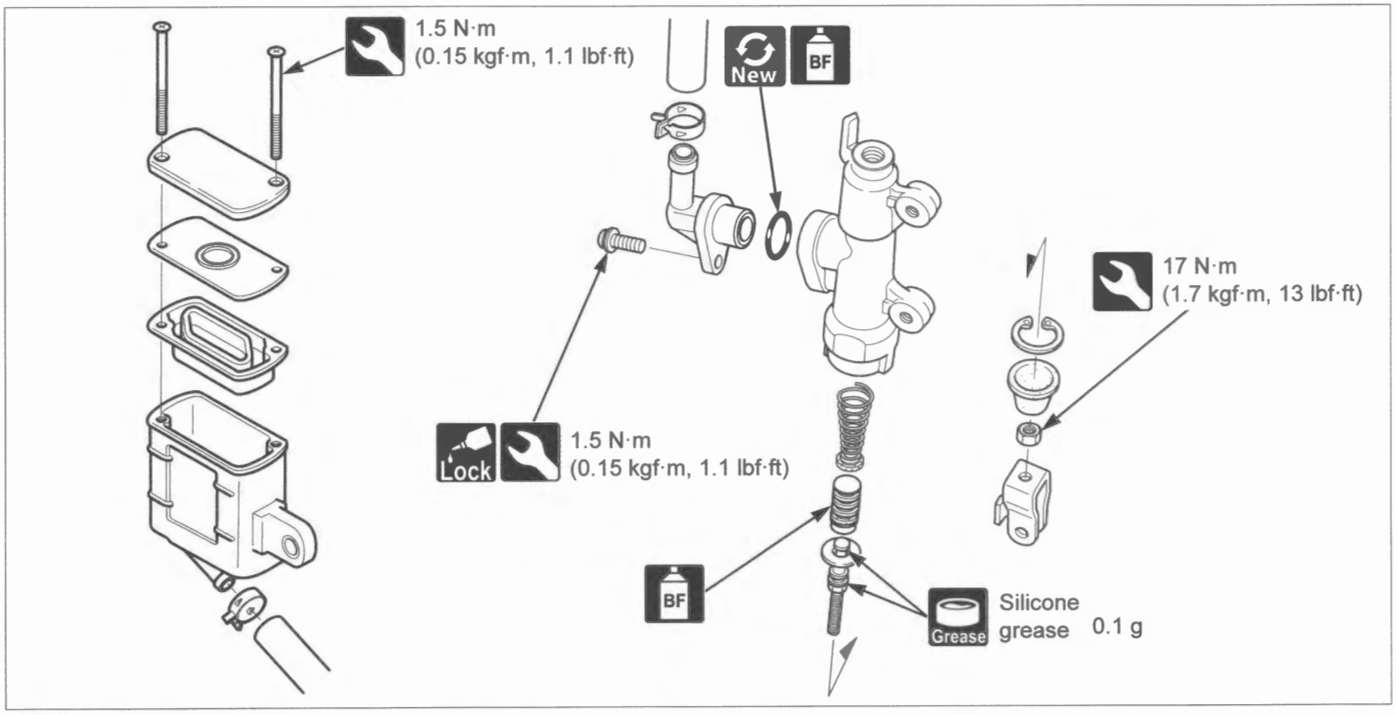


Basic • Brake caliper inspection

REAR BRAKE

BRAKE MASTER CYLINDER



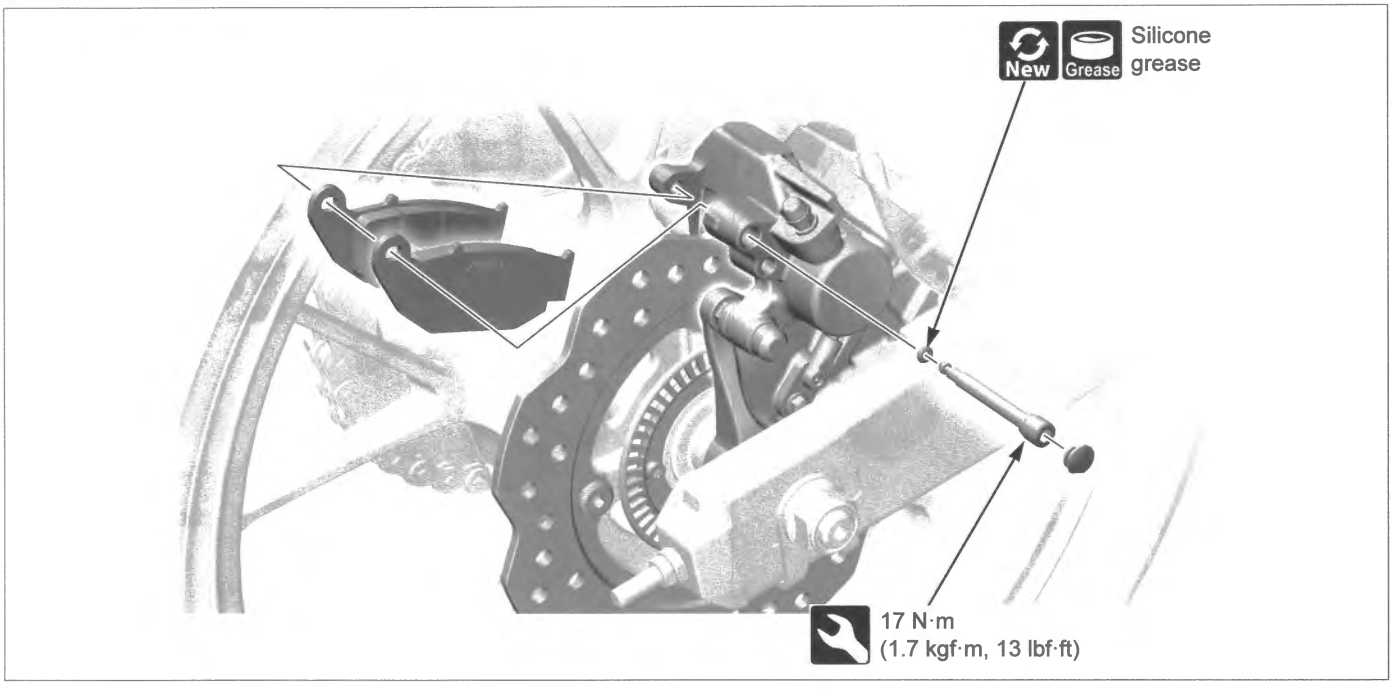


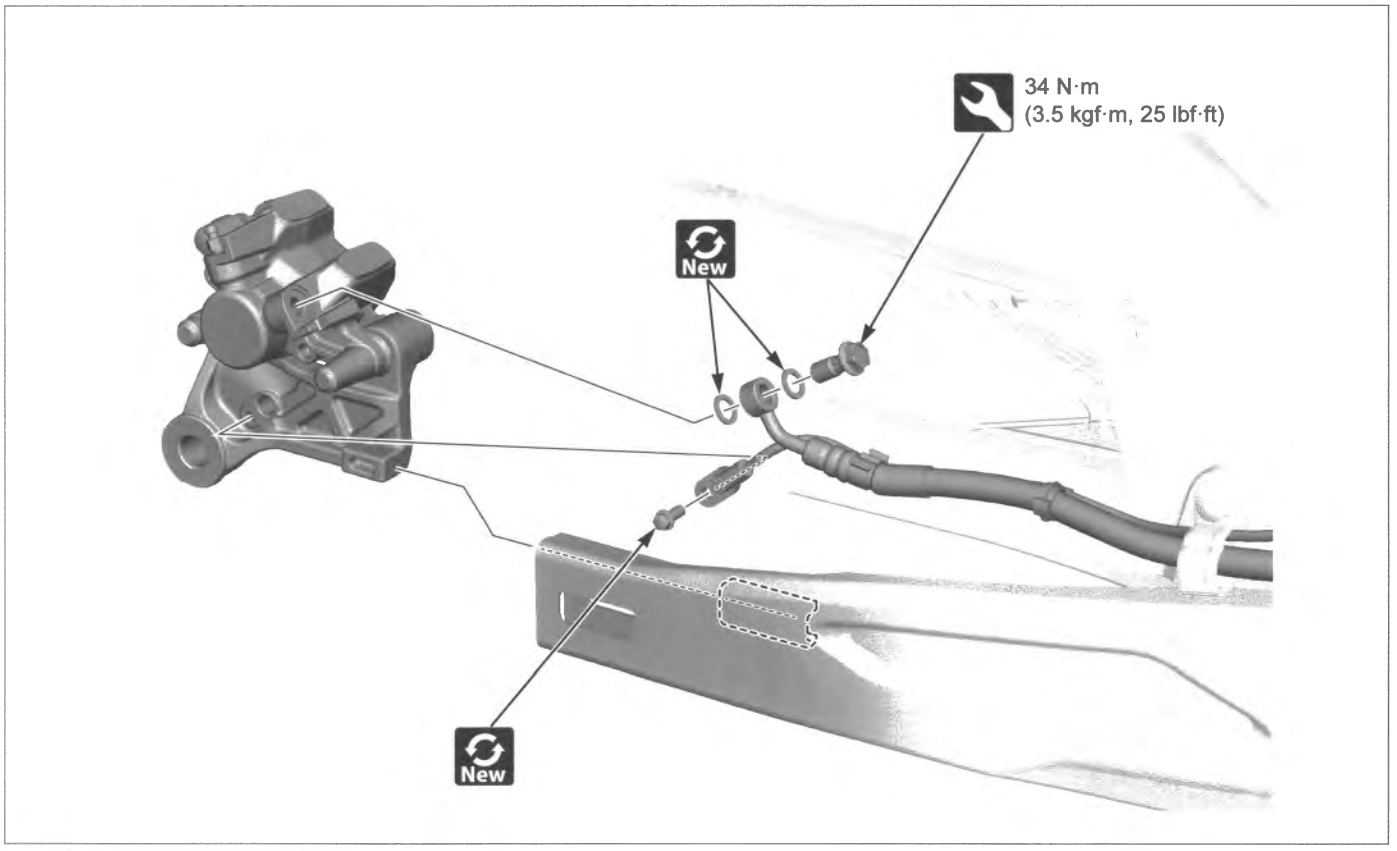
- Remove the snap ring.
  Snap ring pliers: 07914-SA50001 (U.S.A. : 07AAA-PAAA100)
- Master cylinder inspection

Basic

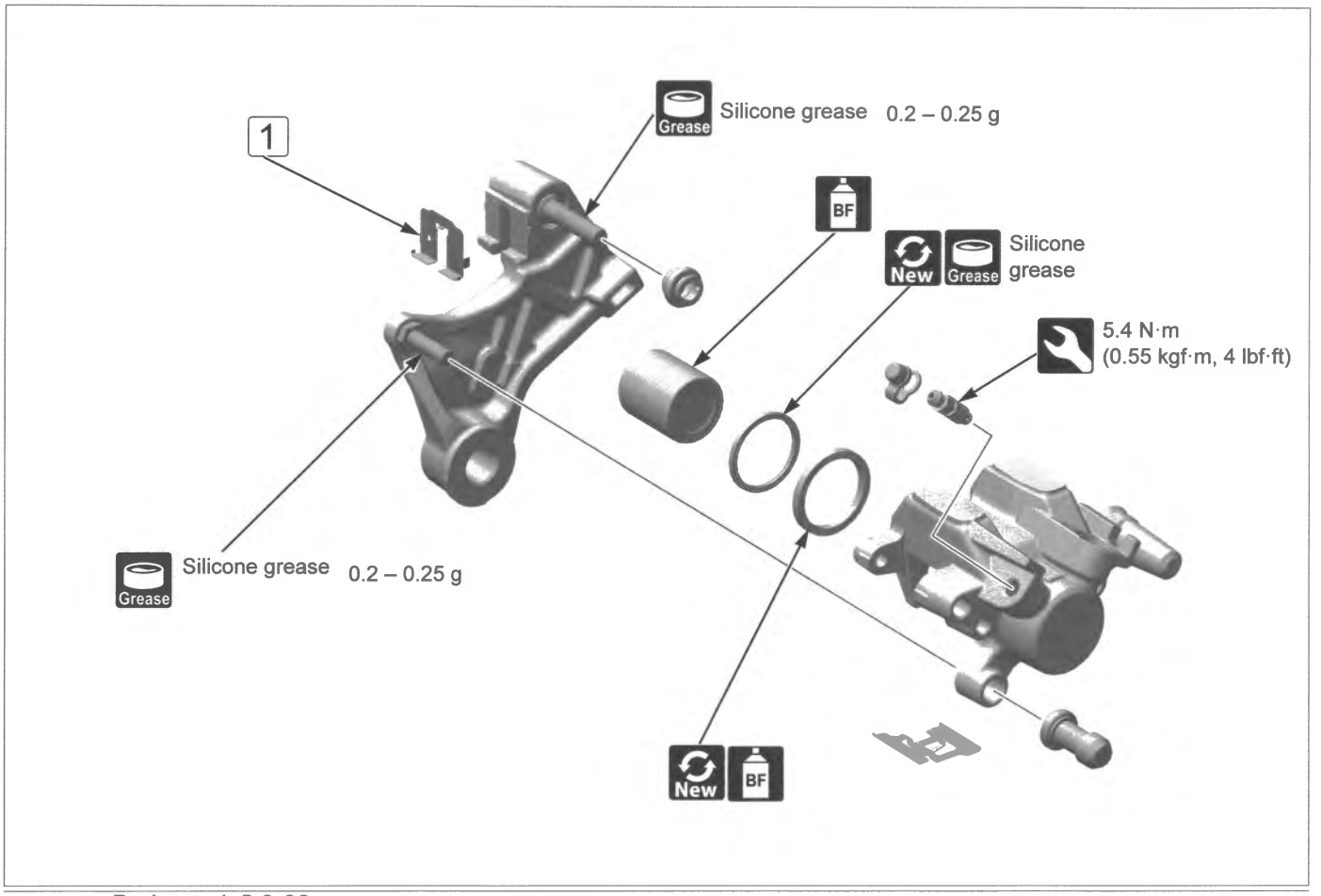
BRAKE CALIPER

BRAKE PAD REPLACEMENT





- Rear wheel ➔3-26



- Brake pad ➔3-33
- [1] Apply Honda Bond A or equivalent to the retainer seating surface.
- Brake caliper inspection

Basic

4. ELECTRICAL SYSTEM

PGM-FI SYSTEM 4-2

IGNITION SYSTEM 4-28

ELECTRICAL STARTER 4-31

ABS 4-36

BATTERY/CHARGING SYSTEM 4-54

LIGHTING SYSTEM 4-57

COMBINATION METER 4-61

ELECTRICAL COMPONENT 4-65

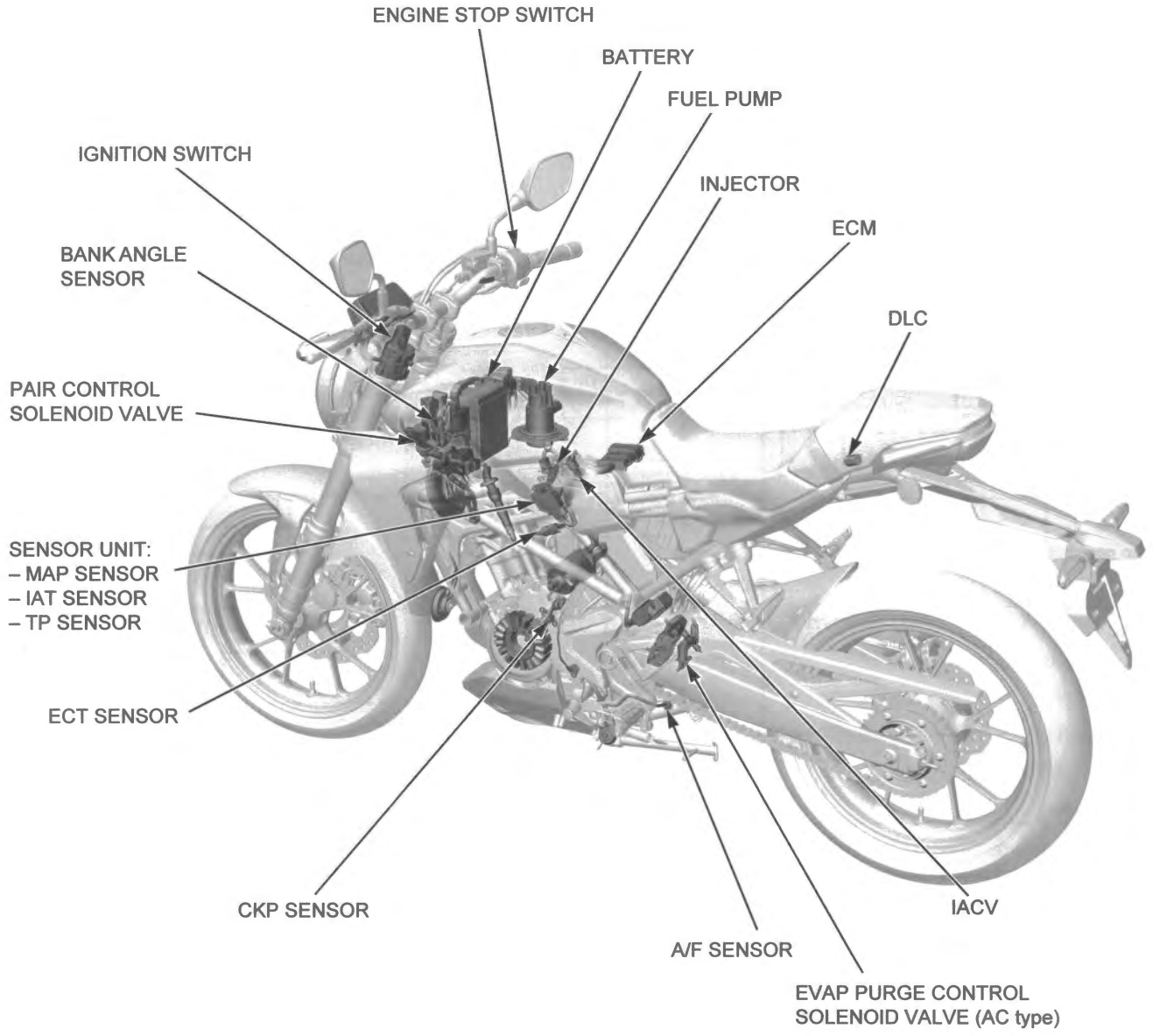
PGM-FI SYSTEM

- Refer to the "Basic Shop manual" for the following information:
  – PGM-FI technical feature and each sensor function.
  – Symptom troubleshooting for the PGM-FI system.
  – MCS (Motorcycle Communication System) information.
- If the MCS or GST is not used, perform all of the inspection on the corresponding main code (digits in front of hyphen) of the DTC.

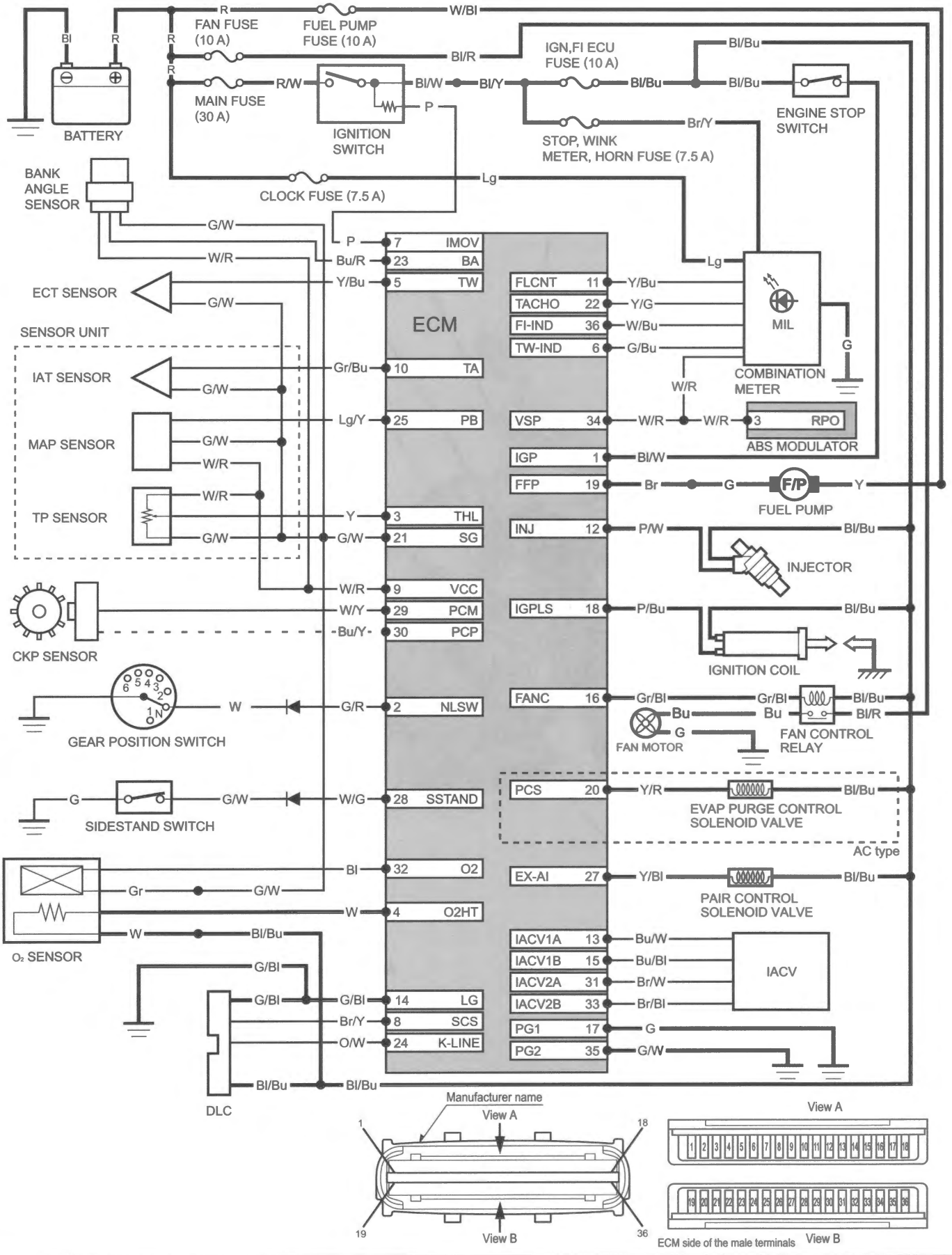
DTC INDEX

DTC	Function Failure	Symptom/Fail-safe function	Page
P0107 (1-1)	MAP sensor malfunction • MAP sensor low voltage	• Engine operates normally	→4-5
P0108 (1-2)	MAP sensor malfunction • MAP sensor high voltage	• Engine operates normally	→4-6
P0117 (7-1)	ECT sensor malfunction • ECT sensor low voltage	• Hard start at a low temperature	→4-7
P0118 (7-2)	ECT sensor malfunction • ECT sensor high voltage	• Hard start at a low temperature	→4-8
P0122 (8-1)	TP sensor malfunction • TP sensor low voltage	• Poor engine acceleration	→4-9
P0123 (8-2)	TP sensor malfunction • TP sensor high voltage	• Poor engine acceleration	→4-10
P0112 (9-1)	IAT sensor malfunction • IAT sensor low voltage	• Engine operates normally	→4-11
P0113 (9-2)	IAT sensor malfunction • IAT sensor high voltage	• Engine operates normally	→4-12
P0201 (12-1)	Injector malfunction	• Engine does not start • Injector, fuel pump, and ignition coil shut down	→4-13
P0131 (21-1)	O_2 sensor malfunction • O_2 sensor low voltage	• Engine operates normally	→4-14
P0132 (21-2)	O_2 sensor malfunction • O_2 sensor high voltage	• Engine operates normally	→4-15
P0135 (23-1)	O_2 sensor heater malfunction	• Engine operates normally	→4-16
P0511 (29-1)	IACV malfunction	• Engine stalls, hard to start, rough idling	→4-17
P062F (33-2)	ECM EEPROM malfunction	• Engine stalls, hard to start, rough idling • Does not hold the self diagnosis data • Does not erase the self diagnosis data with SCS connector	→4-18
P1000 (54-1)	Bank angle sensor malfunction • Bank angle sensor low voltage	• Engine operates normally • Engine stop function does not operate	→4-19
P1001 (54-2)	Bank angle sensor malfunction • Bank angle sensor high voltage	• Engine operates normally • Engine stop function does not operate	→4-20
P2158 (66-1)	VS Sensor Circuit No Signal • No speed signal	• Engine operates normally	→4-21
P0443 (88-1)	EVAP purge control solenoid valve malfunction • Loose or poor contact of the EVAP purge control solenoid valve connector • EVAP purge control solenoid valve or its circuit malfunction	• Engine operates normally	→4-22
P0412 (89-1)	PAIR control solenoid valve malfunction	• Engine operates normally	→4-23
P0351 (91-1)	Ignition coil primary circuit malfunction • Ignition coil or its circuit malfunction	• Engine does not start • Injector and ignition coil shut down	→4-24

PGM-FI SYSTEM LOCATION



PGM-FI SYSTEM DIAGRAM

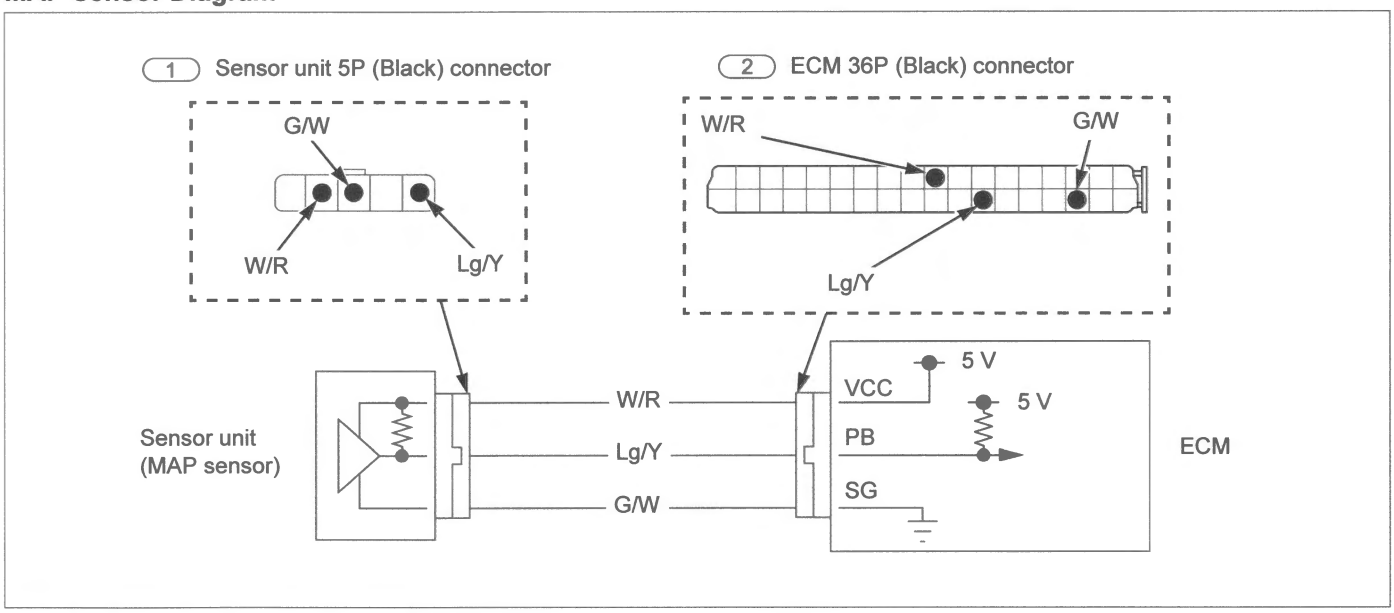


DTC TROUBLESHOOTING

P0107 (MAP SENSOR LOW VOLTAGE)

- Fuel tank ➔2-6

MAP Sensor Diagram



1. MAP Sensor System Inspection

- Check the MAP sensor voltage with the MCS.
- Is the indicated voltage about 0 V ?

No ►
- Intermittent failure
- Loose or poor contact at the connector.

Yes ▼

2. Sensor unit Power Input Voltage Inspection

- Connection: W/R (+) – G/W (–)
- Is the indicated voltage within 4.75 – 5.25 V?

No ►
- Open or short circuit in W/R wire.
- If there is no open or short circuit, replace the ECM with a new one ➔4-25, and recheck.

Yes ▼

3. MAP Sensor Output Voltage Inspection

- Connection: Lg/Y (+) – G/W (–)
- Is the indicated voltage within 3.80 – 5.25 V?

Yes ►
- Replace the sensor unit (MAP sensor) with a new one ➔2-9, and recheck.

No ▼

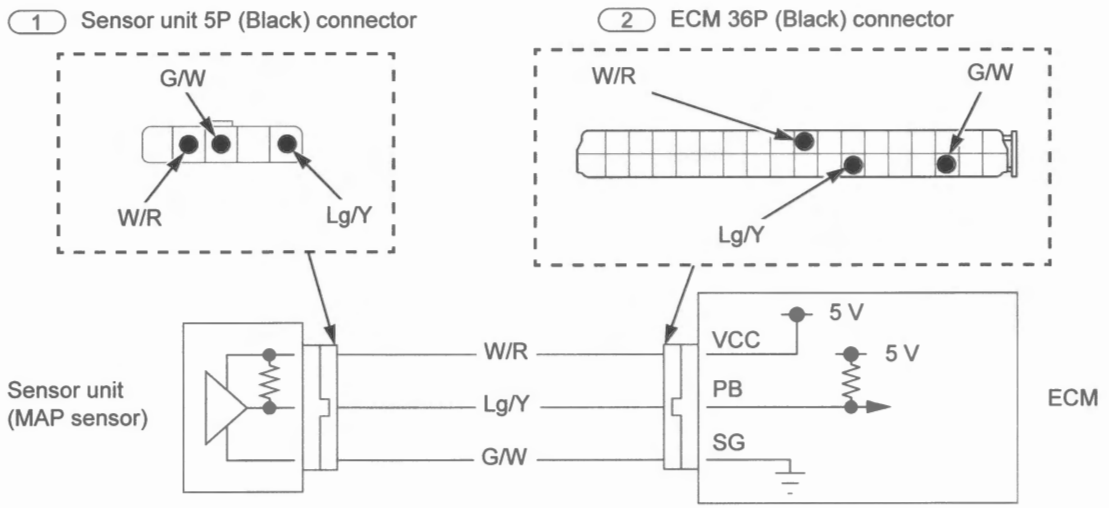
4. MAP Sensor Output Line Inspection

- Check for a short circuit in the Lg/Y wire.
- If there is no short circuit, replace the ECM with a new one ➔4-25, and recheck.

P0108 (MAP SENSOR HIGH VOLTAGE)

- Fuel tank ➔2-6

MAP Sensor Diagram



1. MAP Sensor System Inspection

- Check the MAP sensor voltage with the MCS.
- Is the indicated voltage about 5 V?

No ▶

- Intermittent failure
- Loose or poor contact at the connector.

Yes ▼

2. MAP Sensor Inspection

1

- Install a jumper wire between the terminals.
  Connection: Lg/Y – G/W
- Check the MAP sensor voltage with the MCS.
- Is the indicated voltage about 0 V?

Yes ▶

- Replace the sensor unit (MAP sensor) with a new one ➔2-9, and recheck.

No ▼

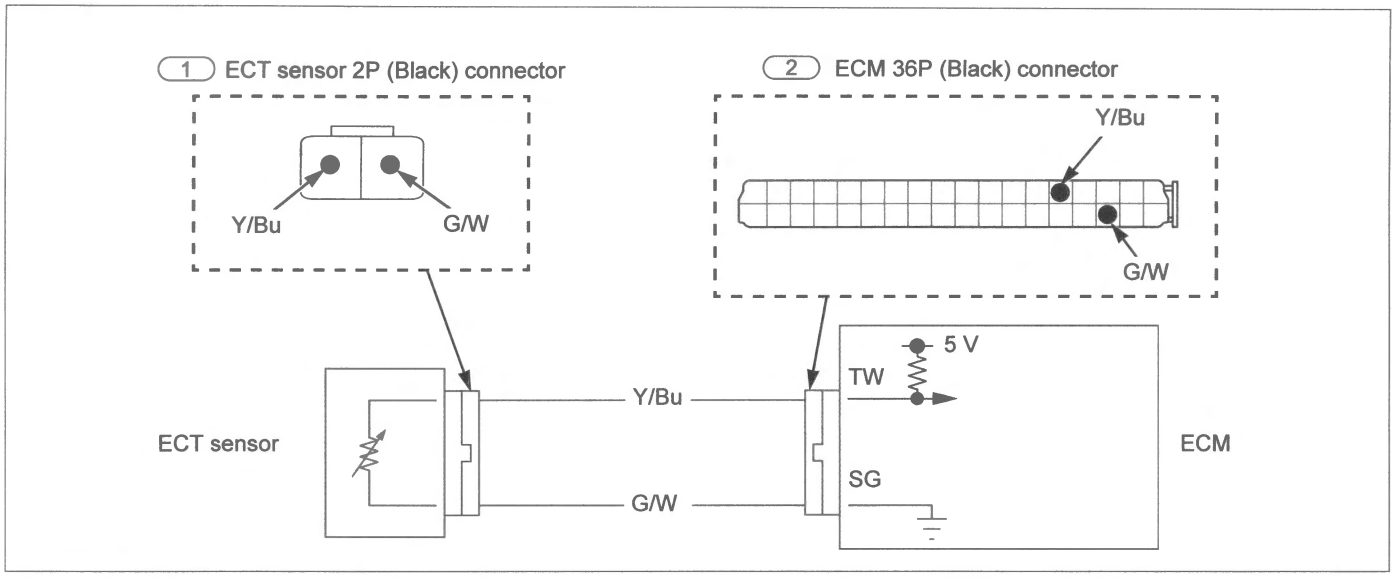
3. MAP Sensor Output Line Inspection

- Check for an open circuit in the Lg/Y and G/W wire.
- If there is no open circuit, replace the ECM with a new one ➔4-25, and recheck.

P0117 (ECT SENSOR LOW VOLTAGE)

- Fuel tank ➔2-6

ECT Sensor Diagram

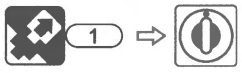


1. ECT Sensor System Inspection

• Check the ECT sensor voltage with the MCS. • Is the indicated voltage about 0 V?	No ►	• Intermittent failure • Loose or poor contact at the connector.

Yes ▼

2. ECT Sensor Inspection

 • Check the ECT sensor voltage with the MCS. • Is the indicated voltage about 0 V?	No ►	• Replace the ECT sensor with a new one ➔4-26, and recheck.

Yes ▼

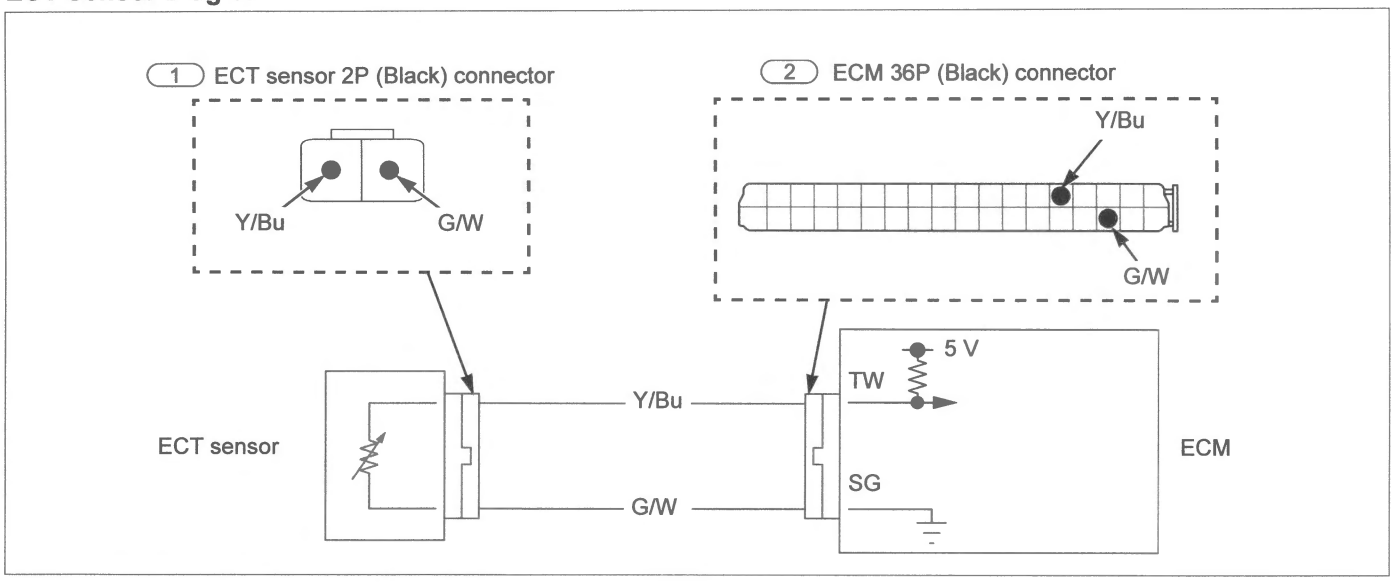
3. ECT Sensor Output Line Inspection

- Check a short circuit in Y/Bu wire.
- If there is no short circuit, replace the ECM with a new one ➔4-25, and recheck.

P0118 (ECT SENSOR HIGH VOLTAGE)

- Fuel tank ➔2-6

ECT Sensor Diagram

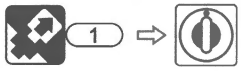


1. ECT Sensor System Inspection

• Check the ECT sensor voltage with the MCS. • Is the indicated voltage about 5 V?	No ►	• Intermittent failure • Loose or poor contact at the connector.

Yes ▼

2. ECT Sensor Inspection

 • Install a jumper wire between the terminals. Connection: Y/Bu – G/W • Check the ECT sensor voltage with the MCS. • Is the indicated voltage about 0 V?	Yes ►	• Replace the ECT sensor with a new one ➔4-26, and recheck.

No ▼

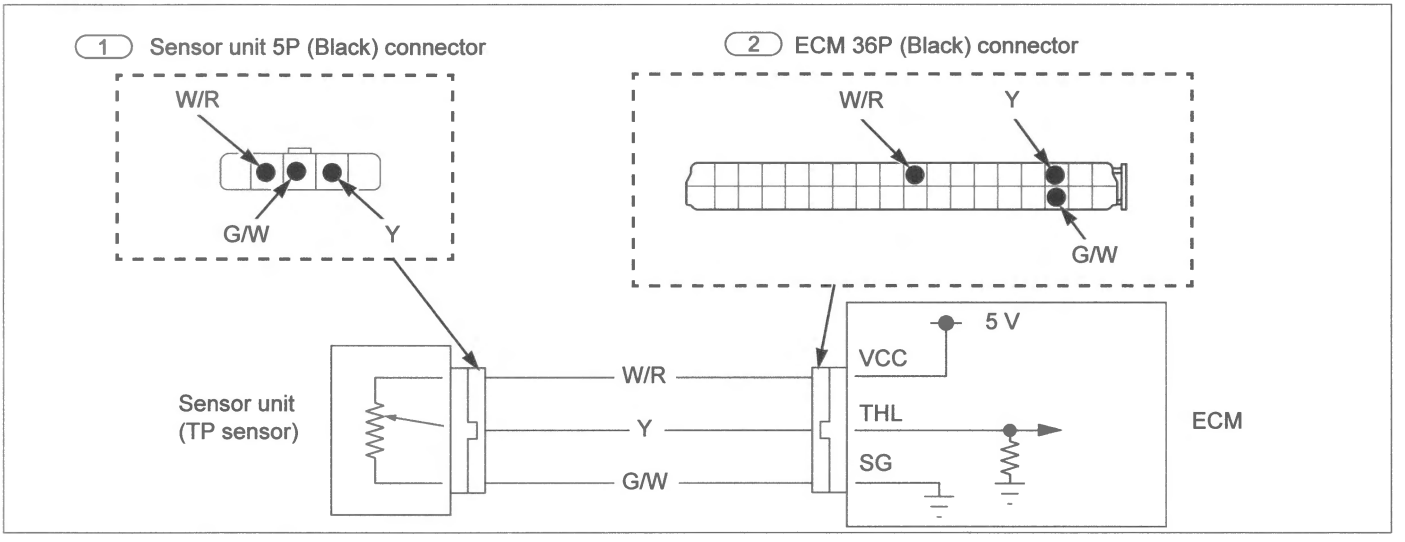
3. ECT Sensor Output Line Inspection

- Check for an open circuit in the Y/Bu and G/W wire.
- If there is no open circuit, replace the ECM with a new one ➔4-25, and recheck.

P0122 (TP SENSOR LOW VOLTAGE)

- Fuel tank ➔2-6

TP Sensor Diagram



1. TP Sensor System Inspection

• Check the TP sensor voltage with the MCS. • Is the indicated voltage about 0 V?	No ►	• Intermittent failure • Loose or poor contact at the connector.

Yes ▼

2. Sensor unit Power Input Voltage Inspection

• Connection: W/R (+) – G/W (–) • Is the indicated voltage within 4.75 – 5.25 V?	No ►	• Open or short circuit in W/R wire • If there is no open or short circuit, replace the ECM with a new one ➔4-25, and recheck.

Yes ▼

3. TP Sensor Output Line Inspection

• Check a open or short circuit in Y wire. • Is there an open or short circuit?	Yes ►	• Faulty Y wire

No ▼

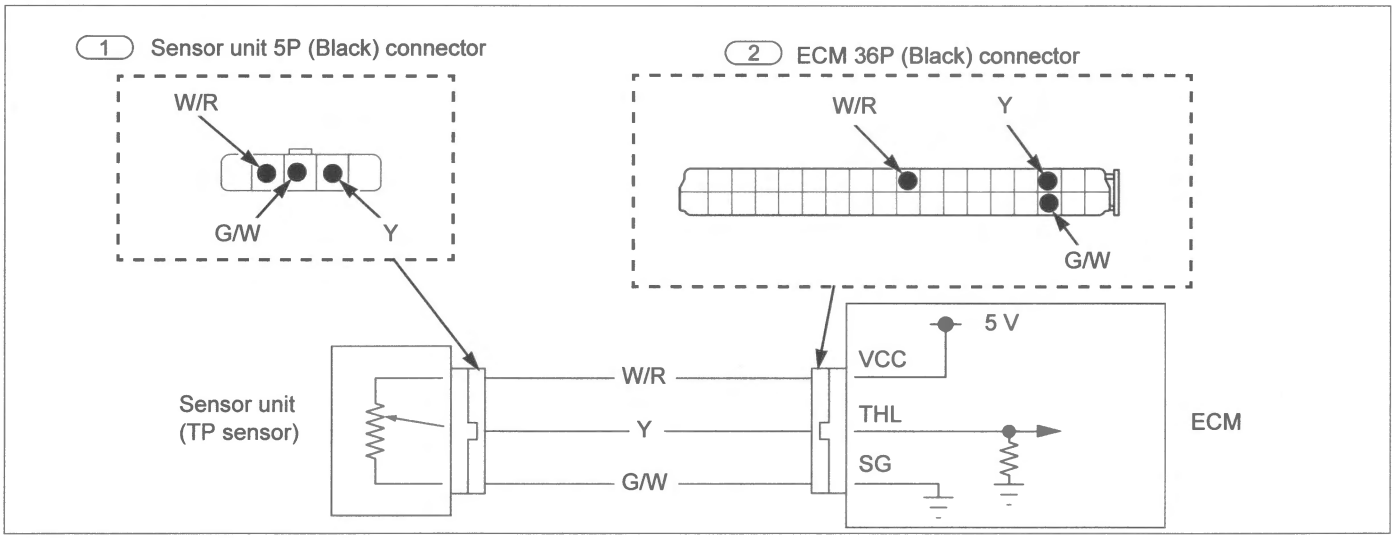
4. TP Sensor Inspection

- Replace the sensor unit (TP sensor) with a new one ➔2-9
- Erase the DTC.
- Check the TP sensor with the MCS.
- If DTC P0122 is indicated, replace the ECM with a new one ➔4-25, and recheck.

P0123 (TP SENSOR HIGH VOLTAGE)

- Fuel tank ➔2-6

TP Sensor Diagram



1. TP Sensor System Inspection

- Check the TP sensor voltage with the MCS when the throttle is fully closed.
- Is the indicated voltage about 5 V?

No ▶

- Check the TP sensor voltage with the MCS.
- Operate the throttle from fully closed to fully open.
- If the voltage does not increase continuously, replace the sensor unit (TP sensor) with a new one ➔2-9, and recheck.

Yes ▼

2. TP Sensor Ground Line Inspection

- Check a open circuit in G/W wire.
- Is there open circuit?

Yes ▶

- Faulty G/W wire

No ▼

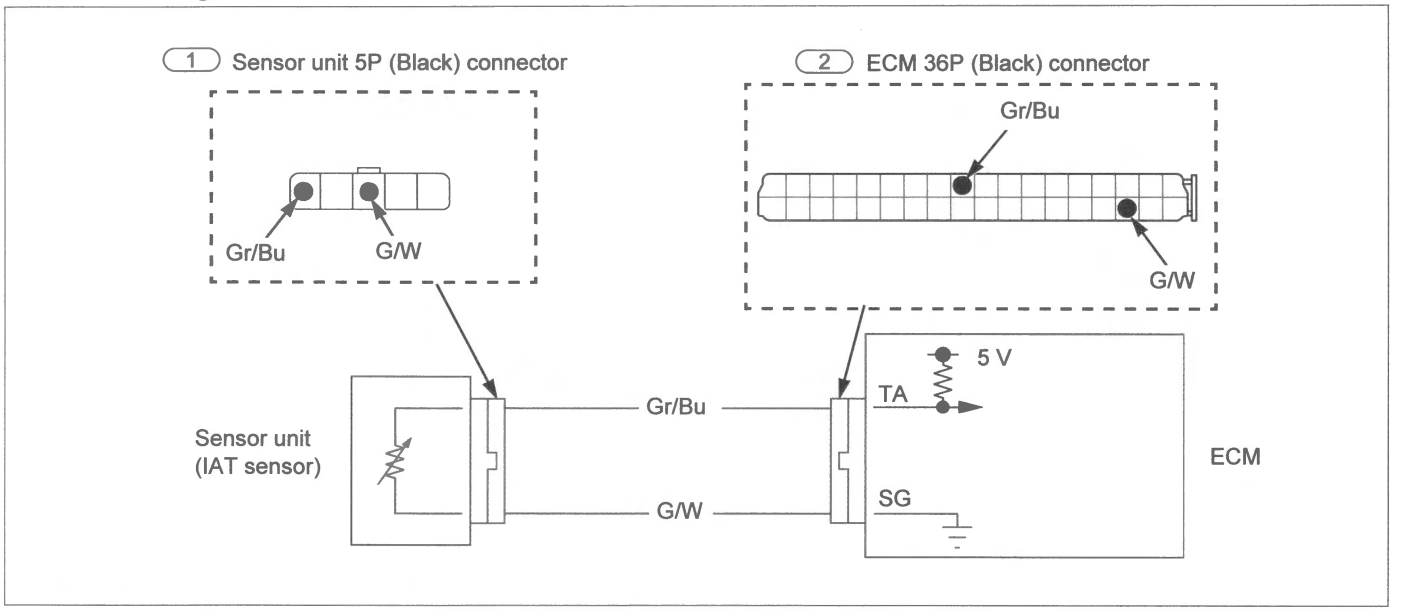
3. TP Sensor Inspection

- Replace the sensor unit (TP sensor) with a new one ➔2-9
- Erase the DTC.
- Check the TP sensor with the MCS.
- If DTC P0123 is indicated, replace the ECM with a new one ➔4-25, and recheck.

P0112 (IAT SENSOR LOW VOLTAGE)

- Fuel tank ➔2-6

IAT Sensor Diagram



1. IAT Sensor System Inspection

- Check the IAT sensor voltage with the MCS.
- Is the indicated voltage about 0 V?

No ►

- Intermittent failure
- Loose or poor contact at the connector.

Yes ▼

2. IAT Sensor Inspection

- Check the IAT sensor voltage with the MCS.
- Is the indicated voltage about 0 V?

No ►

- Replace the sensor unit (IAT sensor) with a new one ➔2-9, and recheck.

Yes ▼

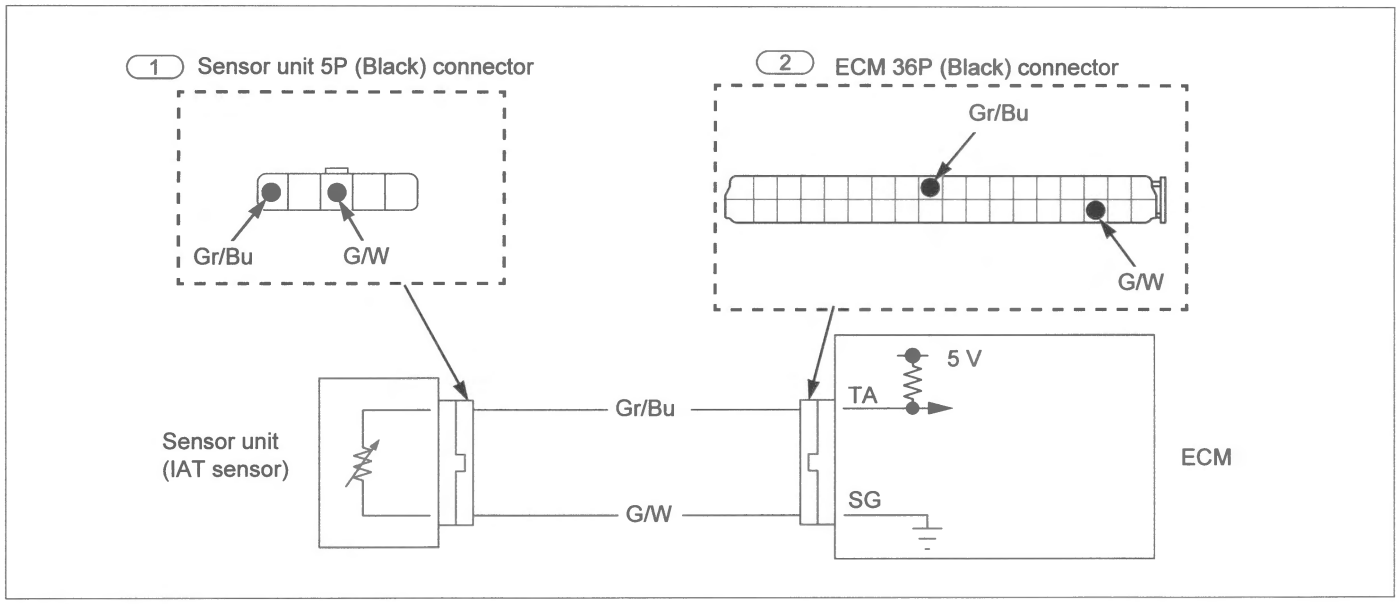
3. IAT Sensor Output Line Inspection

- Check a short circuit in Gr/Bu wire.
- If there is no short circuit, replace the ECM with a new one ➔4-25, and recheck.

P0113 (IAT SENSOR HIGH VOLTAGE)

- Fuel tank ➔2-6

IAT Sensor Diagram



1. IAT Sensor System Inspection

- Check the IAT sensor voltage with the MCS.
- Is the indicated voltage about 5 V?

No ▶

- Intermittent failure
- Loose or poor contact at the connector.

Yes ▼

2. IAT sensor Inspection

1 ⇨

- Install a jumper wire between the terminals.
  Connection: Gr/Bu – G/W
- Check the IAT sensor voltage with the MCS.
- Is the indicated voltage about 0 V?

Yes ▶

- Replace the sensor unit (IAT sensor) with a new one ➔2-9, and recheck.

No ▼

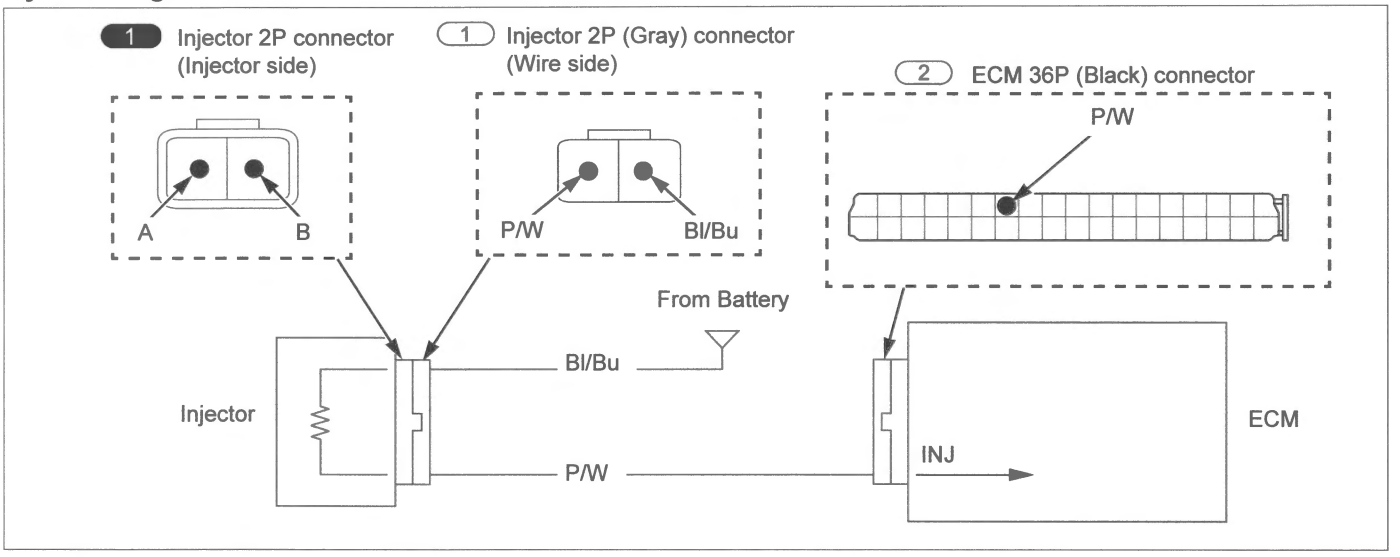
3. IAT Sensor Voltage Input Line Inspection

- Check for an open circuit in the Gr/Bu and G/W wire.
- If there is no open circuit, replace the ECM with a new one ➔4-25, and recheck.

P0201 (INJECTOR)

- Fuel tank ➔2-6

Injector Diagram



1. Fuel Injector System Inspection

- Check the fuel injector with the MCS.
- Is DTC P0201 is indicated?

No ►
- Intermittent failure
- Loose or poor contact at the connector.

Yes ▼

2. Fuel Injector Input Voltage Inspection

- Connection: Bl/Bu (+) – Ground (–)
- Is there any battery voltage?

No ►
- Open circuit in Bl/Bu wire

Yes ▼

3. Fuel Injector Signal Line Inspection

- Check an open or short circuit in P/W wire.
- Is there any battery voltage?

Yes ►
- Faulty P/W wire

No ▼

4. Fuel Injector Resistance inspection

- Connection: A – B
- Is the resistance within 11 – 13 Ω (20°C)?

No ►
- Faulty fuel injector

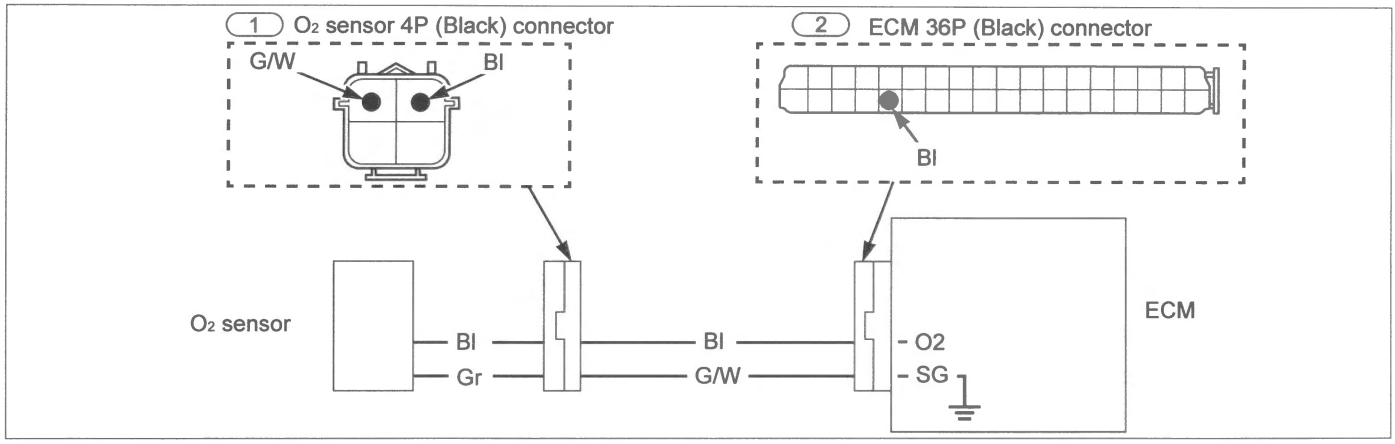
Yes ▼

- Replace the ECM with a new one ➔4-25, and recheck.

P0131 (O_2 SENSOR LOW VOLTAGE)

- Fuel tank ➔2-6

O_2 Sensor Diagram



1. O_2 Sensor System Inspection

• Test-ride the vehicle and check the O_2 sensor with the MCS. • Is DTC P0131 indicated?	No ▶	• Intermittent failure • Loose or poor contact at the connector.

Yes ▼

2. O_2 Sensor Circuit Inspection

• Check the short circuit in Bl wire. • Is there a short circuit?	Yes ▶	• Faulty Bl wire.

No ▼

3. Fuel Supply Test (Fuel Pressure Test)

• Perform the fuel pressure test. ➔2-3 • Is the fuel pressure within specification?	No ▶	• Check the gauge needle in the pressure gauge for any erratic swinging or vibrations. – If the needle is swinging or vibrating, replace the fuel filter. ➔2-5 – If the needle is stable, replace the fuel pump unit. ➔2-4

Yes ▼

4. Fuel Supply Test (Fuel Flow Test)

• Adjust the fuel in the tank until the fuel gauge segment is positioned the specified range, and inspect the fuel flow.➔2-3 • Is the fuel flow within specification?	No ▶	• Replace the fuel filter. ➔2-5

Yes ▼

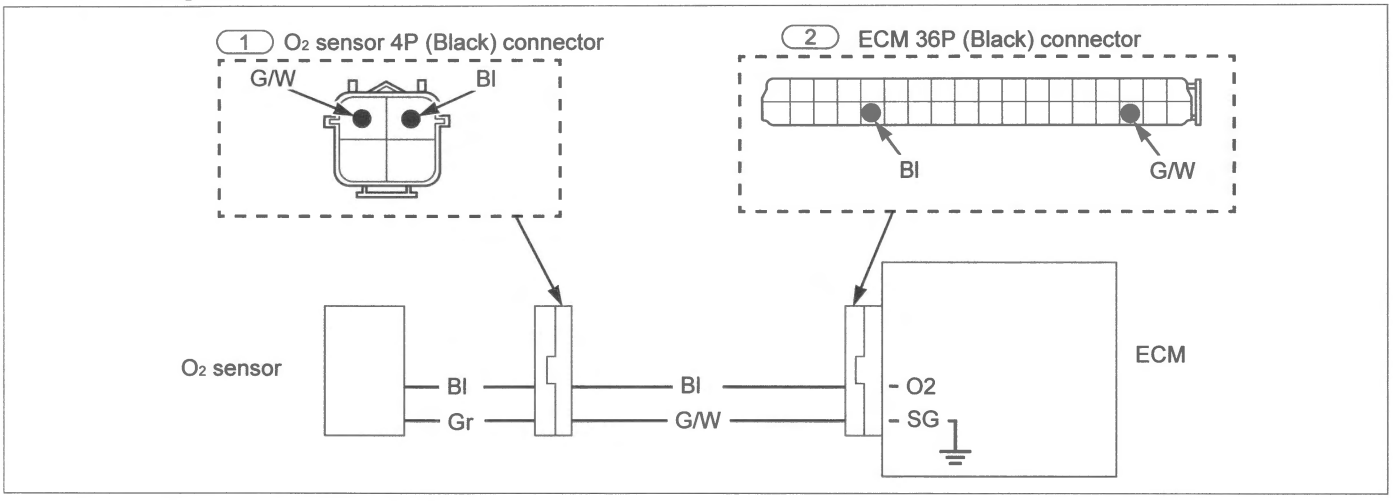
5. O_2 Sensor Inspection

- Replace the O_2 sensor with a new one. ➔4-26
- Erase the DTC's.
- Test-ride the vehicle and check the O_2 sensor with the MCS.
- If DTC P0131 is indicated, replace the ECM with a new one ➔4-25, and recheck.

P0132 (O_2 SENSOR HIGH VOLTAGE)

- Fuel tank ➔2-6

O_2 Sensor Diagram



1. O_2 Sensor System Inspection

- Test-ride the vehicle and check the O_2 sensor with the MCS.
- Is DTC P0132 indicated?

No ►
- Intermittent failure
- Loose or poor contact at the connector.

Yes ▼

2. O_2 Sensor Circuit Inspection

- Check the open circuit in Bl, Gr and G/W wires.
- Are there open circuits?

Yes ►
- Faulty Bl, Gr or G/W wire.

No ▼

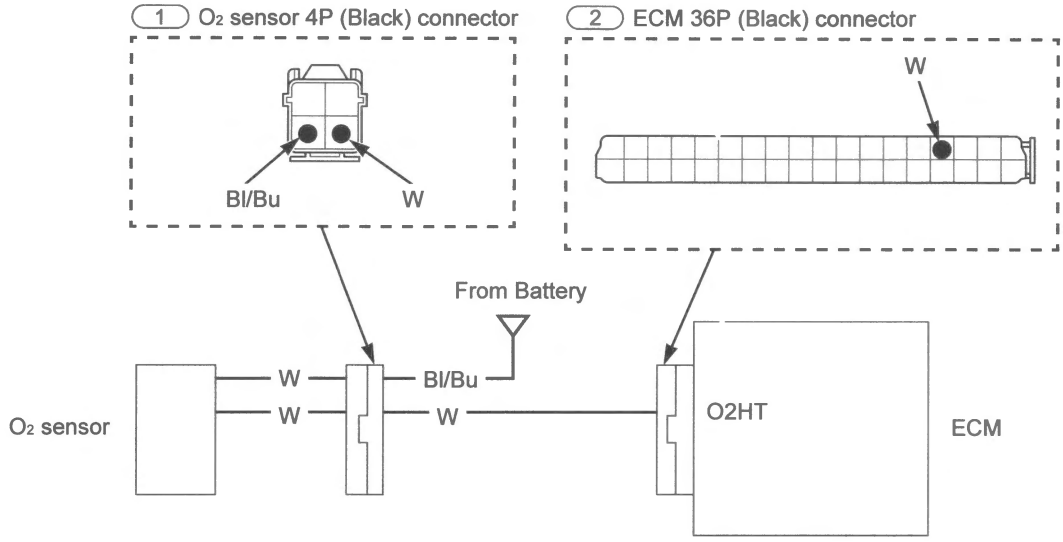
3. O_2 Sensor Inspection

- Replace the O_2 sensor with a new one. ➔4-26
- Erase the DTC.
- Test-ride the vehicle and check the O_2 sensor with the MCS.
- If DTC P0132 is indicated, replace the ECM with a new one ➔4-25, and recheck.

P0135 (O_2 SENSOR HEATER)

- Fuel tank ➔2-6

O_2 Sensor Diagram



1. O_2 Sensor Heater Line Inspection

1 2

- Check for an open or short circuit in the W wire.
- Is there an open or short circuit?

Yes ▶
- Faulty W wire

No ▼

2. O_2 Sensor Heater Input Voltage Inspection

1 ⇨ ⇨ 1

- Connection: Bl/Bu (+) – Ground (–)
- Does the battery voltage exist?

Yes ▶
- Faulty Bl/Bu wire

No ▼

3. O_2 Sensor Inspection

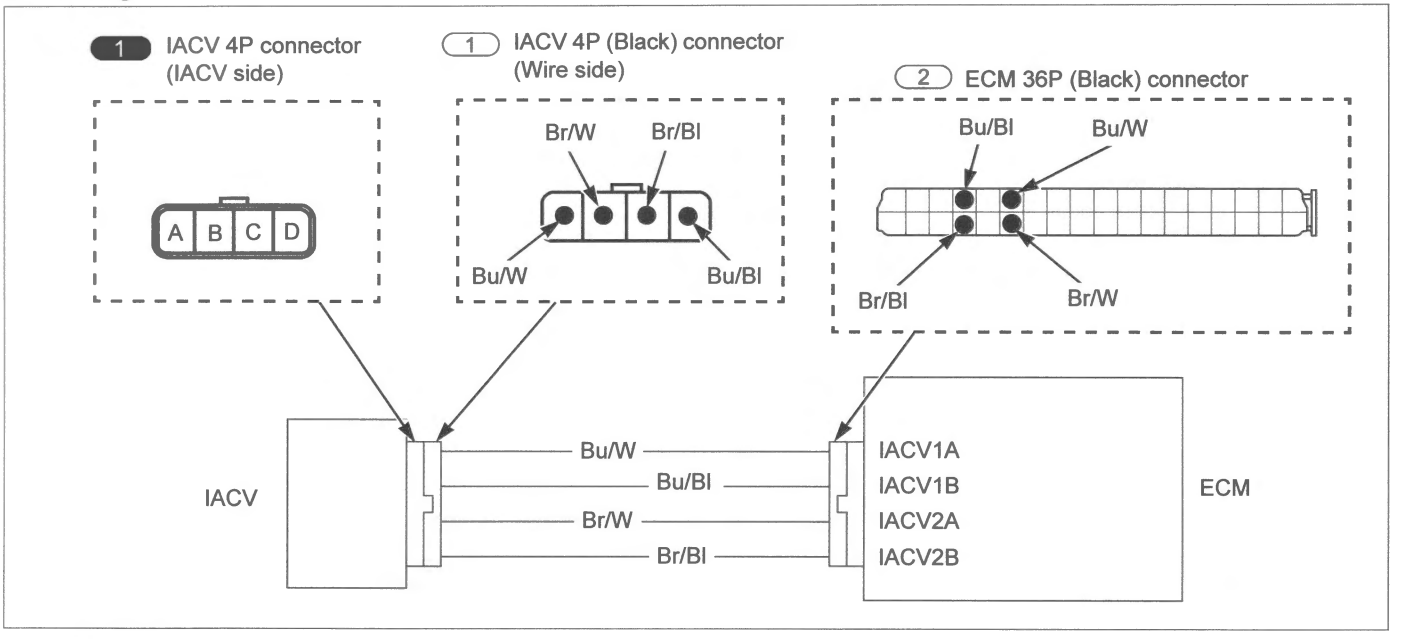
2

- Replace the O_2 sensor with a new one. ➔4-26
- Erase the DTC.
- Start the engine and wait for a minute.
- Check the DTC with the MCS.
- If the same DTC is indicated, replace the ECM with a new one ➔4-25, and recheck.

P0511 (IACV)

- Fuel tank ➔2-6

IACV Diagram



1. IACV System Inspection

• Check the IACV with the MCS. • Is DTC P0511 indicated?	No ►	• Intermittent failure • Loose or poor contact at the connector.

Yes ▼

2. IACV Circuit Inspection

• Check for an open or short circuit in the Bu/W, Br/W, Br/Bl and Bu/Bl wires. • Is there an open or short circuit?	Yes ►	• Faulty Bu/W, Br/W, Br/Bl or Bu/Bl wire

No ▼

3. IACV Resistance Inspection

 • Connection: A – D, B – C • Is the resistance within 90 – 130 Ω (25°C)?	No ►	• Faulty IACV

Yes ▼

4. IACV Short Circuit Inspection

• Connection: A – B, C – D • Is there continuity?	Yes ►	• Faulty IACV

No ▼

- Replace the ECM with a new one ➔4-25, and recheck.

P062F (EEPROM)

1. EEPROM System Inspection

- Check the EEPROM with the MCS.
- Is DTC P062F indicated?

No ▶

- Intermittent failure
- Loose or poor contact at the connector.

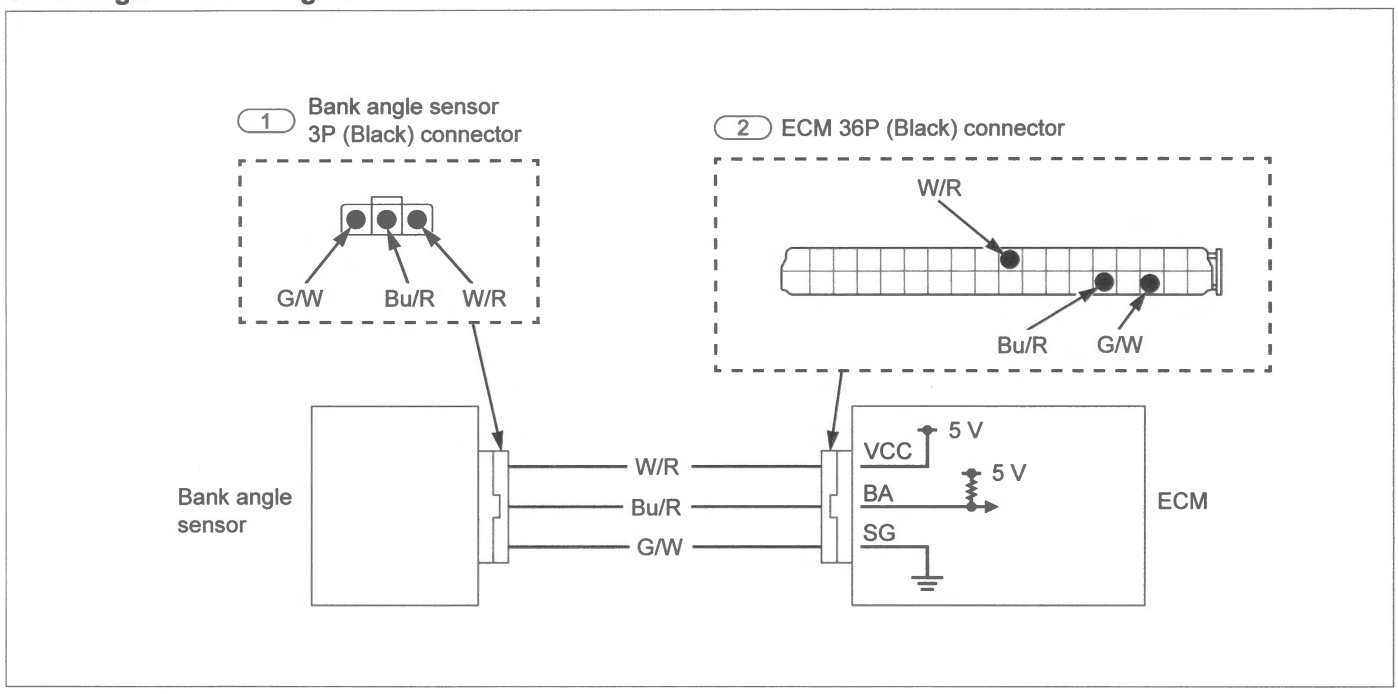
Yes ▼

- Replace the ECM with a new one ➔4-25, and recheck.

P1000 (BANK ANGLE SENSOR LOW VOLTAGE)

- Battery box ➔4-56

Bank Angle Sensor Diagram



1. Bank Angle Sensor System Inspection

- Check the bank angle sensor voltage with the MCS.
- Is the indicated voltage about 0 V?

No ►

- Intermittent failure
- Loose or poor contact at the connector.

Yes ▼

2. Bank Angle Sensor Power Input Voltage Inspection

- Connection: W/R (+) – G/W (–)
- Is the indicated voltage about 5 V?

No ►

- Faulty W/R wire
- If there is no open or short circuit, replace the ECM with a new one ➔4-25, and recheck.

Yes ▼

3. Bank Angle Sensor Output Line Inspection

- Check for a short circuit in Bu/R wire.
- Is there a short circuit?

Yes ►

- Faulty Bu/R wire

No ▼

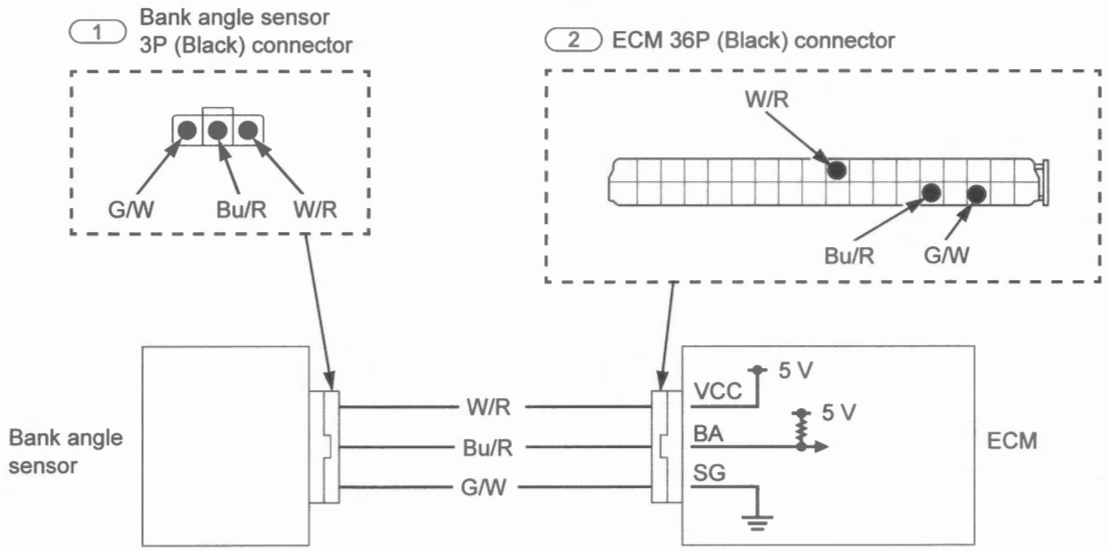
4. Bank Angle Sensor Inspection

- Replace the bank angle sensor with a new one. ➔4-27
- Erase the DTC's.
- Check the bank angle sensor with the MCS.
- If P1000 is indicated, replace the ECM with a new one ➔4-25, and recheck.

P1001 (BANK ANGLE SENSOR HIGH VOLTAGE)

- Bank angle sensor (Connector is connected.) ➔4-27

Bank Angle Sensor Diagram



1. Bank Angle Sensor System Inspection

- Check the bank angle sensor voltage with the MCS.
- Is the indicated voltage about 5 V?

No ►
- Intermittent failure
- Loose or poor contact at the connector.

Yes ▼

2. Bank Angle Sensor Power Input Voltage Inspection

- Connection: W/R (+) – G/W (–)
- Is the indicated voltage about 5 V?

No ►
- Faulty G/W wire

Yes ▼

3. Bank Angle Sensor Output Line Inspection

- Check for an open circuit in the Bu/R wire.
- Is there an open circuit?

Yes ►
- Faulty Bu/R wire

No ▼

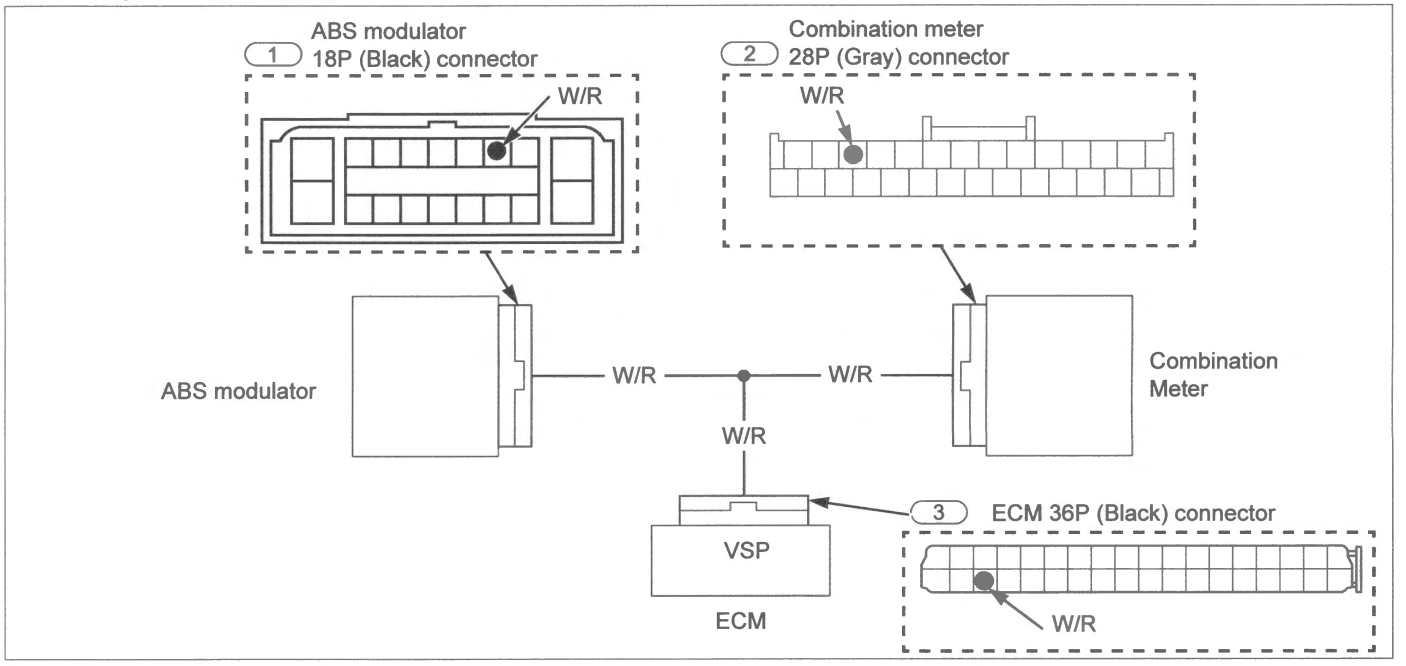
4. Bank Angle Sensor Inspection

- Replace the bank angle sensor with a new one. ➔4-27
- Erase the DTC's.
- Check the bank angle sensor with the MCS.
- If P1001 is indicated, replace the ECM with a new one ➔4-25, and recheck.

P2158 (NO SPEED SIGNAL)

- Fuel tank ➔2-6
- Meter cover ➔4-57

Speed Signal Diagram



1. Speedometer Inspection

- Test-ride the motorcycle and check the speedometer operation.
- Does the speedometer operate normally?

Yes ► • Replace the ECM with a new one ➔4-25, and recheck.

No ▼

2. Speed Sensor Signal Line Inspection

3

- Check for open or short circuit in the W/R wire.
- Is there open or short circuit?

Yes ► • Faulty W/R wire

No ▼

3. ABS modulator Inspection

1

- Replace the ABS modulator with a new one. ➔4-53
- Erase the DTC.
- Test-ride the motorcycle.
- Check the DTC with the MCS.
- Is the same DTC indicated?

No ► • Faulty original ABS modulator.

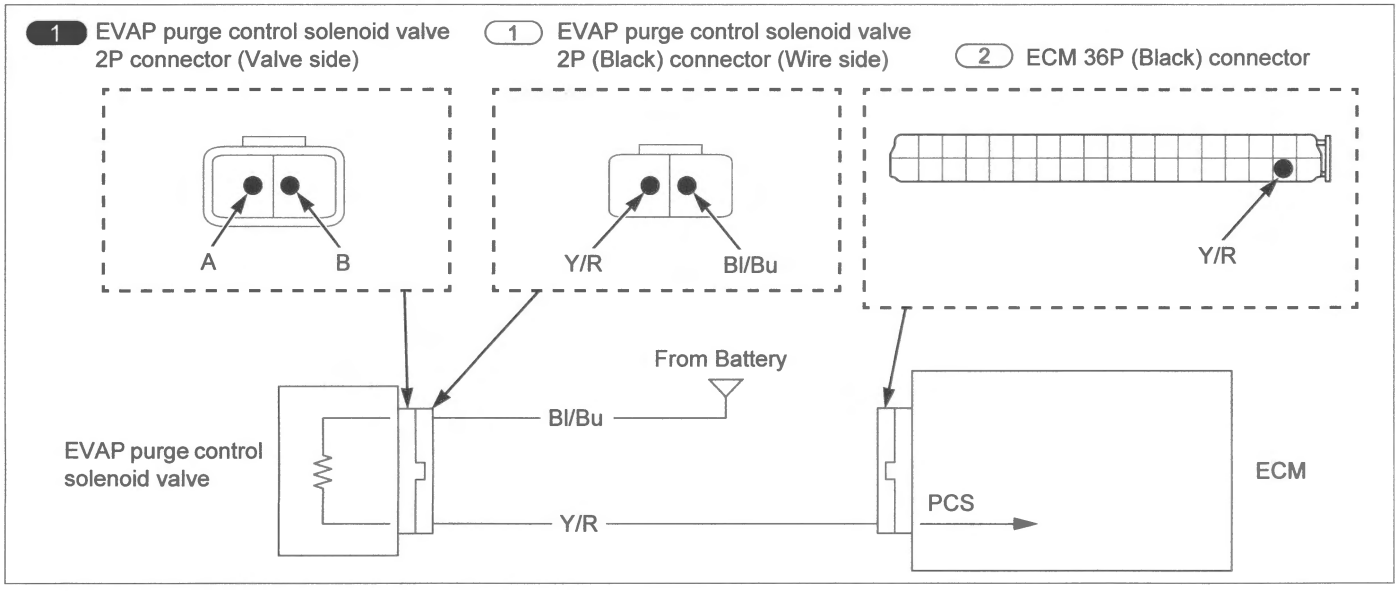
Yes ▼

- Replace the combination meter with a new one ➔4-61, and recheck.

P0443 (EVAP PURGE CONTROL SOLENOID VALVE)

- Fuel tank ➔2-6

EVAP Purge Control Solenoid Valve Diagram



1. EVAP Purge Control Solenoid Valve System Inspection

- Check the EVAP purge control solenoid valve with the MCS.
- Is DTC P0443 indicated?

No ▶
- Intermittent failure
- Loose or poor contact at the connector.

Yes ▼

2. EVAP Purge Control Solenoid Valve Input Voltage Inspection

- Connection: Bl/Bu (+) – Ground (–)
- Does the battery voltage exist?

No ▶
- Faulty Bl/Bu wire

Yes ▼

3. EVAP Purge Control Solenoid Valve Signal Line Inspection

- Check for an open or short circuit in Y/R wire.
- Is there an open or short circuit?

Yes ▶
- Faulty Y/R wire

No ▼

4. EVAP Purge Control Solenoid Valve Resistance inspection

- Connection: A – B
- Is the resistance within 36 – 44 Ω (20°C)?

No ▶
- Faulty EVAP purge control solenoid valve.

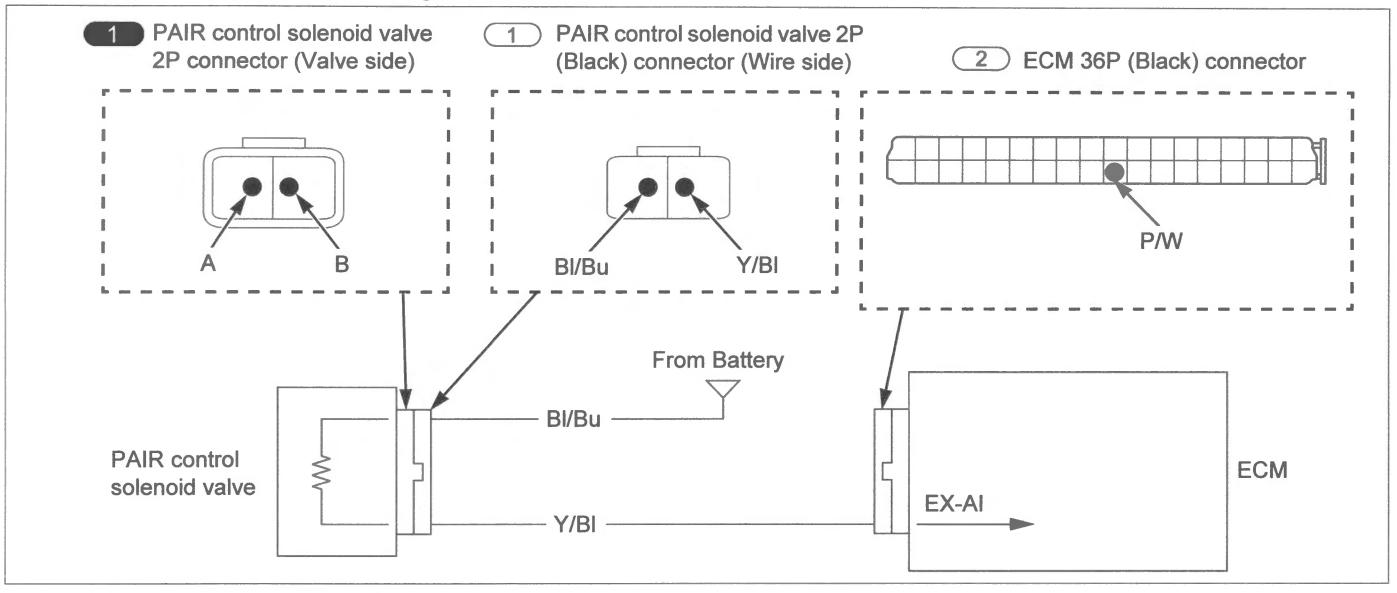
Yes ▼

- Replace the ECM with a new one ➔4-25, and recheck.

P0412 (PAIR CONTROL SOLENOID VALVE)

- Fuel tank ➔2-6

PAIR Control Solenoid Valve Diagram



1. PAIR Control Solenoid Valve System Inspection

- Check the PAIR Control Solenoid Valve with the MCS.
- Is DTC P0412 indicated?

No ▶
- Intermittent failure
- Loose or poor contact at the connector.

Yes ▼

2. PAIR Control Solenoid Valve Input Voltage Inspection

- Connection: Bl/Bu (+) – Ground (–)
- Is there battery voltage?

No ▶
- Faulty Bl/Bu wire

Yes ▼

3. PAIR Control Solenoid Valve Signal Line Inspection

- Check for an open or short circuit in Y/Bl wire.
- Is there an open or short circuit?

Yes ▶
- Faulty Y/Bl wire

No ▼

4. PAIR Control Solenoid Valve Resistance Inspection

- Connection: A – B
- Is the resistance within 20 – 24 Ω (20°C)?

No ▶
- Faulty PAIR Control Solenoid Valve

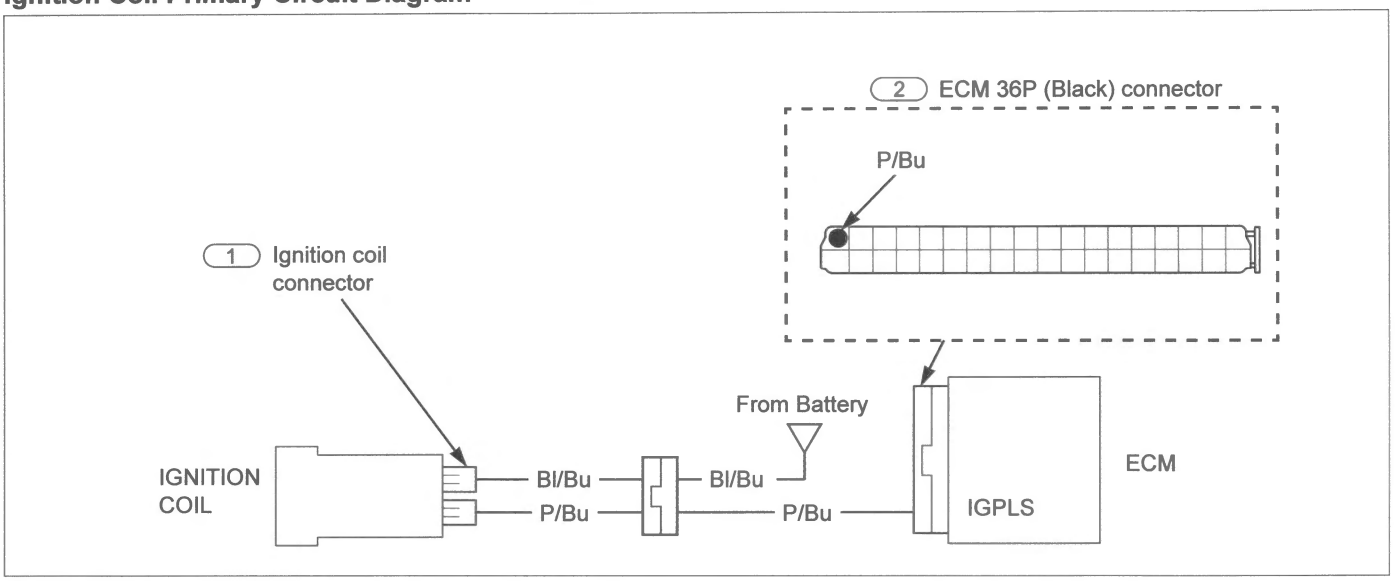
Yes ▼

- Replace the ECM with a new one ➔4-25, and recheck.

P0351 (IGNITION COIL PRIMARY CIRCUIT)

- Battery box ➔4-56

Ignition Coil Primary Circuit Diagram



1. Ignition Coil Primary Circuit System Inspection

• Check the Ignition coil with the MCS. • Is DTC P0351 indicated?	No ▶	• Intermittent failure • Loose or poor contact at the connector.

Yes ▼

2. Ignition Coil Primary Circuit Input Voltage Inspection

• Connection: Bl/Bu (+) – Ground (–) • Is there battery voltage?	No ▶	• Faulty Bl/Bu wire

Yes ▼

3. Ignition Coil Primary Circuit Signal Line Inspection

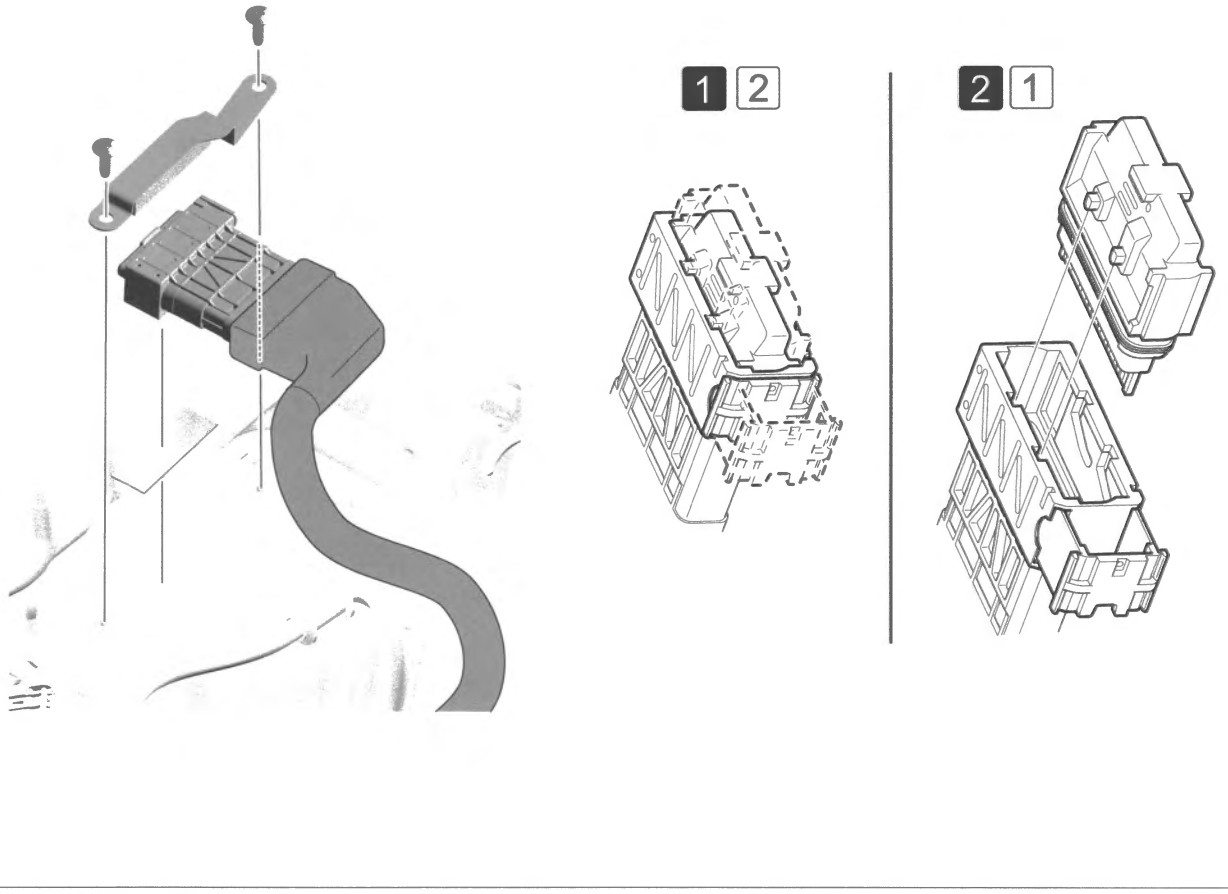
• Check for an open or short circuit in P/Bu wire • Is there an open or short circuit?	Yes ▶	• Faulty P/Bu wire

No ▼

4. Ignition Coil Inspection

- Replace the ignition coil with a new one ➔4-56
- Erase the DTC's.
- Test-ride the vehicle and check the ignition coil with the MCS.
- If DTC P0351 is indicated, replace the ECM with a new one ➔4-25, and recheck.

ECM



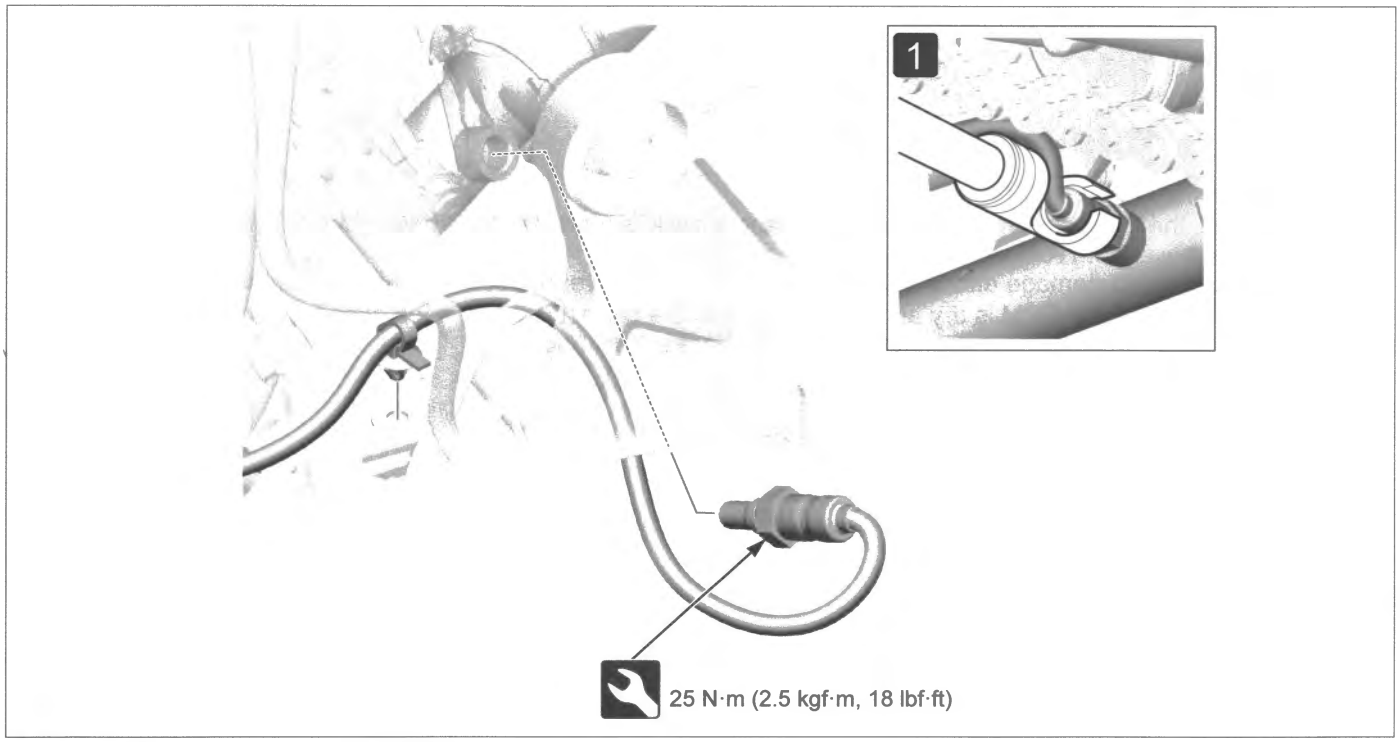
- Fuel tank ➔2-6
- 1 Pull the ECM cover lock tab until you hear a "click" sound before removing the ECM rom.
- 2 Remove ECM rom from ECM cover.
  To prevent damage and to keep foreign matter out, cover the connector with the plastic bag.
- [1] Make sure the ECM is dry and the rubber is in the correct position, then align ECM rom with ECM cover.
- [2] Push ECM lock cover completely until you hear a "click" sound.
- ECM power circuit and ground circuit inspection

Basic

ECT SENSOR

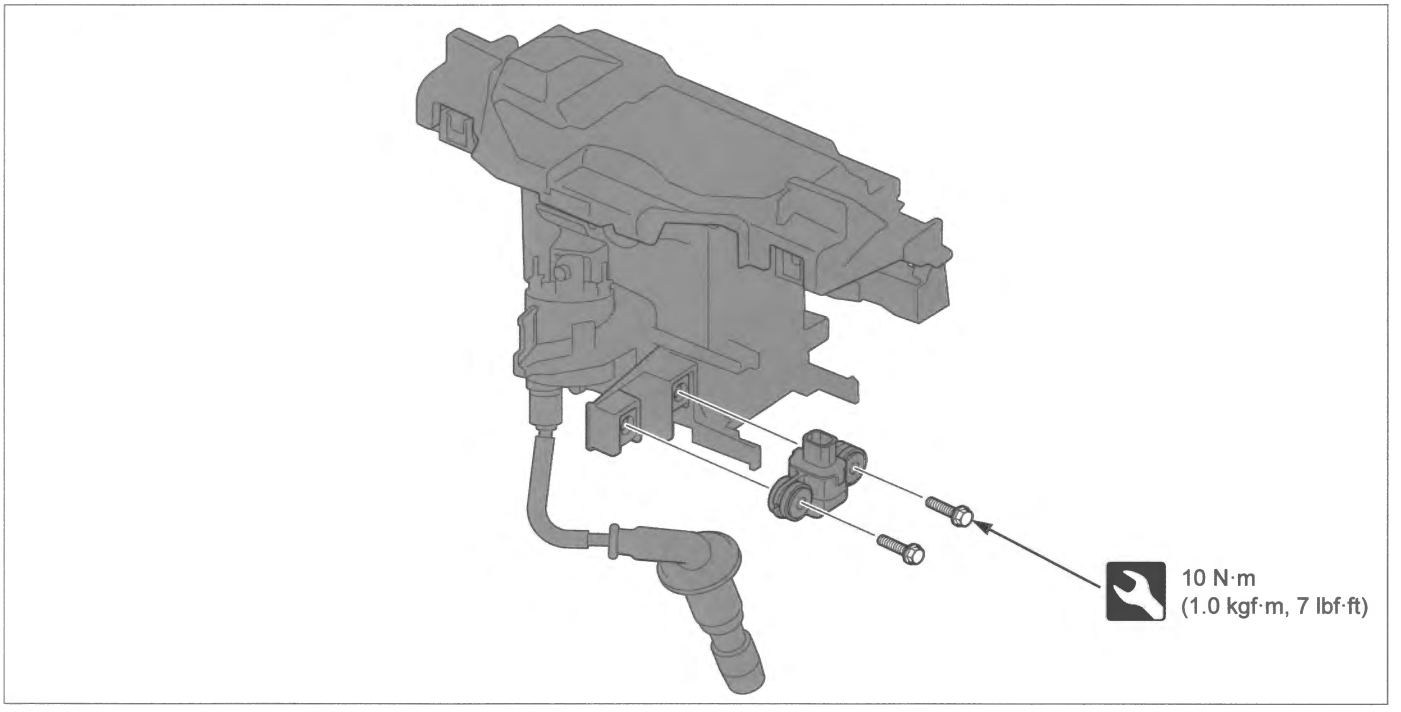
- Engine ➔2-41
- ECT sensor inspection

O_2 SENSOR



- Drive sprocket cover ➔3-10
- 1 Remove the O_2 sensor.
  Flare nut socket: FRXM17 (Snap on) or equivalent

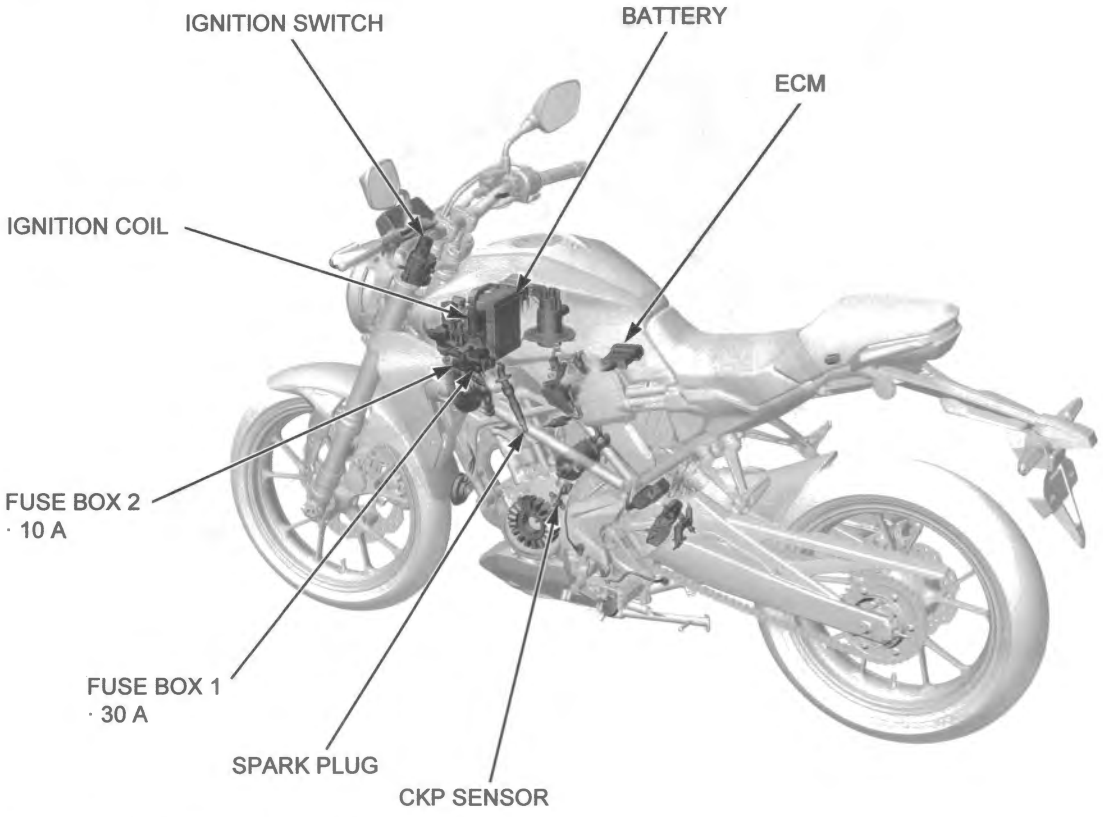
BANK ANGLE SENSOR



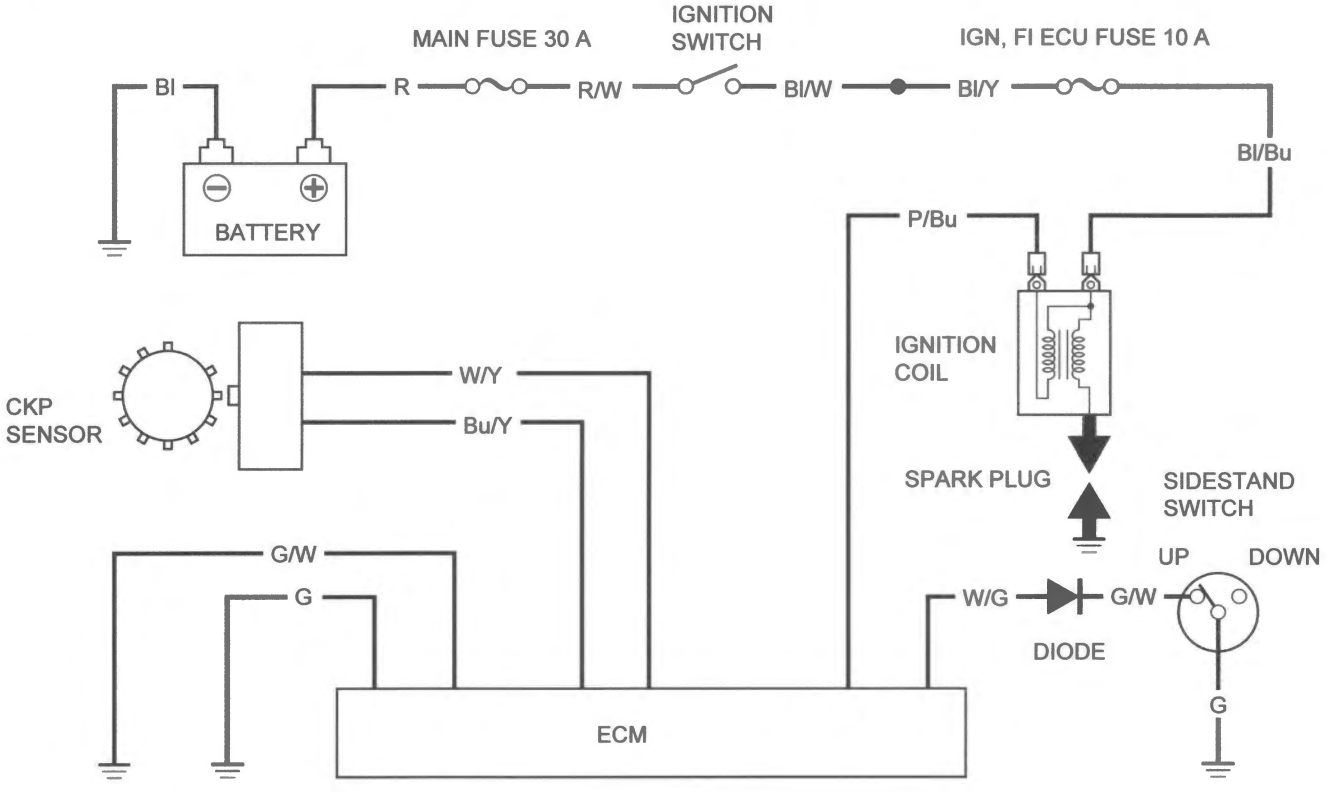
- Battery box ➔4-56
- Bank angle sensor inspection

IGNITION SYSTEM

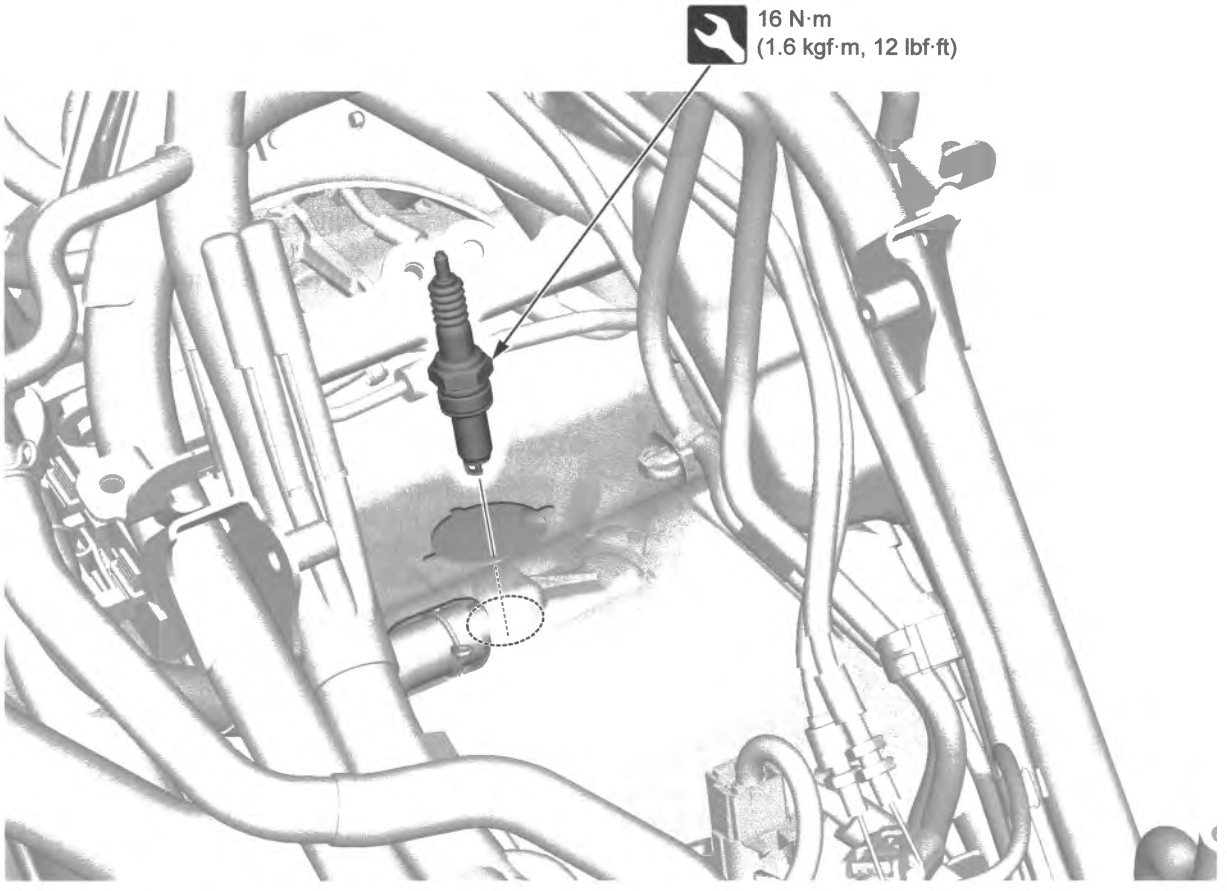
IGNITION SYSTEM LOCATION



IGNITION SYSTEM DIAGRAM



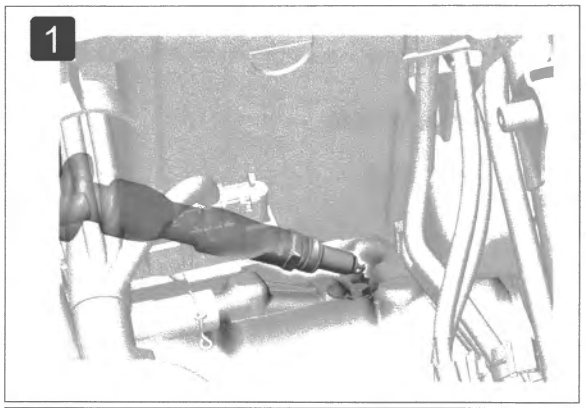
SPARK PLUG REPLACEMENT



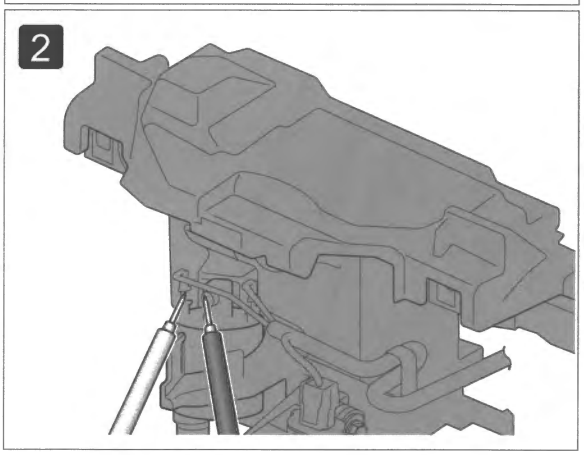
- Battery box ➔4-56
- Spark plug inspection

INSPECTION

IGNITION COIL PRIMARY PEAK VOLTAGE



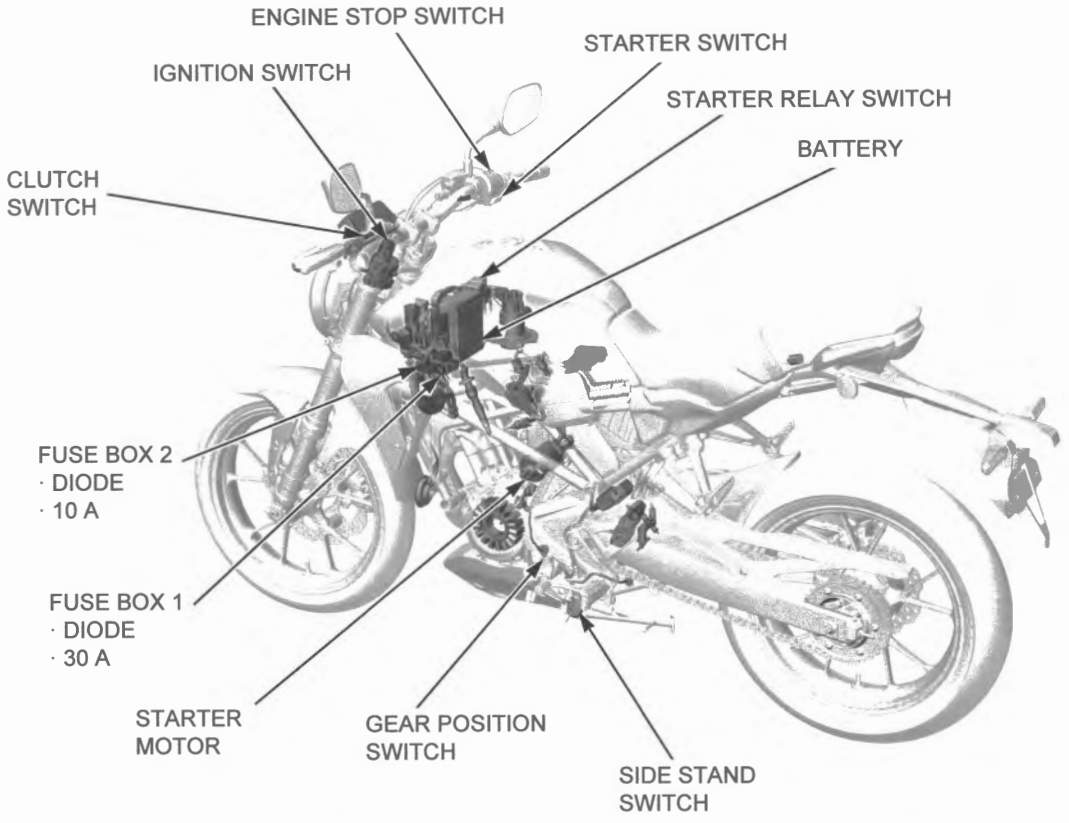
- Refer to the "Basic Shop Manual" for the detailed information of the ignition coil primary peak voltage inspection.
- Battery box ➔4-56
- Temporarily install the wire harness by connecting the battery and each connector.
- 1 Connect a known-good spark plug to the spark plug cap and ground it to the cylinder head bolt as done in a spark test.
- 2 With the primary ignition coil wires connected, connect the peak voltage adaptor probes to the primary ignition coil terminal and ground.
  CONNECTION: P/Bu (+) – Ground (–)



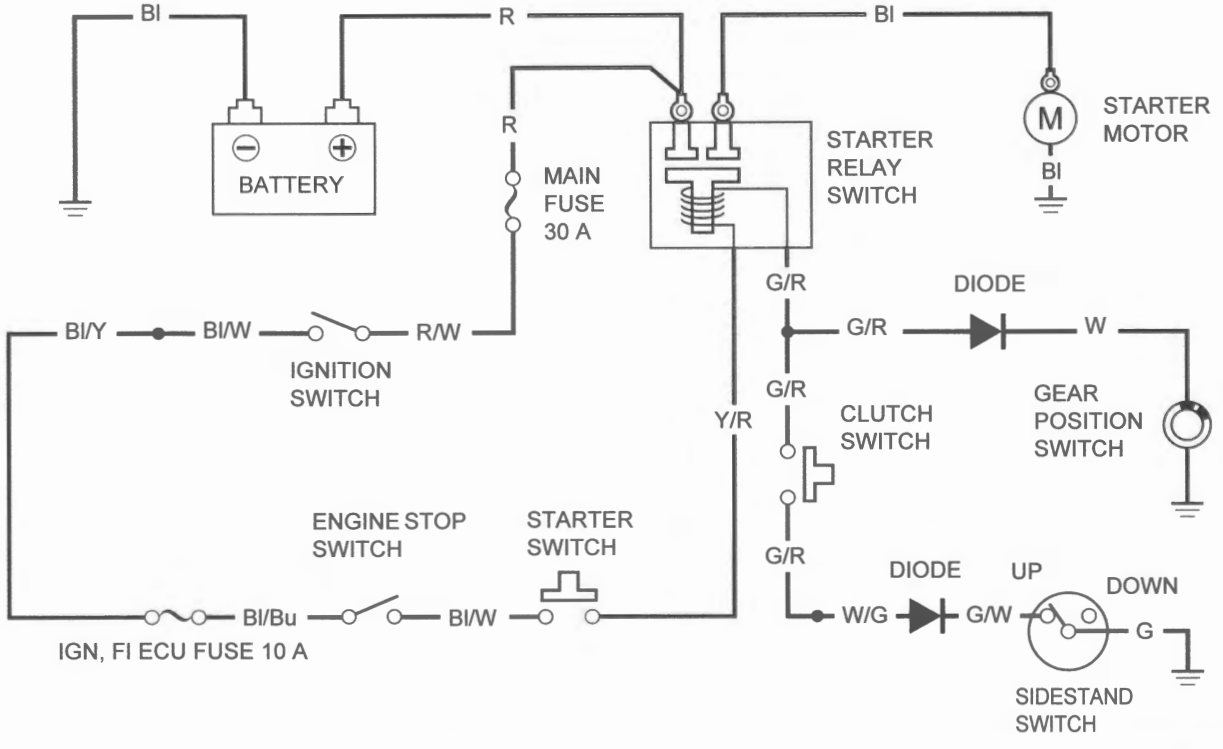
- Check the initial voltage at this time.
  STANDARD VOLTAGE: Battery voltage
- Shift the transmission into neutral.
- Crank the engine with the starter and measure the primary ignition coil peak voltage.
  PEAK VOLTAGE: 100 V minimum

ELECTRICAL STARTER

ELECTRICAL STARTER SYSTEM LOCATION



ELECTRICAL STARTER SYSTEM DIAGRAM



ELECTRICAL STARTER TROUBLESHOOTING

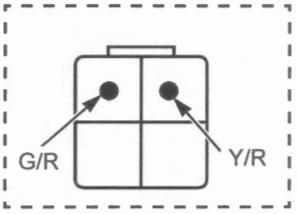
STARTER MOTOR DOES NOT TURN

- Fuel tank lifting ➔4-55

- Loose or poor contacts of related terminal/connector
- Battery condition
- Burned fuse

Connector Diagram

(1) Starter relay switch 4P (Red) connector



1. Starter Relay Switch Coil Input Circuit Inspection

- Connection: Y/R (+) – Ground (–)
- Push and hold the starter switch.
- Is there battery voltage?

No ►

- Inspect the following.
  – Ignition switch
  – Starter switch
  – Engine stop switch
  – Starter relay switch coil input circuit related circuit

Yes ▼

2. Starter Relay Switch Coil Ground Circuit Inspection

- Connection: G/R – Ground
- Squeeze the clutch lever and retract the sidestand or shift the transmission to the neutral position.
- Is there continuity?

No ►

- Inspect the following.
  – Diode
  – Clutch switch
  – Gear position switch
  – Sidestand switch
  – Starter relay coil ground circuit related circuit

Yes ▼

3. Starter Relay Switch Inspection

- Replace the starter relay switch with a new one, and recheck.
- Does the starter motor turn?

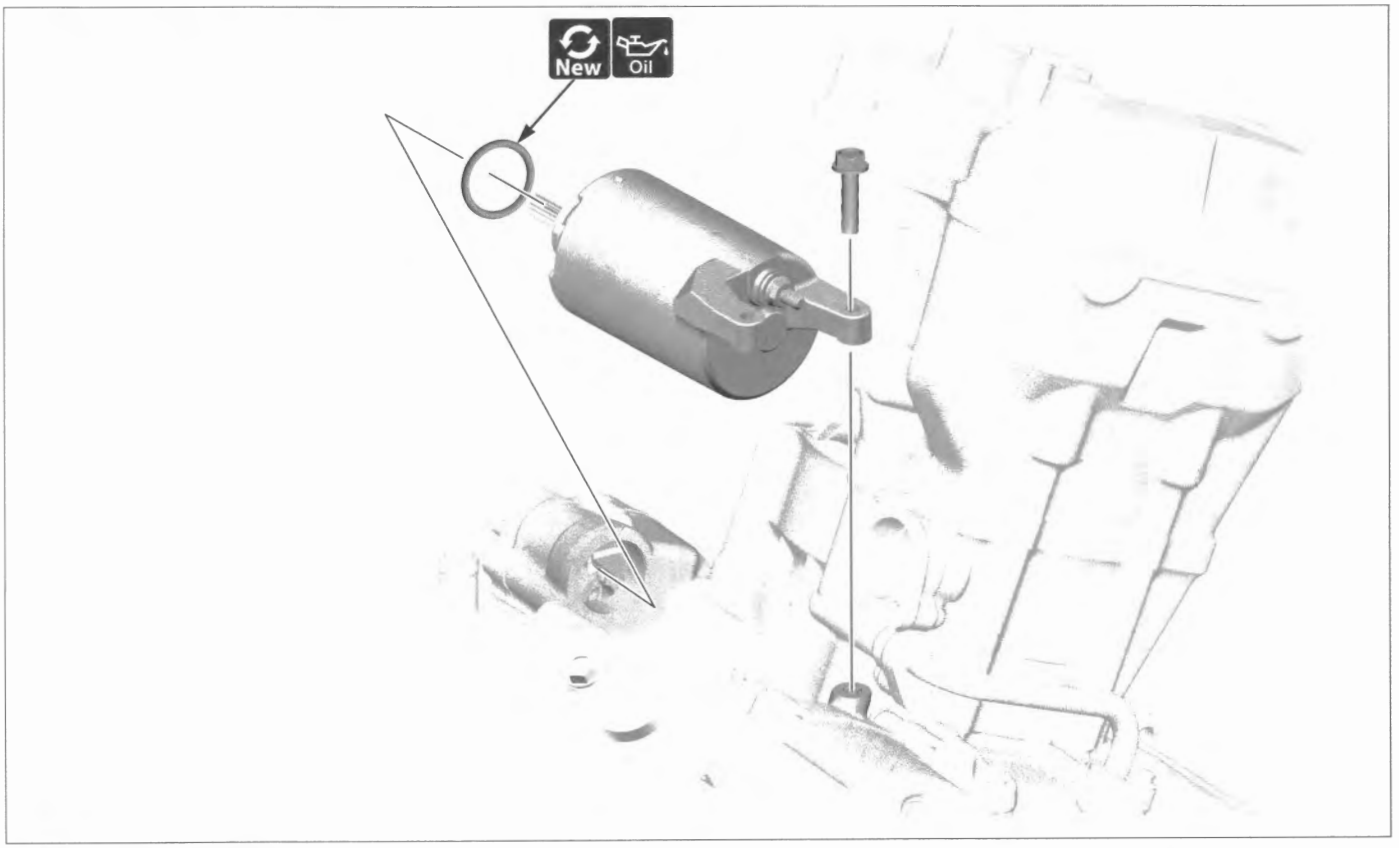
Yes ►

- Faulty original starter relay switch

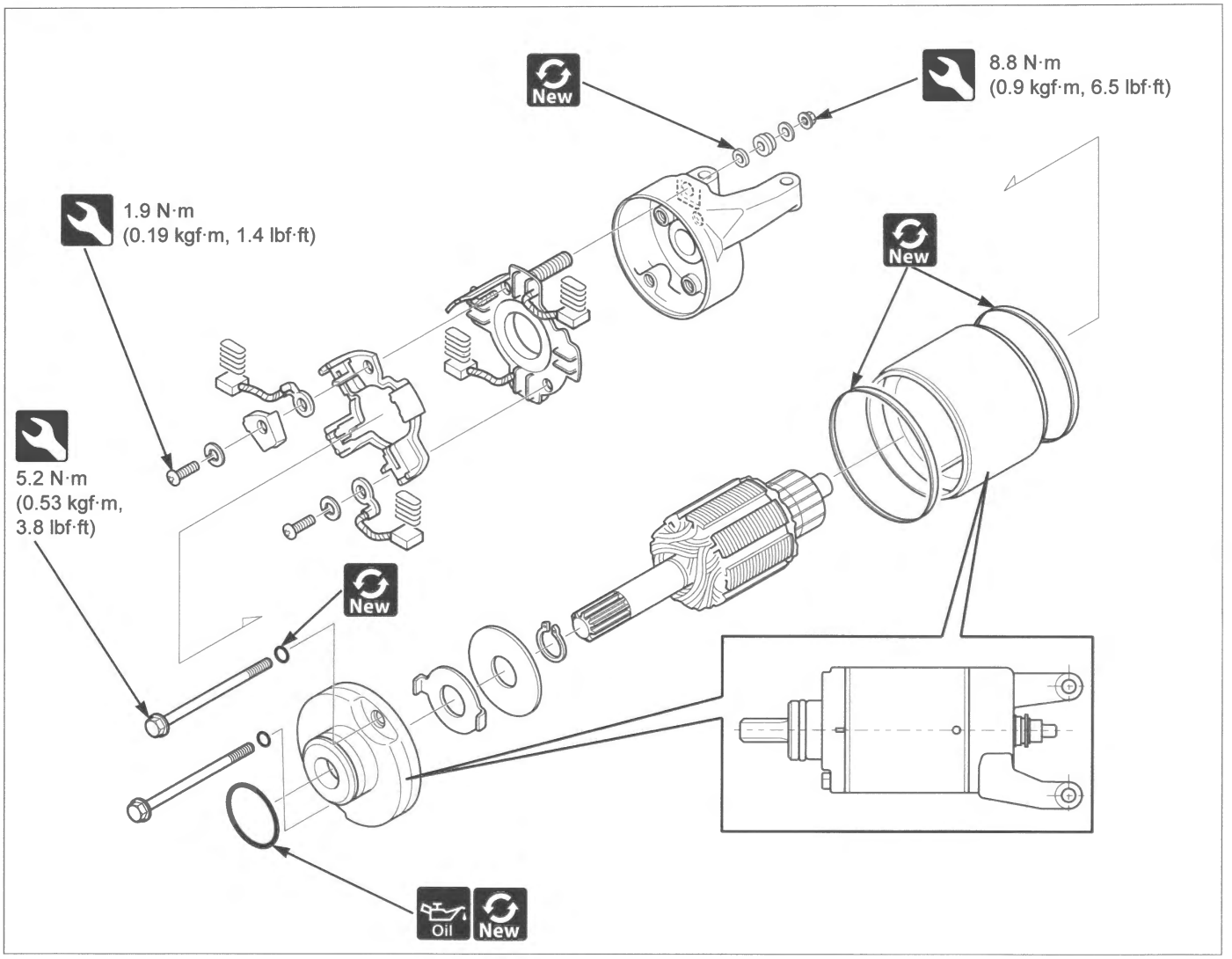
No ▼

- Check for a short or open circuit in the starter motor cable.
- If there is no faulty circuit, replace the starter motor with a new one, and recheck.

STARTER MOTOR



- Engine ➔2-41
- Cam chain tensioner ➔2-28


New
8.8 N·m
(0.9 kgf·m, 6.5 lbf·ft)
1.9 N·m
(0.19 kgf·m, 1.4 lbf·ft)
New
5.2 N·m
(0.53 kgf·m,
3.8 lbf·ft)
New
Oil
New

GEAR POSITION SWITCH

- Engine oil ➔2-15
- Drive sprocket cover ➔3-10

ABS

- Refer to the "Basic Shop manual" for the following information.
  - ABS technical feature and each function.
  - Troubleshooting for the ABS.
  - MCS (Motorcycle Communication System) information.

DTC INDEX

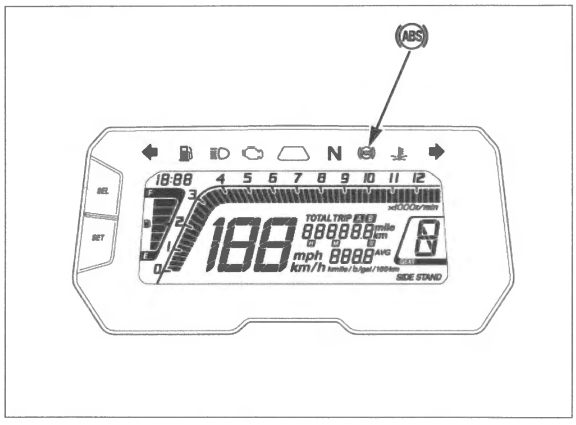
DTC	Function Failure	Detection		Symptom/Fail-safe function	Page
		*A	*B		
–	ABS indicator malfunction • ABS modulator voltage input line • Indicator related wires • Combination meter • ABS modulator • ABS ECU fuse (7.5 A)			• ABS indicator never come ON at all	→4-40
				• ABS indicator stays ON	→4-40
1-1	Front wheel speed sensor circuit inspection • Wheel speed sensor or related wires	○	○	• Stops ABS operation	→4-42
1-2	Front wheel speed sensor malfunction • Wheel speed sensor, pulser ring or related wires • Electromagnetic interference		○	• Stops ABS operation	→4-42
1-3	Rear wheel speed sensor circuit malfunction • Wheel speed sensor or related wires	○	○	• Stops ABS operation	→4-43
1-4	Rear wheel speed sensor malfunction • Wheel speed sensor, pulser ring or related wires • Electromagnetic interference		○	• Stops ABS operation	→4-43
2-1	Front pulser ring • Pulser ring or related wires		○	• Stops ABS operation	→4-42
2-3	Rear pulser ring • Pulser ring or related wires		○	• Stops ABS operation	→4-43
3-1 3-2 3-3 3-4	Solenoid valve malfunction (ABS modulator)	○	○	• Stops ABS operation	→4-44
4-1	Front wheel lock • Riding condition		○	• Stops ABS operation	→4-42
4-2	Front wheel lock (Wheelie) • Riding condition		○		
4-3	Rear wheel lock • Riding condition		○	• Stops ABS operation	→4-43
5-1	Pump motor lock • Pump motor (ABS modulator) or related wires • ABS MOTOR fuse (30 A)	○	○	• Stops ABS operation	→4-45
5-2	Pump motor stuck off • Pump motor (ABS modulator) or related wires • ABS MOTOR fuse (30 A)	○	○	• Stops ABS operation	→4-45
5-3	Pump motor stuck on • Pump motor (ABS modulator) or related wires • ABS MOTOR fuse (30 A)	○	○	• Stops ABS operation	→4-45
5-4	Power supply relay malfunction • Power supply relay (ABS modulator) or related wires • ABS SOL fuse (20 A)	○	○	• Stops ABS operation	→4-46

DTC	Function Failure	Detection		Symptom/Fail-safe function	Page
		*A	*B		
6-1	Power circuit under voltage • Input footage (too low) • ABS ECU fuse (7.5 A)	O	O	• Stops ABS operation	➔4-47
6-2	Power circuit over voltage • Input voltage (too high)	O	O	• Stops ABS operation	➔4-47
7-1	Tire malfunction • Tire size • Incorrect sprocket gear ratio (Sprockets not recommended for the vehicle are installed.)		O	• Stops ABS operation	➔4-48
8-1	ABS control unit • ABS control unit malfunction (ABS modulator)	O	O	• Stops ABS operation	➔4-48
8-3	IMU acceleration malfunction • IMU or related wires • ABS ECU fuse (7.5 A)	O	O	• Stops ABS operation	➔4-49
8-5	IMU circuit malfunction • IMU or related wires • ABS ECU fuse (7.5 A)	O	O	• Stops ABS operation	➔4-49

*A: Pre-start self-diagnosis

*B: Ordinary self-diagnosis: diagnoses while the vehicle is running (after pre-start self-diagnosis)

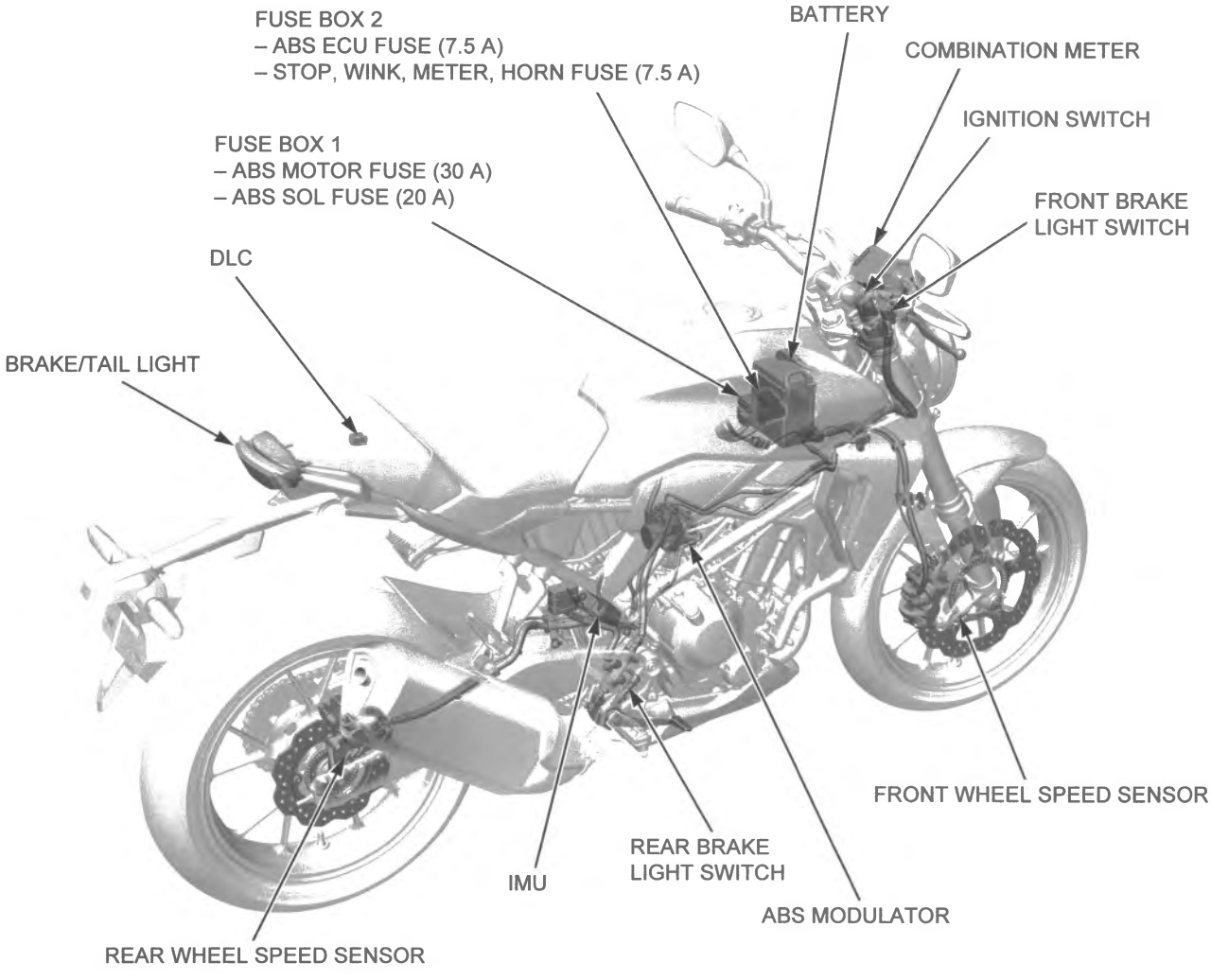
How To Erase the DTC Without MCS



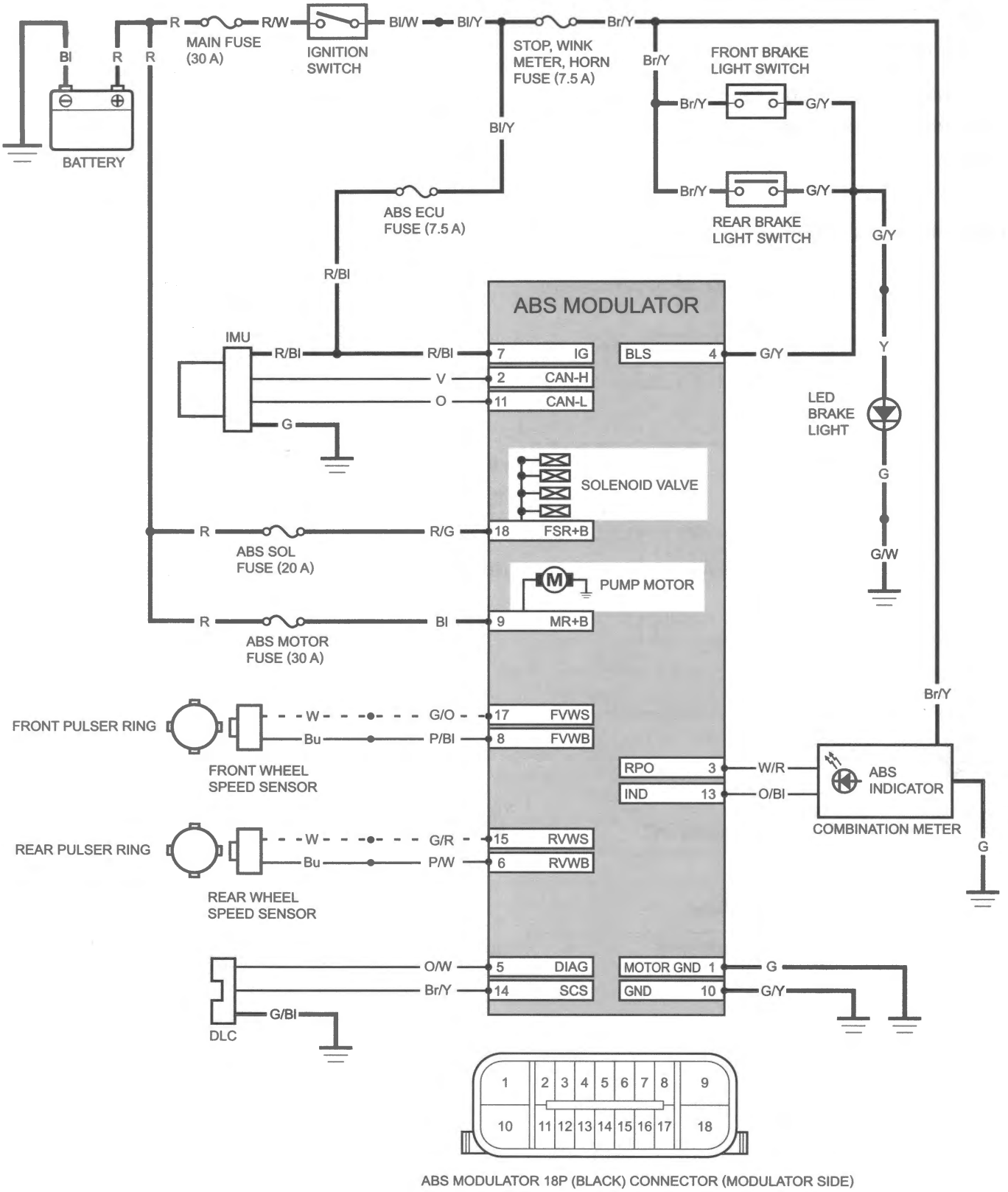
- Connect the DLC.
- Squeeze the brake lever.

- The ABS indicator should come on for 2 seconds and go off.
- After the ABS indicator is off, release the brake lever immediately.
- After the ABS indicator is on, squeeze the brake lever immediately.
- After the ABS indicator is off, release the brake lever immediately.
  - When the code is erased successfully, the ABS indicator blinks 2 times and stay on.
  - If the ABS indicator does not blink, the data has not been erased, so try again.

ABS SYSTEM LOCATION



ABS SYSTEM DIAGRAM



ABS MODULATOR 18P (BLACK) CONNECTOR (MODULATOR SIDE)

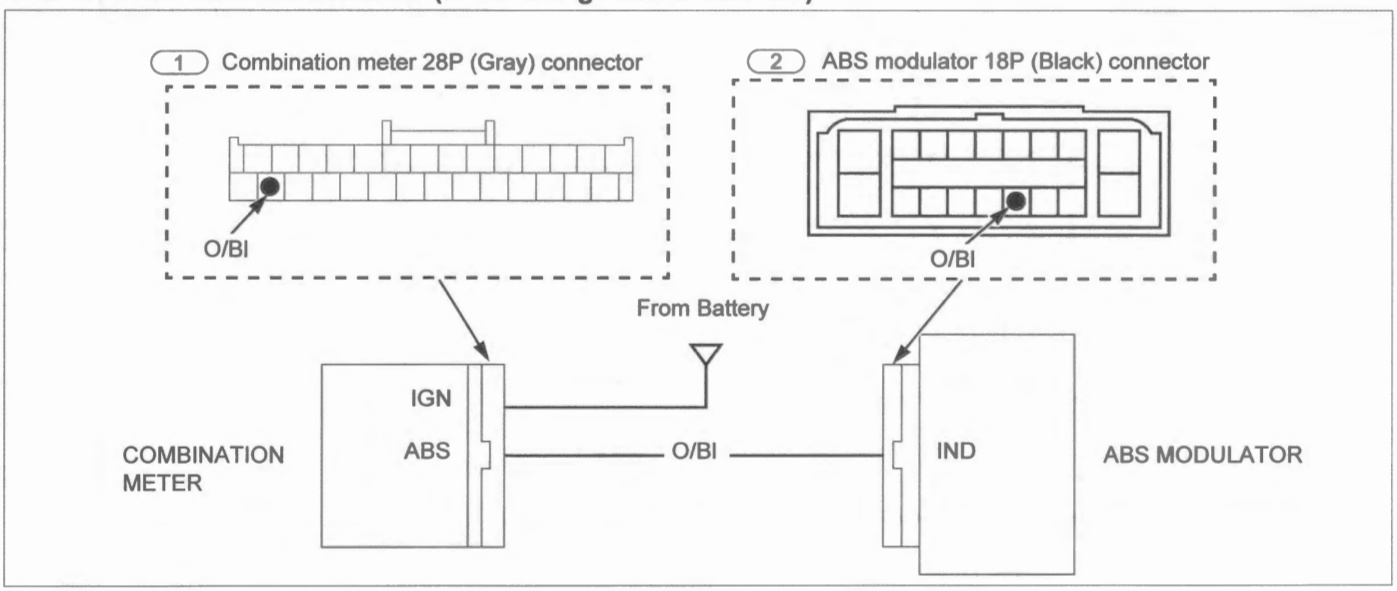
DTC TROUBLESHOOTING

- Before starting this troubleshooting, check for burned fuses and initial function of the meter.
- Use a fully charged battery. Do not diagnose with a charger connected to the battery.
- Perform inspection with the ignition switch OFF, unless otherwise specified.
- All connector diagrams in the troubleshooting are viewed from the terminal side.
- When the ABS modulator assembly is detected to be faulty, recheck the wire harness and connector connections closely before replacing it.
- After diagnostic troubleshooting, erase the DTC and test-ride the vehicle to check that the ABS indicator operates normally during pre-start self-diagnosis.

ABS indicator malfunction

- Meter cover ➔4-57

ABS indicator does not come ON (When the ignition switch ON)



1. ABS Indicator Inspection

2 ⇨

- Check the ABS indicator.
- Does the ABS indicator not come on?

Yes ▶ • Faulty ABS modulator

No ▼

2. ABS indicator Line Inspection

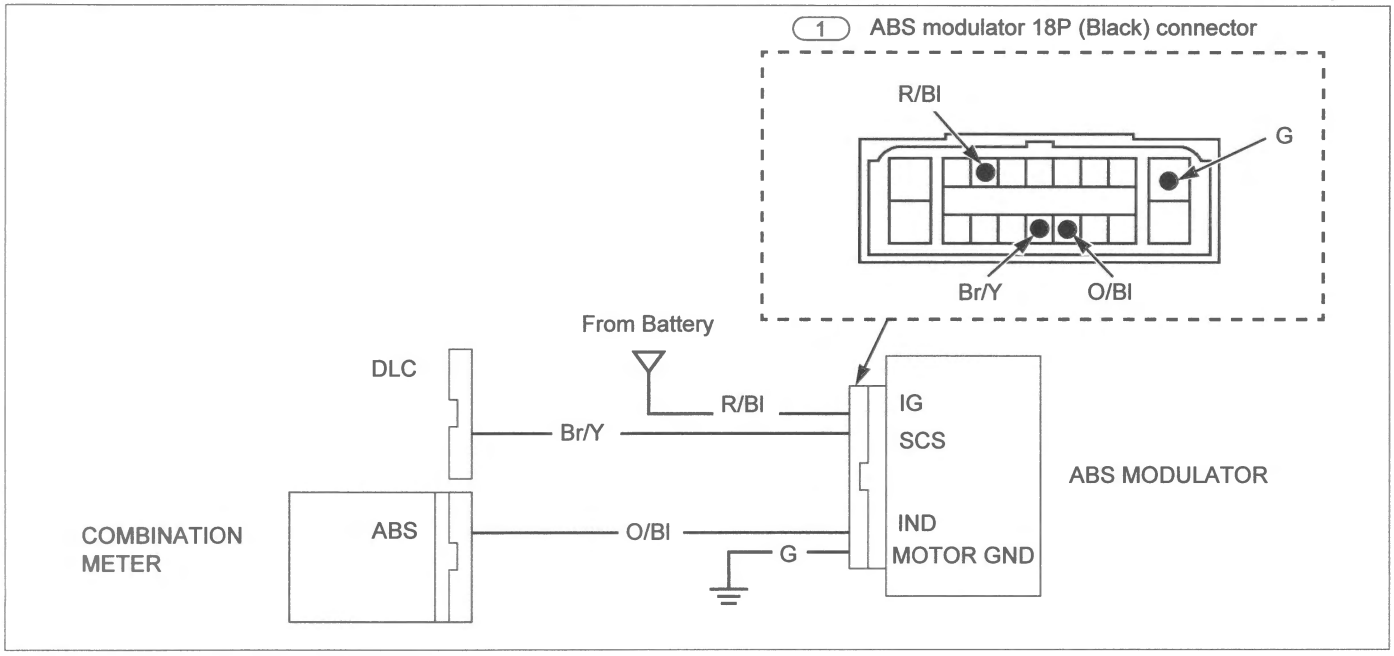
- Check for a short circuit in O/BI wire.
- Is there a short circuit?

No ▶ • Faulty combination meter

Yes ▼

- Faulty O/BI wire

ABS indicator stays ON (Indicator does not go off when the motorcycle is running, but DTC is not stored)



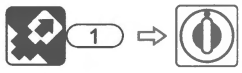
1. Service Check Line Inspection

- Check for a short circuit in Br/Y wire.
- Is there a short circuit?

Yes ▶ • Faulty Br/Y wire

No ▼

2. ABS Indicator Line Inspection



- Install a jumper wire between the terminal and ground.
  Jumper terminal: O/Bl
- Does the ABS indicator go off?

No ▶
- Faulty O/Bl wire
- If the wire is ok, faulty combination meter.

Yes ▼

3. ABS Modulator Ground Line Inspection

- Check for an open circuit the in G wire.
- Is there an open circuit?

Yes ▶ • Faulty G wire

No ▼

4. ABS Modulator Power Line Inspection

- Connection: R/Bl (+) – Ground (–)
- Is there battery voltage?

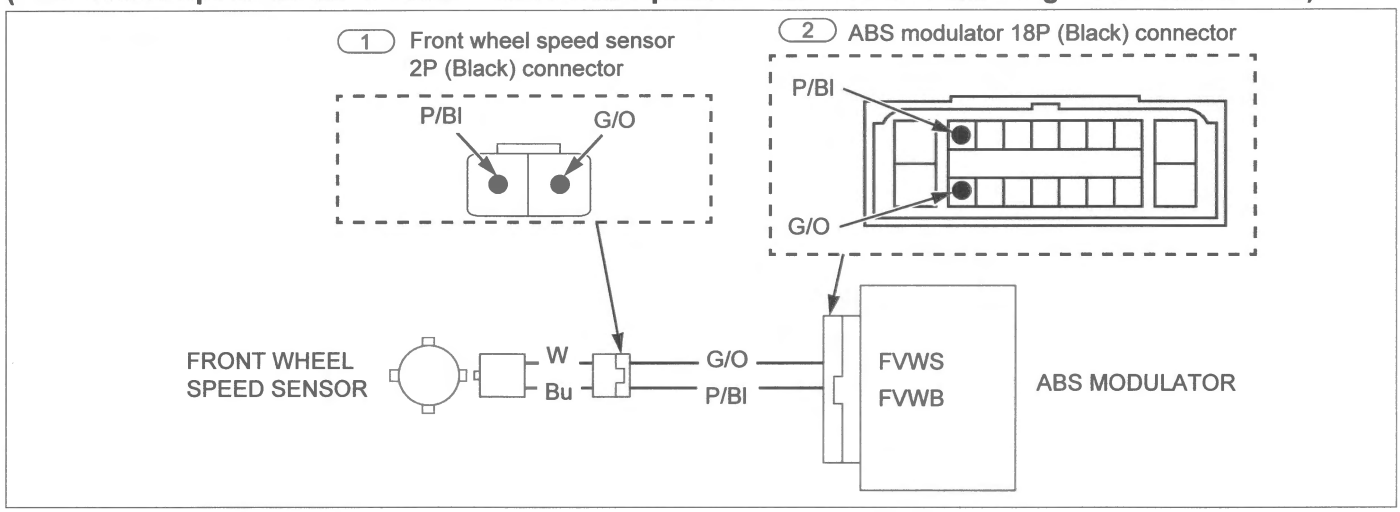
No ▶ • Faulty R/Bl wire

Yes ▼

- Faulty ABS modulator

DTC 1-1, 1-2, 2-1, 4-1, 4-2

(Front Wheel Speed Sensor Circuit / Front Wheel Speed Sensor / Front Pulser Ring / Front Wheel Lock)



1. Air Gap Inspection

• Measure the air gap. • Is the air gap correct?	No ▶	• Check each part for deformation, looseness and correct accordingly. Recheck the air gap.

Yes ▼

2. Speed Sensor and Pulser Ring Inspection

• Check the speed sensor and pulser ring. • Are the sensor and pulser ring in good condition and properly installed?	No ▶	• Remove any deposits. • Install properly or replace faulty part.

Yes ▼

3. Speed Sensor Line Inspection 1

1 2 • Install a jumper wire between the terminals. Jumper terminal: G/O and P/Bl • Check the continuity between the above wires. • Is there continuity?	No ▶	• Faulty G/O or P/Bl wire

Yes ▼

4. Speed Sensor Line Inspection 2

• Check for a short circuit in the Bu, P/Bl, W and G/O wire. • Is there a short circuit?	Yes ▶	• Faulty Bu, P/Bl, W or G/O wire

No ▼

5. Failure Reproduction

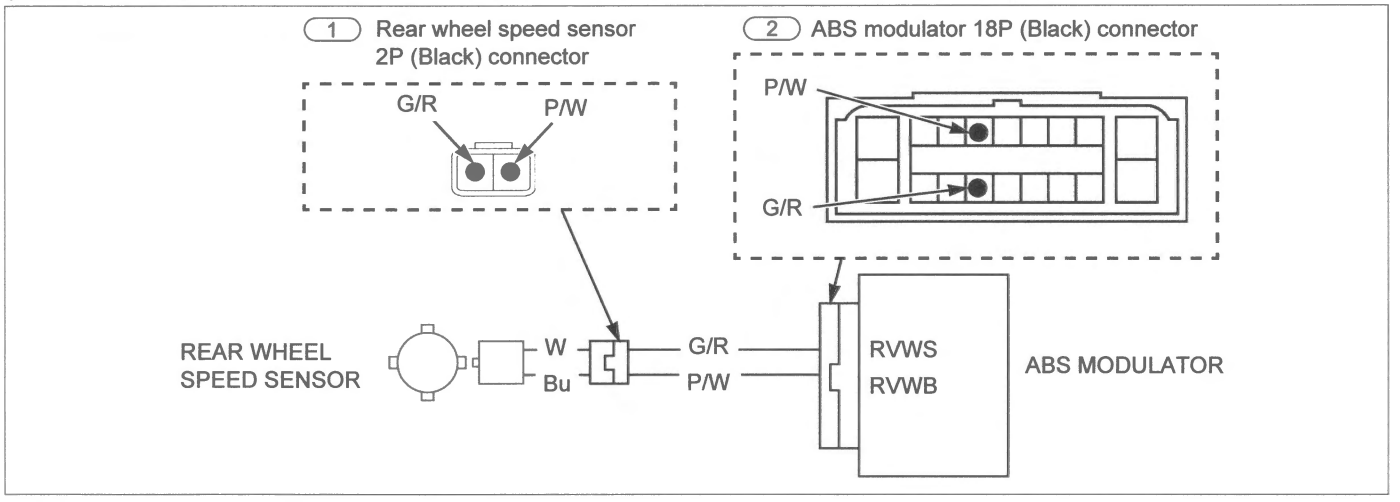
• Replace the speed sensor with a new one. ➔4-51 • Erase the DTC and test-ride the vehicle above 30 km/h, then recheck the DTC. • Is DTC 1-1, 1-2, 2-1, 4-1, 4-2 indicated?	No ▶	• Faulty original speed sensor

Yes ▼

• Faulty ABS modulator

DTC 1-3, 1-4, 2-3, 4-3

(Rear wheel Speed Sensor Circuit / Rear Wheel Speed Sensor / Rear Pulser Ring/ Rear Wheel Lock)



1. Air Gap Inspection

- Measure the air gap.
- Is the air gap correct?

No ▶
- Check each part for deformation, looseness and correct accordingly. Recheck the air gap.

Yes ▼

2. Speed Sensor and Pulser Ring Inspection

- Check the speed sensor and pulser ring.
- Are the sensor and pulser ring in good condition and properly installed?

No ▶
- Remove any deposits.
- Install properly or replace faulty part.

Yes ▼

3. Speed Sensor Line Inspection 1

1 2

- Install a jumper wire between the terminals. Jumper terminal: G/R and P/W
- Check the continuity between the above wires.
- Is there continuity?

No ▶
- Faulty G/R or P/W wire

Yes ▼

4. Speed Sensor Line Inspection 2

- Check for a short circuit in Bu, P/W, W and G/R wire.
- Is there short circuit?

Yes ▶
- Faulty Bu, P/W, W or G/R wire

No ▼

5. Failure Reproduction

- Replace the speed sensor with a new one. ➔4-51
- Erase the DTC and test-ride the vehicle above 30 km/h, then recheck the DTC.
- Is DTC 1-3, 1-4, 2-3, 4-3 indicated?

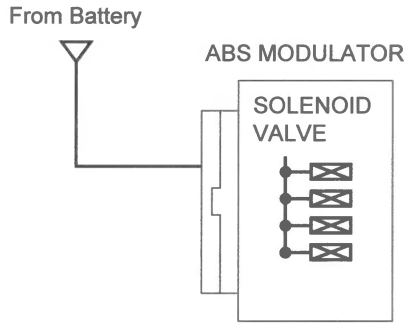
No ▶
- Faulty original speed sensor

Yes ▼

- Faulty ABS modulator

DTC 3-1, 3-2, 3-3, 3-4

(Solenoid Valve Malfunction)



1. Failure Reproduction

- Erase DTC and test-ride the vehicle above 30 km/h, then recheck the DTC.
- Is DTC 3-1, 3-2, 3-3, 3-4 indicated?

No ▶

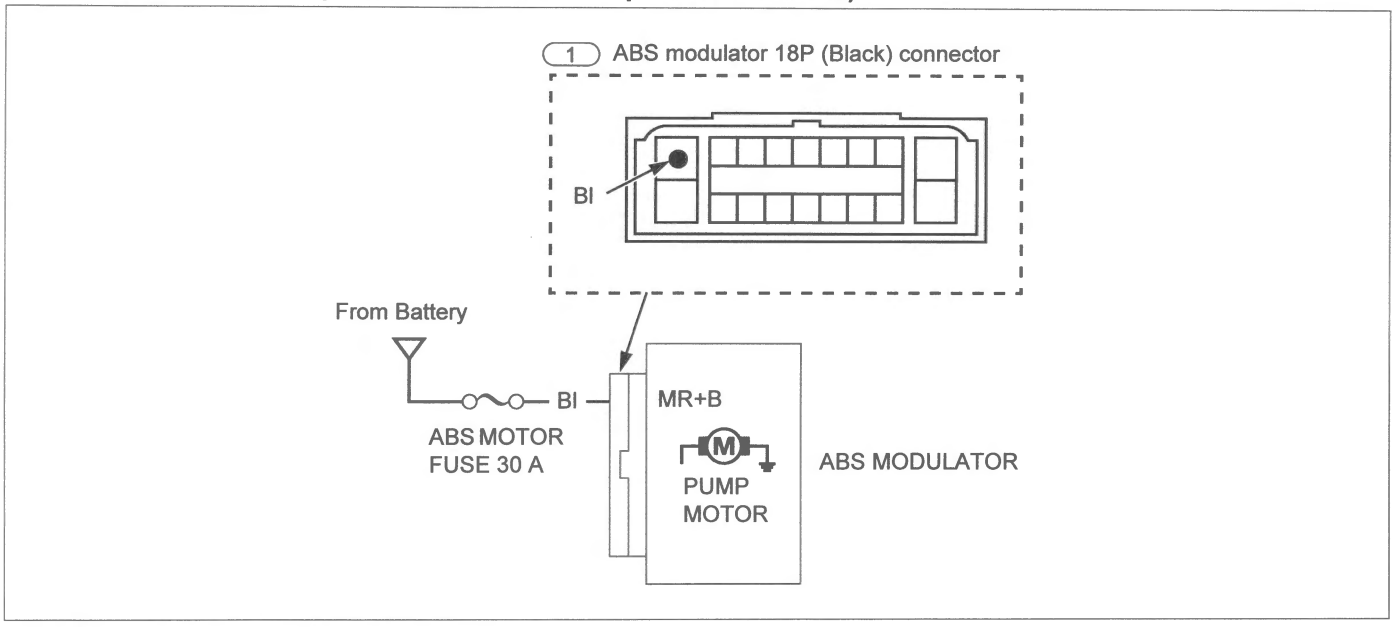
- Intermittent failure

Yes ▼

- Faulty ABS modulator

DTC 5-1, 5-2, 5-3

(Pump Motor Lock / Pump Motor Stuck Off / Pump Motor Stuck On)



1. ABS Modulator Power Line Inspection 1

- Connection: BI (+) – Ground
- Is there battery voltage?

No ▶
- Faulty BI wire

Yes ▼

2. ABS Modulator Power Line Inspection 2

- Check for a short circuit in BI wire.
- Is there a short circuit?

Yes ▶
- Faulty BI wire

No ▼

3. Failure Reproduction

- Erase the DTC and test-ride the vehicle above 30 km/h, then recheck the DTC.
- Is DTC 5-1, 5-2, 5-3 indicated?

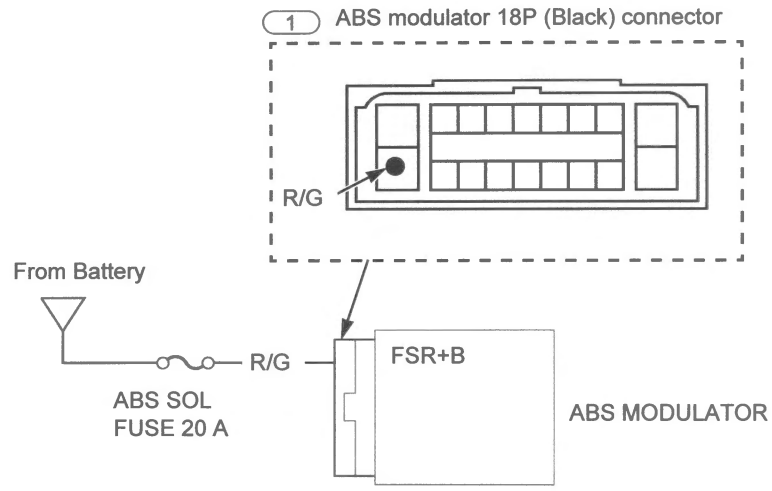
No ▶
- Intermittent failure

Yes ▼

- Faulty ABS modulator

DTC 5-4

(Power Supply Relay Malfunction)



1. ABS Modulator Power Line Inspection 1

- Connection: R/G (+) – Ground
- Is there battery voltage?

No ▶
- Faulty R/G wire

Yes ▼

2. ABS Modulator Power Line Inspection 2

- Check for a short circuit in R/G wire.
- Is there a short circuit?

Yes ▶
- Faulty R/G wire

No ▼

3. Failure Reproduction

- Erase the DTC and test-ride the vehicle above 30 km/h, then recheck the DTC.
- Is DTC 5-4 indicated?

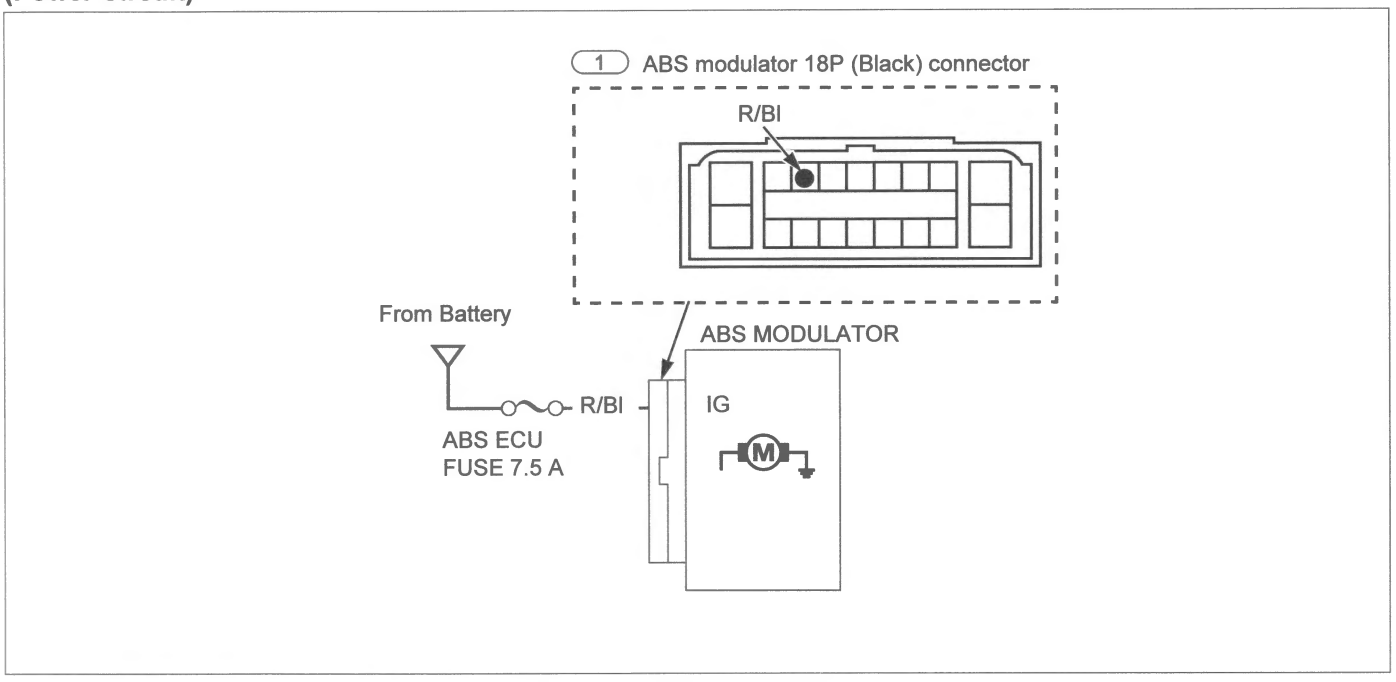
No ▶
- Intermittent failure

Yes ▼

- Faulty ABS modulator

DTC 6-1, 6-2

(Power Circuit)



1. ABS Modulator Power Line Inspection 1

- Connection: R/Bl (+) – Ground
- Is there battery voltage?

No ▶

- Faulty R/Bl wire

Yes ▼

2. ABS Modulator Power Line Inspection 2

- Check for a short circuit in R/Bl wire.
- Is there a short circuit?

Yes ▶

- Faulty R/Bl wire

No ▼

3. Failure Reproduction

- Erase the DTC and test-ride the vehicle above 30 km/h, then recheck the DTC.
- Is DTC 6-1, 6-2 indicated?

No ▶

- Intermittent failure

Yes ▼

- Faulty ABS modulator

DTC 7-1

(Tire Size)

- Check the following and correct the faulty part.
- Incorrect tire pressure
- Tires not recommended for the vehicle were installed (incorrect tire size).
- Sprockets not recommended for the vehicle were installed (incorrect sprocket gear ratio).
- Deformation of the wheel or tire.

1. Failure Reproduction

- Erase the DTC and test-ride the vehicle above 30 km/h, then recheck the DTC.
- Is DTC 7-1 indicated?

No ▶

- Intermittent failure

Yes ▼

- Faulty ABS modulator

DTC 8-1

(ABS Control Unit)

1. Failure Reproduction

- Erase the DTC and test-ride the vehicle above 30 km/h, then recheck the DTC.
- Is DTC 8-1 indicated?

No ▶

- Intermittent failure

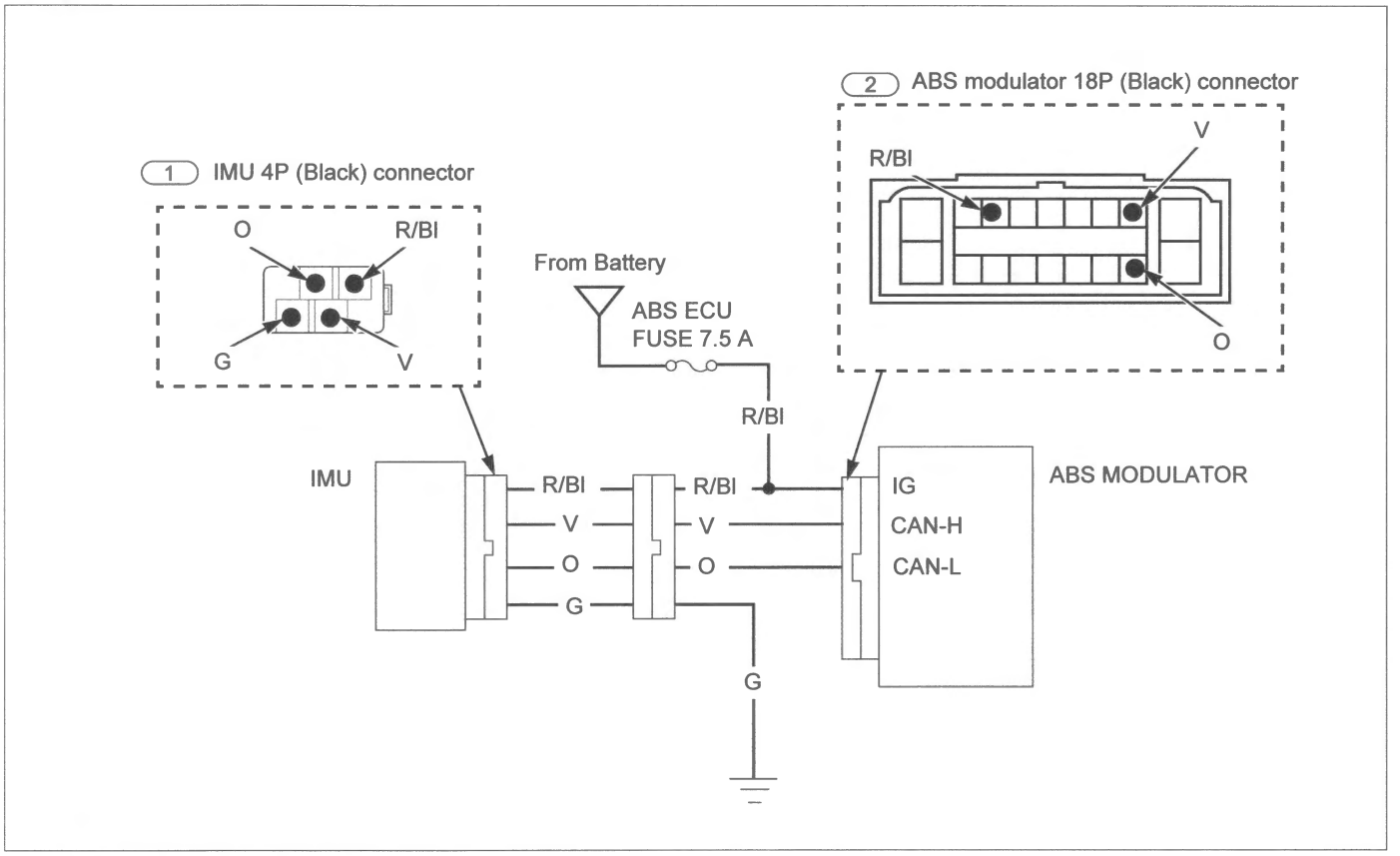
Yes ▼

- Faulty ABS modulator

DTC 8-3, 8-5

- Drive chain case ➔3-12

(IMU)



1. IMU Installation Condition Inspection

- Check the IMU stay, mounting rubber and fasteners.
- Is the installation condition normal?

No ▶
- Install properly or replace faulty part.

Yes ▼

2. IMU Line Inspection 1

1 2

- Check for a short circuit in R/Bl wire.
- Is there a short circuit?

Yes ▶
- Faulty R/Bl wire

No ▼

3. IMU Line Inspection 2

⇨ V 1

- Connection: R/Bl (+) – G (–)
- Is there battery voltage?

No ▶
- Faulty R/Bl wire
- Faulty G wire

Yes ▼

4. IMU Line Inspection 3

- Install a jumper wire between the terminals.
  Jumper terminal: V and O
- Check the continuity between the above wires.
- Is there continuity?

No ▶

- Faulty V or O wire

Yes ▼

5. IMU Line Inspection 4

- Check for a short circuit in V and O wire.
- Is there a short circuit?

Yes ▶

- Faulty V or O wire

No ▼

6. Failure Reproduction

- Replace the IMU with a new one. ➔4-52
- Erase the DTC and test-ride the vehicle above 30 km/h, then recheck the DTC.
- Is DTC 8-3, 8-5 indicated?

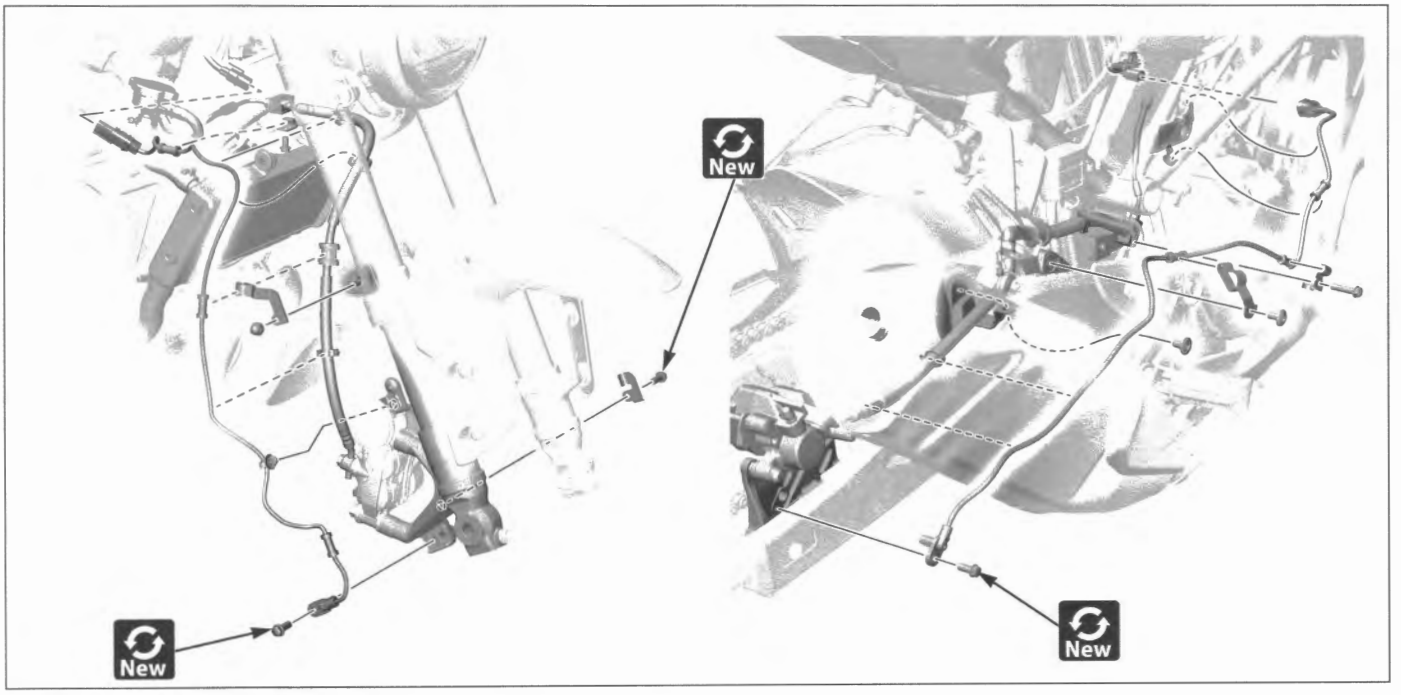
No ▶

- Faulty original IMU

Yes ▼

- Faulty ABS modulator

WHEEL SPEED SENSOR



- Front wheel ➔3-17
- Remove the radiator mounting bolt, move the radiator forward. ➔2-12
- Rear wheel ➔3-26

Basic

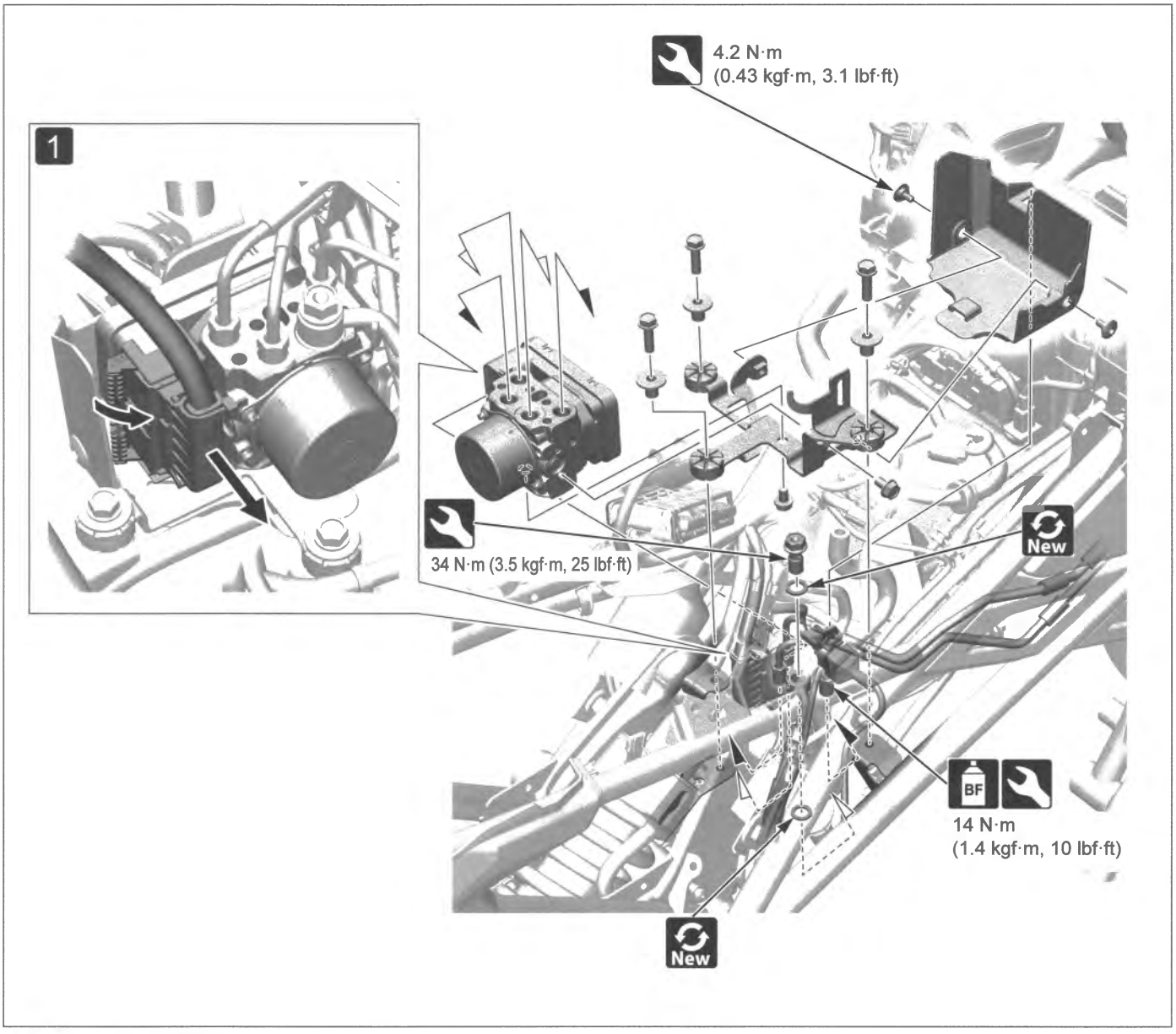
- Wheel speed sensor inspection

IMU

- Drive chain case ➔3-12

- Do not drop the IMU.
- Never use the dropped IMU.
- Do not use an impact wrench while removing or installing the IMU.
- Do not apply any impact on the IMU while removing or installing it.

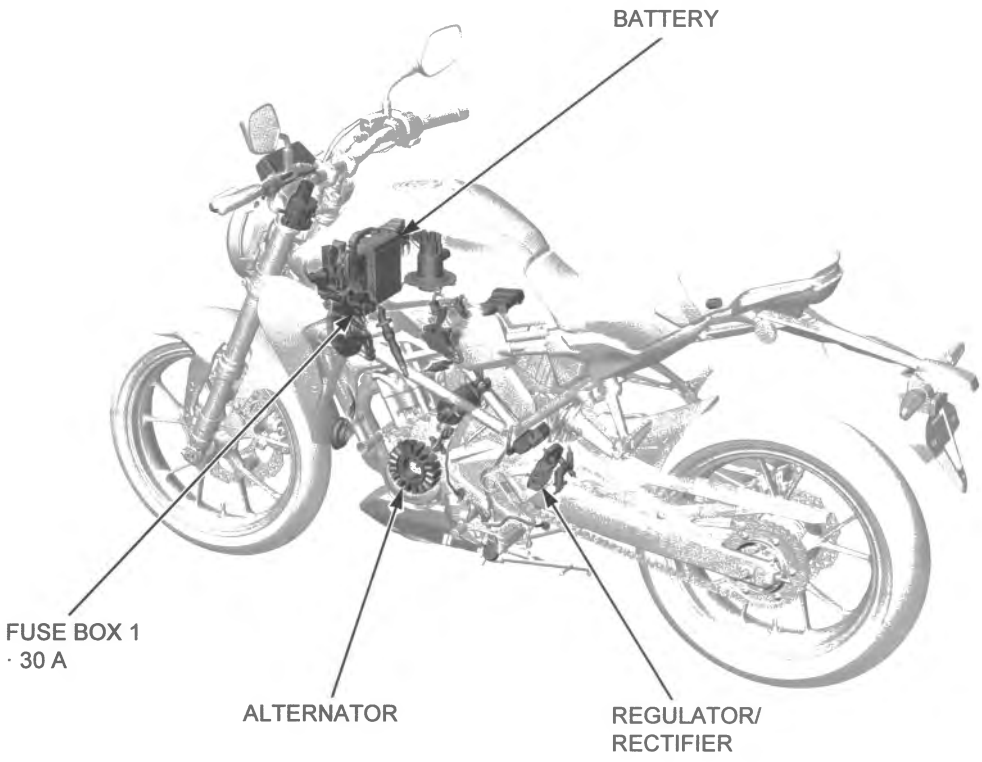
ABS MODULATOR



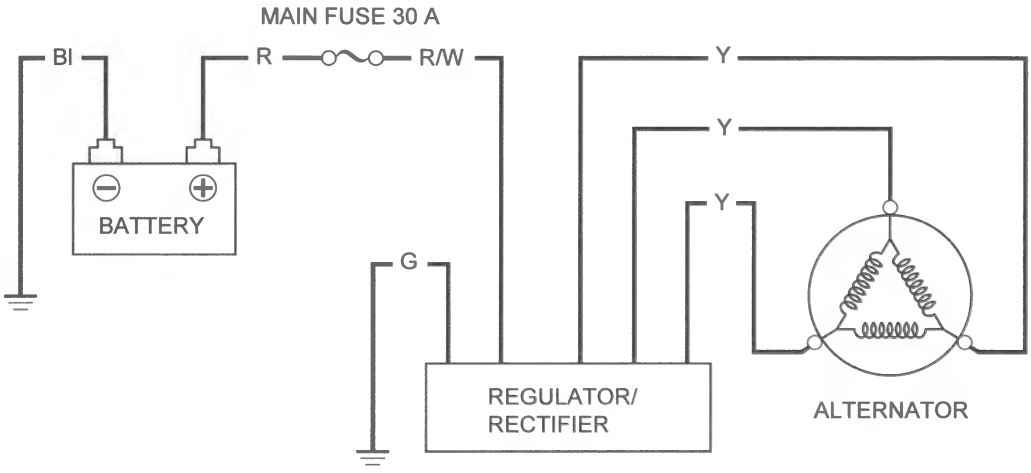
- Engine ➔2-41
- 1 Pull up the lock lever and disconnect the ABS modulator 18P (Black) connector.

BATTERY/CHARGING SYSTEM

BATTERY/CHARGING SYSTEM LOCATION



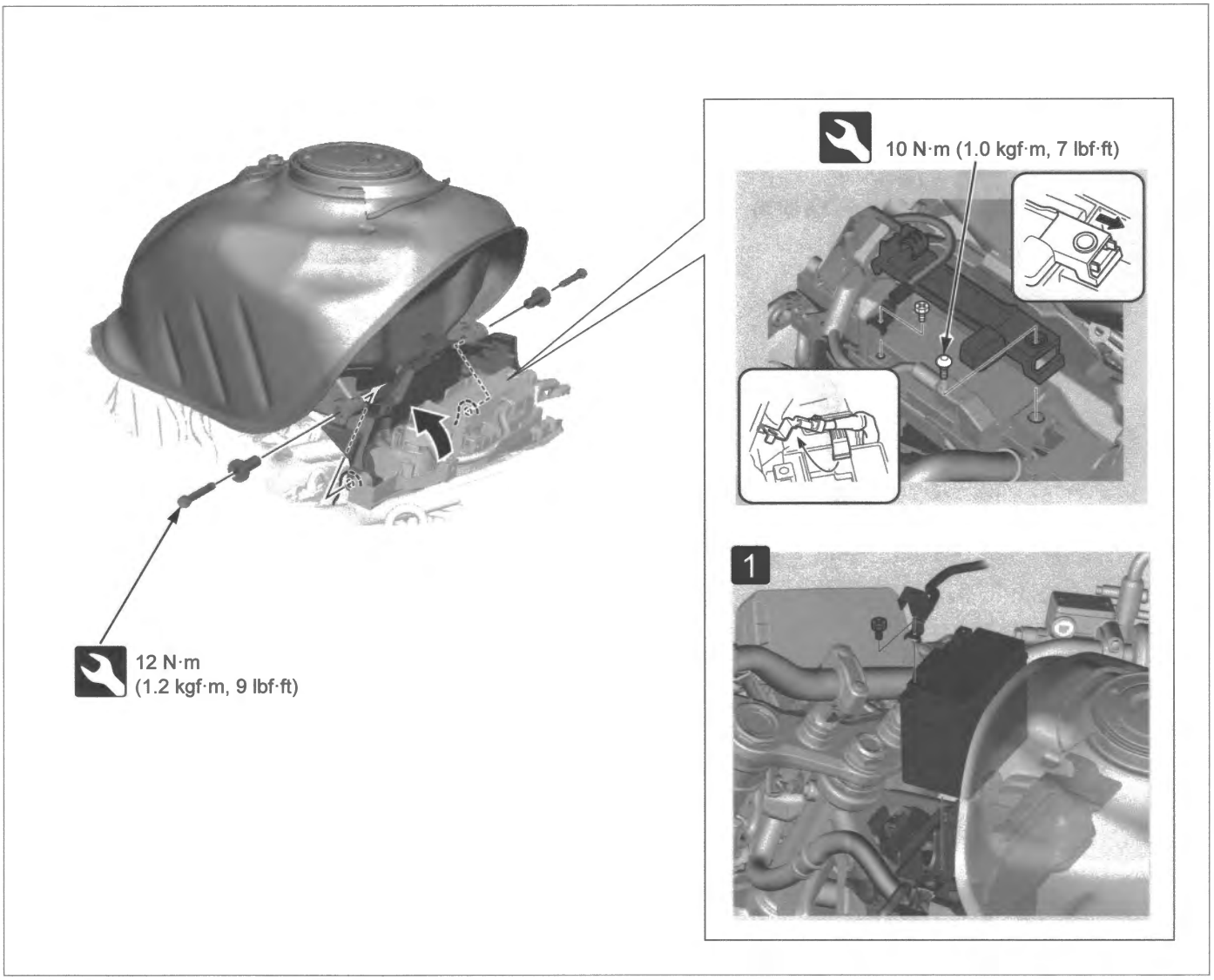
BATTERY/CHARGING SYSTEM DIAGRAM



Basic

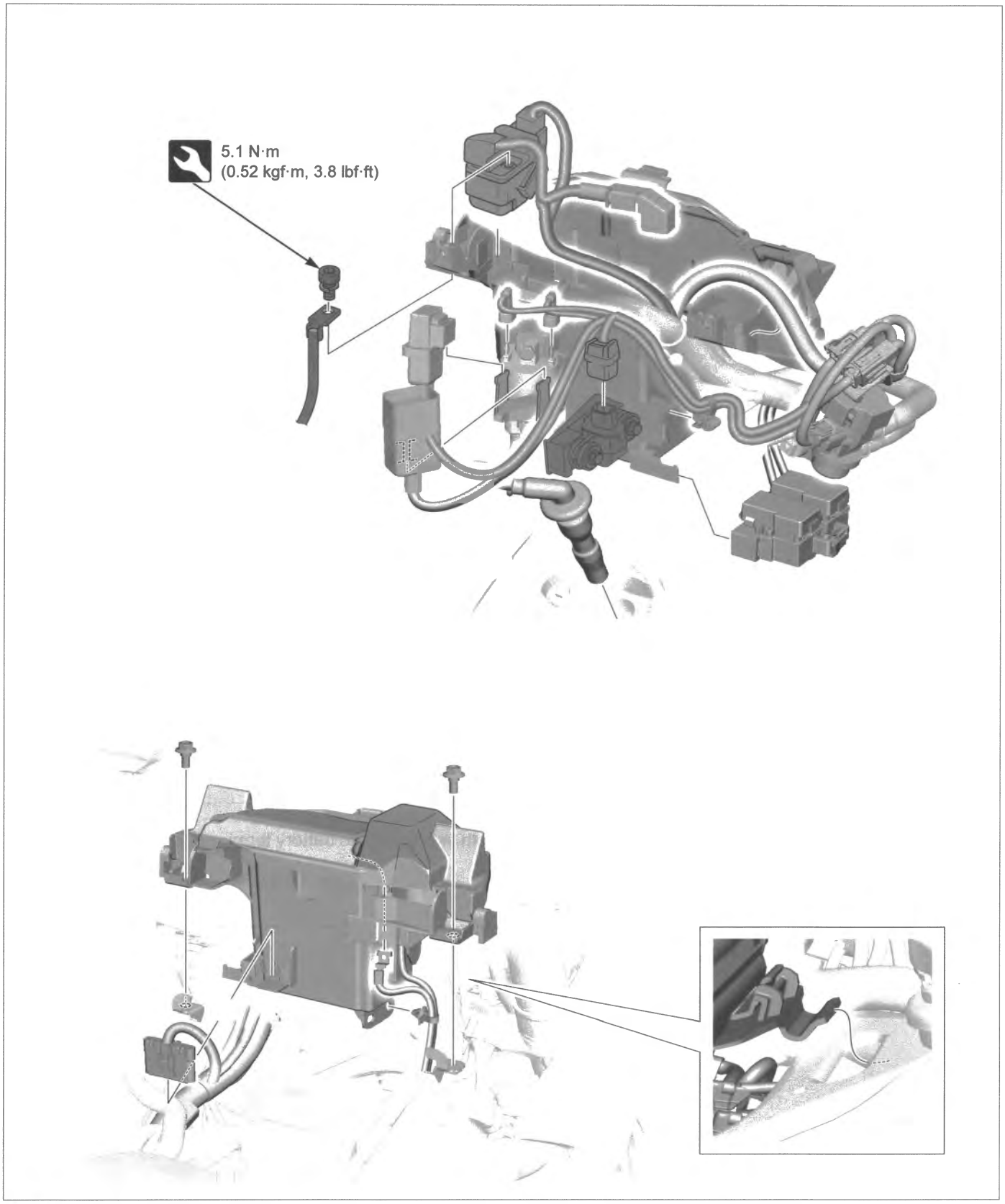
- Battery/charging system information, troubleshooting and inspection

BATTERY



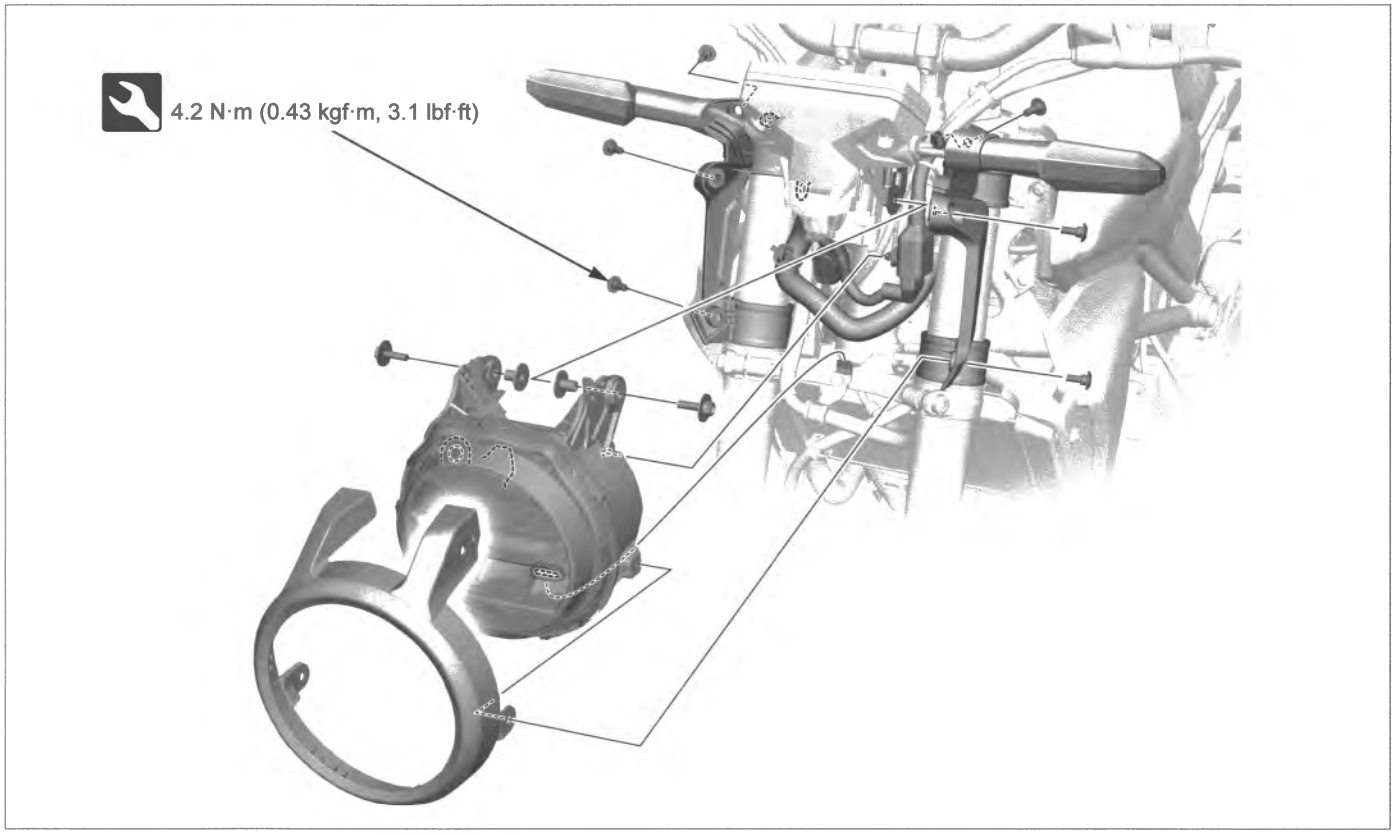
- Fuel tank cover ➔3-9
- 1 Cover the handlebar holders with a protective cloth to prevent the battery terminals from scratching them.

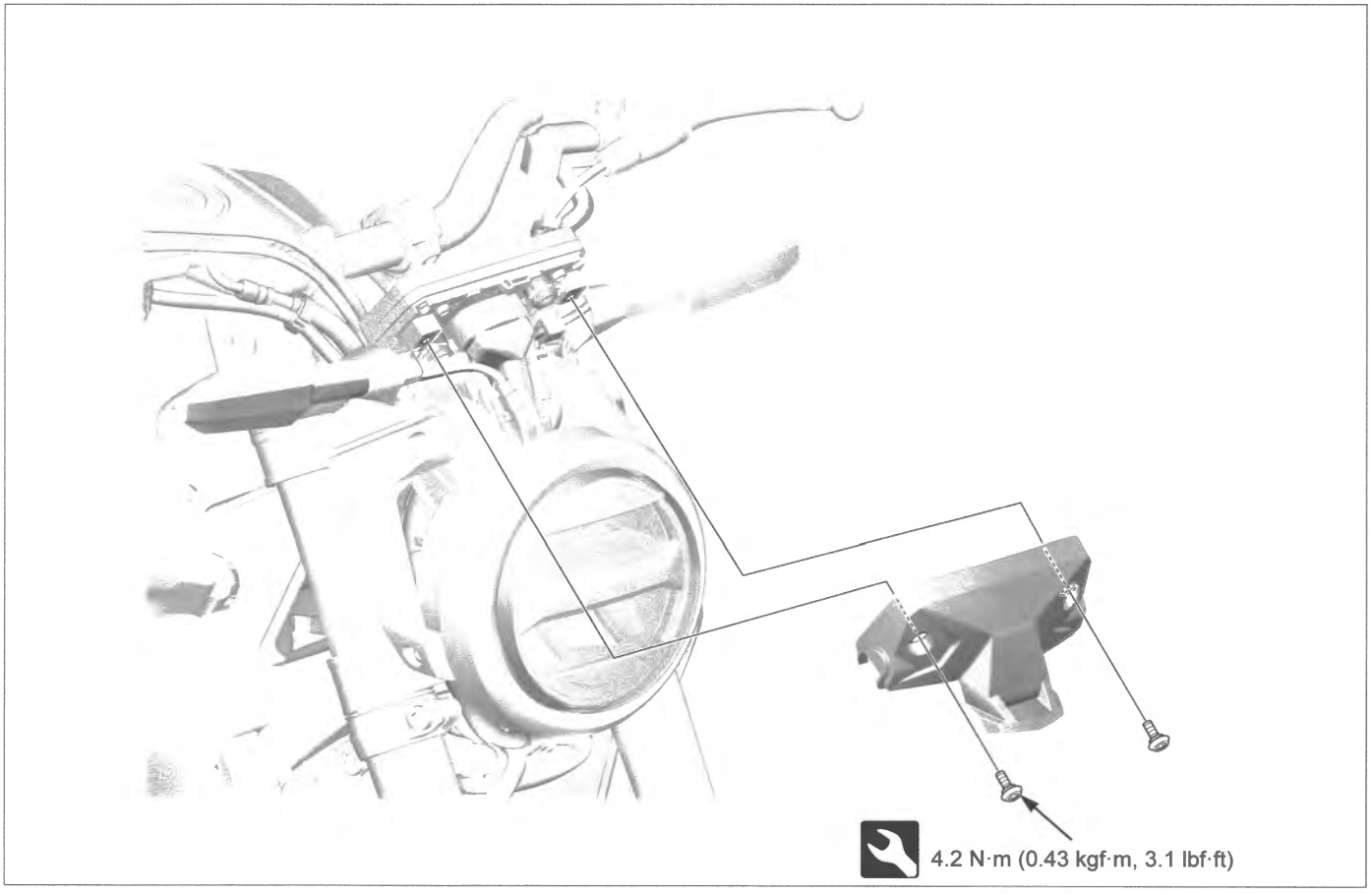
BATTERY BOX

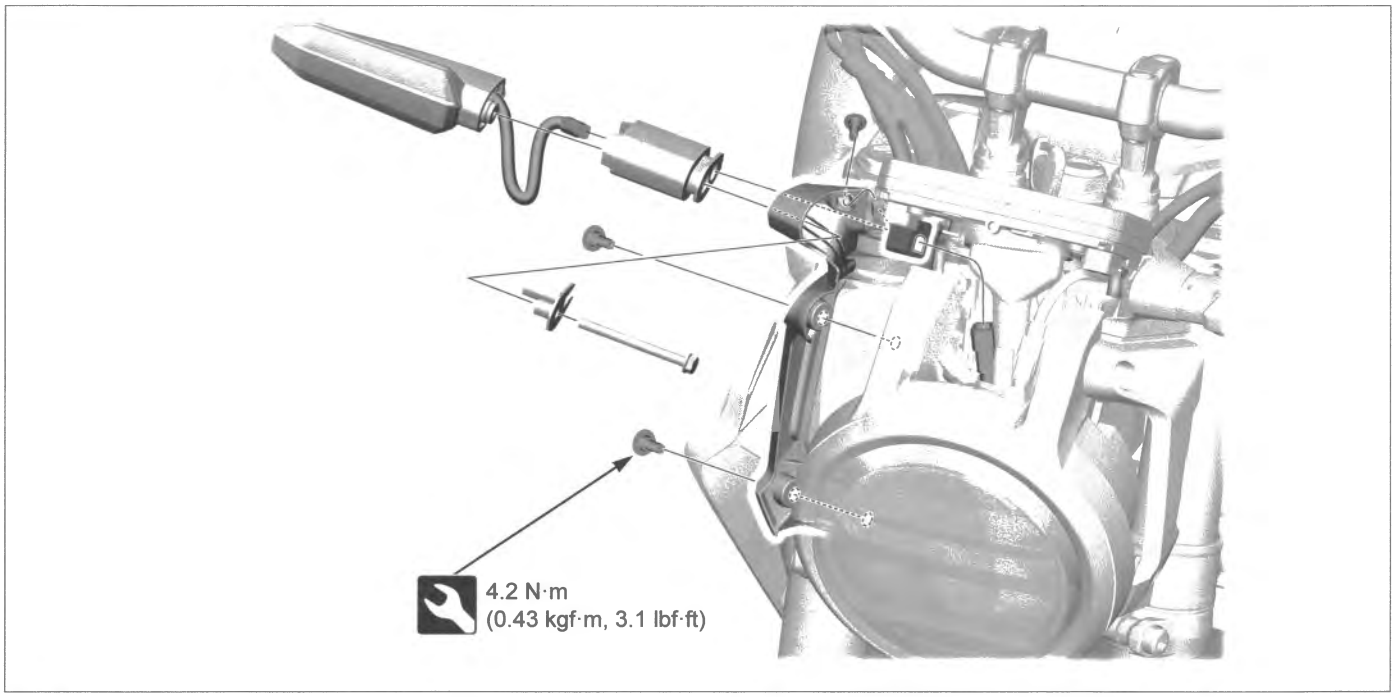


- Battery ➔4-55
- Fuel tank ➔2-6
- Left radiator cover ➔3-8

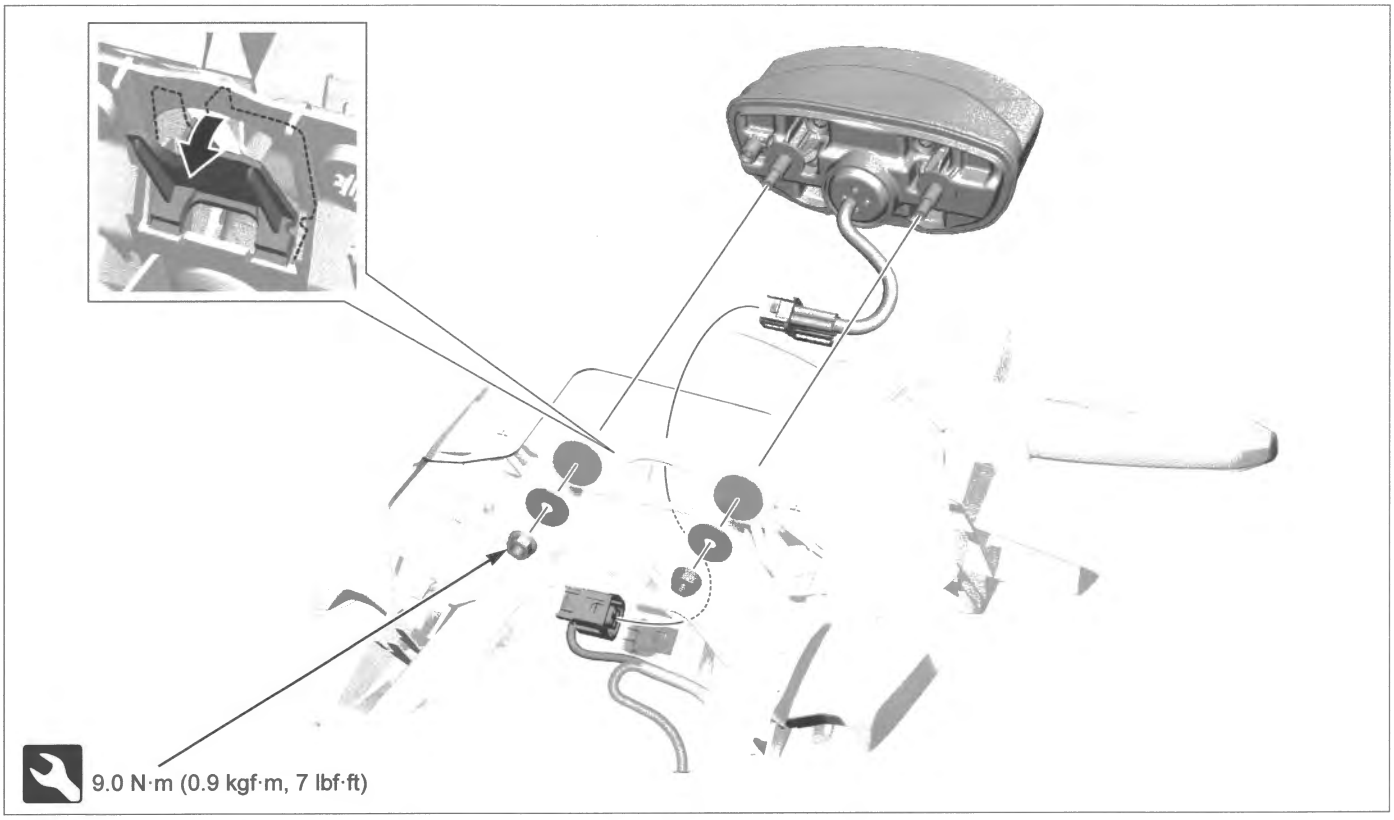
LIGHTING SYSTEM





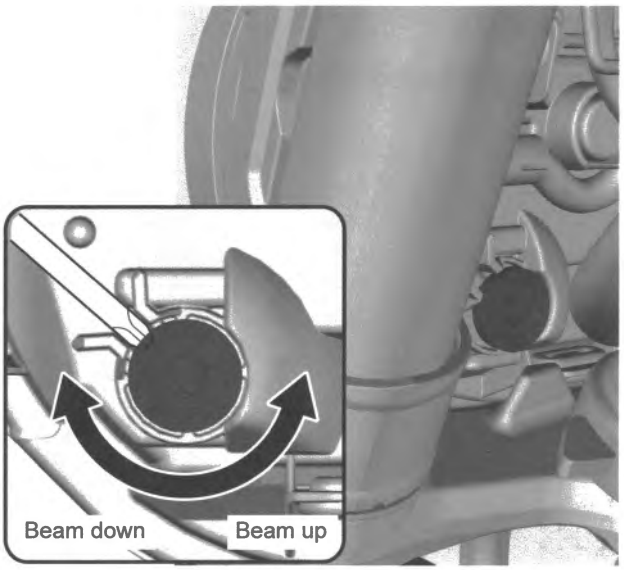


- Meter cover ➔4-57



- Passenger seat ➔3-4

HEADLIGHT AIM



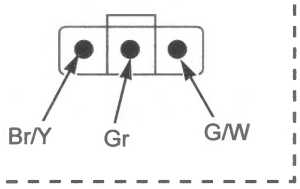
TURN SIGNAL LIGHT TROUBLESHOOTING

- When all turn signal lights blink faster than usual, replace the turn signal light relay with a known good one, and recheck.

ALL TURN SIGNAL LIGHTS DO NOT LIGHT

- Loose or poor contacts of related terminal/connector
- Battery condition
- Burned fuse

(1) Turn signal light relay 3P (Black) connector



1. Turn Signal Light Relay Input Voltage Inspection

- Connection: Br/Y (+) – G/W (–)
- Is there battery voltage?

No ▶

- Faulty Br/Y or G/W wire

Yes ▼

2. Turn Signal Light Relay Inspection

- Connection: Gr (+) – G/W (–)
  (Connector connected)
  Peak voltage adapter: 07HGJ-0020100
- Battery voltage – Measured voltage = 1.5 V max.?

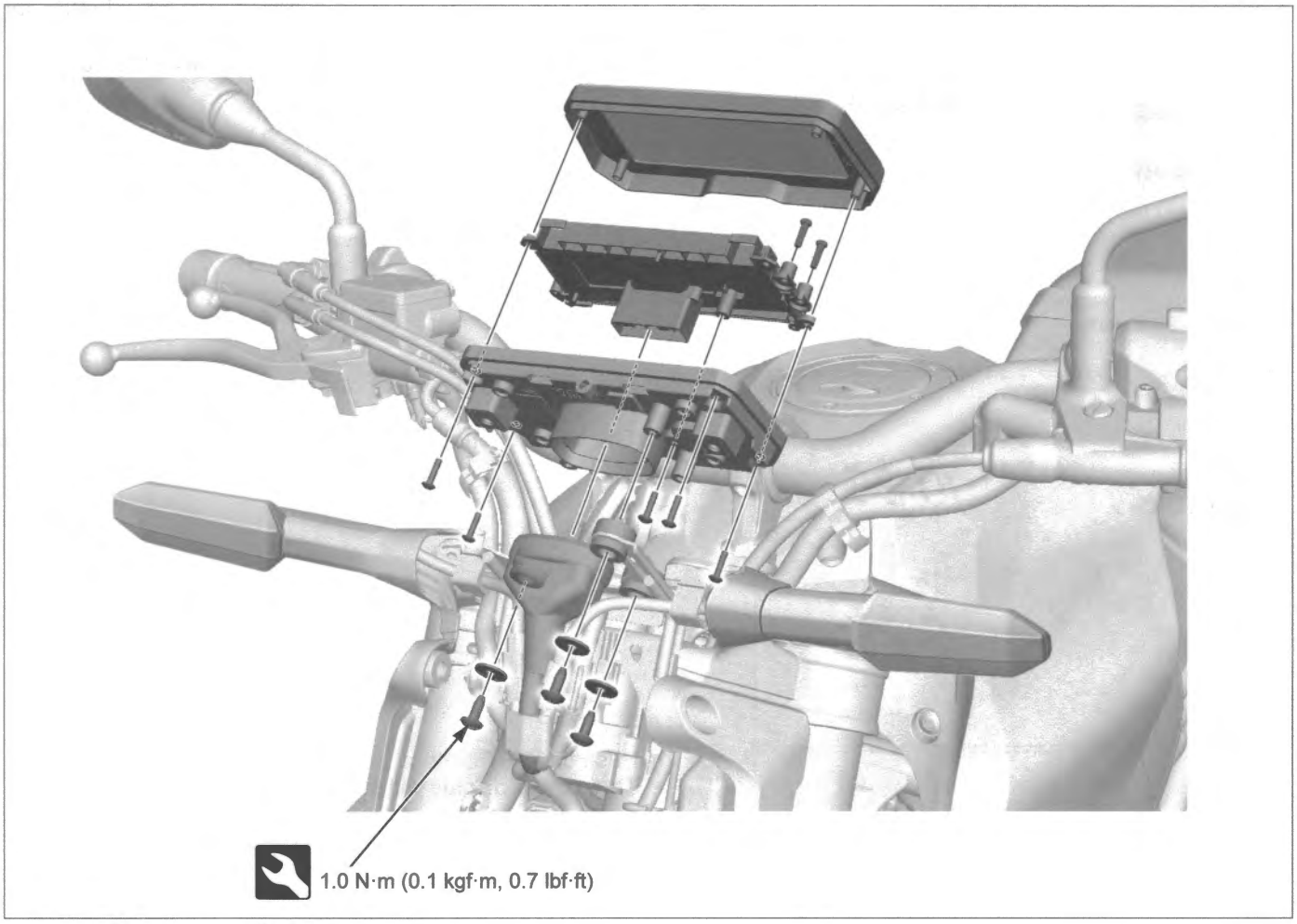
No ▶

- Replace the turn signal light relay with a new one, and recheck.

Yes ▼

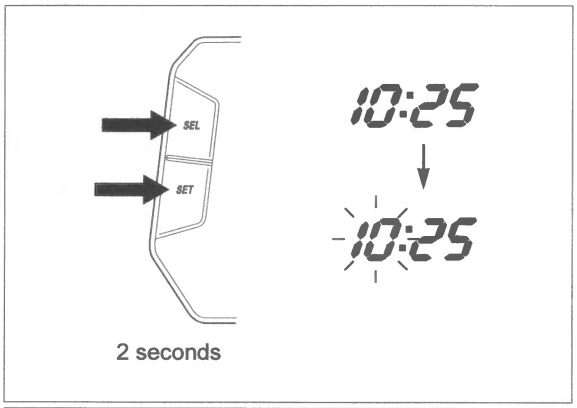
- Check for an open or short circuit in Br/Y or G/W wire.
- If there is no faulty circuit, replace the left handlebar switch with a new one ➔3-22, and recheck.

COMBINATION METER

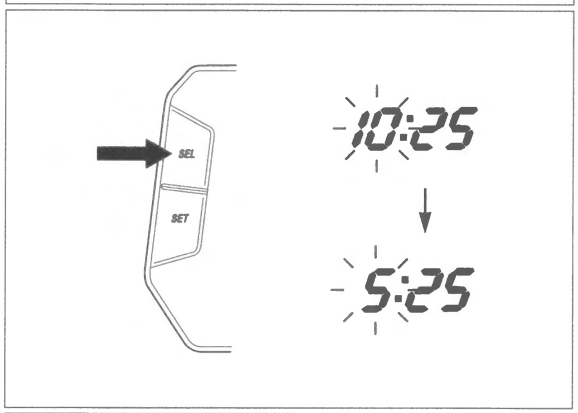


- Meter cover ➔4-57
- Headlight ➔4-57

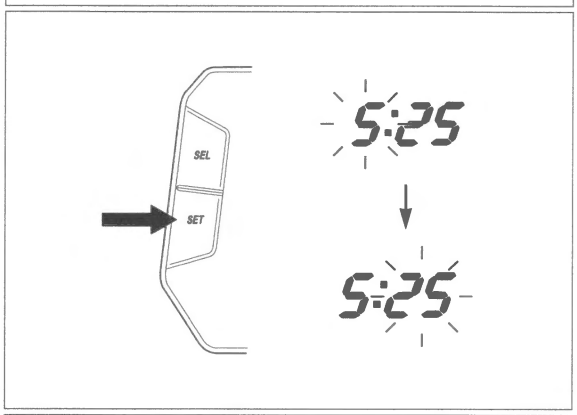
CLOCK ADJUST



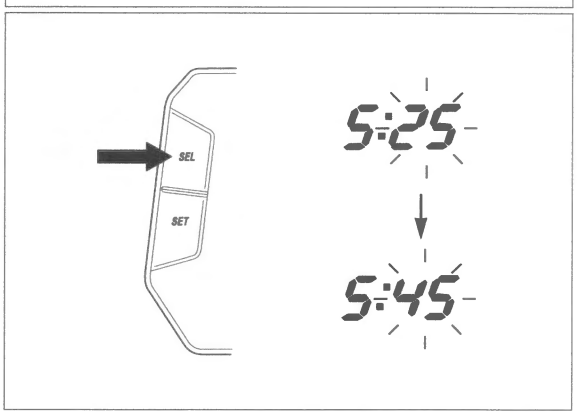
- Push and hold both the SEL button and SET button for more than 2 seconds.
- The clock will be set in the adjust mode with the hour display flashing.



- The time is advanced by one hour each time the button is pushed.
- The time advances faster when the button is pushed and held.

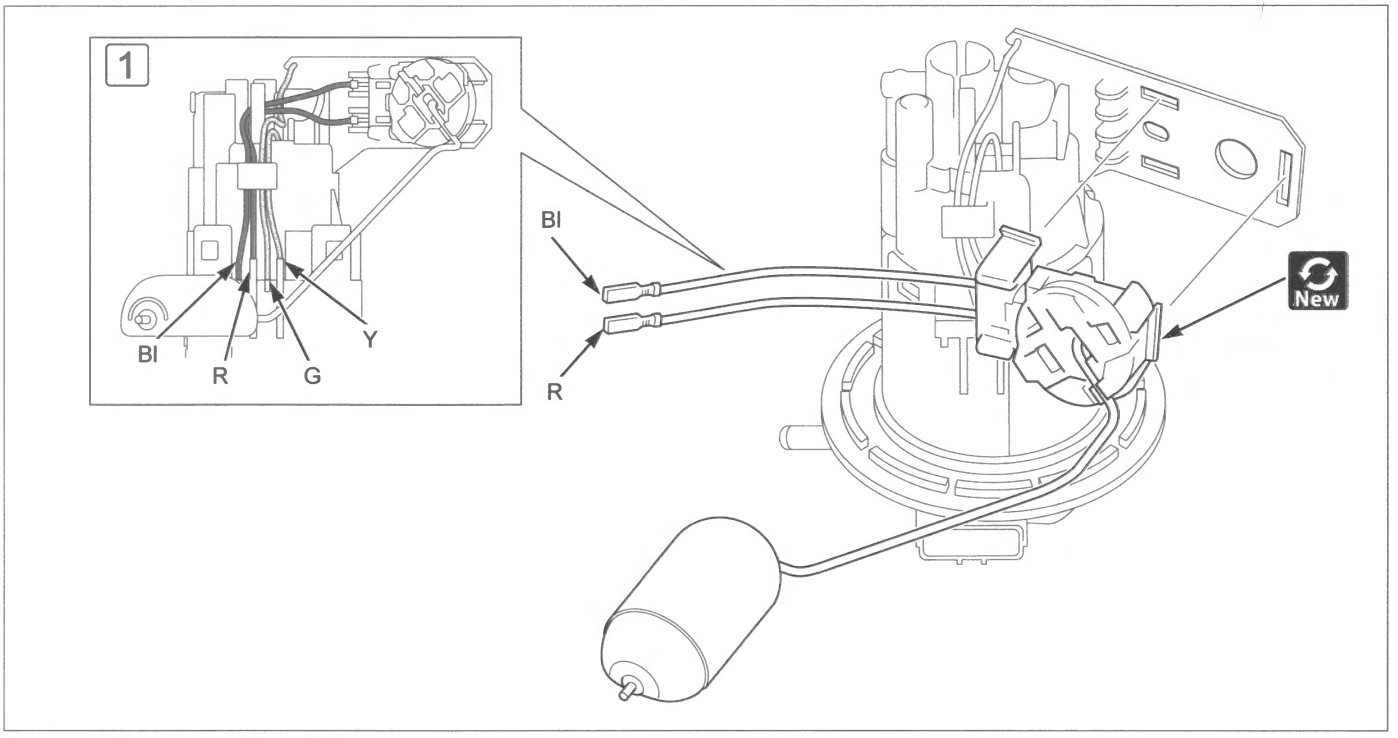


- Push the SET button.
- The minute display will start flashing.



- The time advances by one minute, each time the button is pushed.
- The time advances faster when the button is pushed and held.
- To end the adjustment, push the SET button, or turn the ignition switch to OFF.
- The display will stop flashing automatically and the adjustment will be cancelled if the button is not pushed for about 30 seconds.

FUEL LEVEL SENSOR

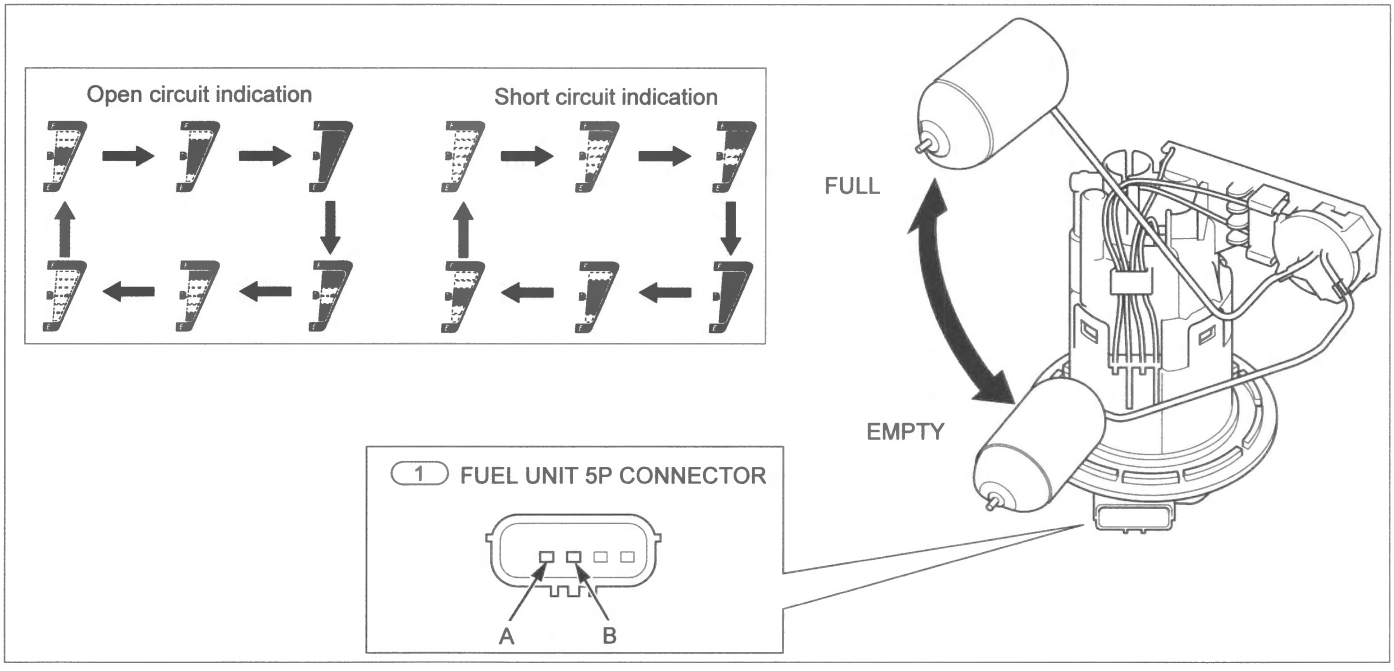


- Fuel pump unit ➔2-4
- [1] Route the fuel level sensor wires to the guide and terminals properly.

FUEL METER TROUBLESHOOTING

FUEL GAUGE FAILURE INDICATION

- Fuel pump unit ➔2-4
- Loose or poor contacts of related terminal/connector



1. Fuel Level Sensor Circuit Inspection

• Check the R and Bl wire. • Is there no open or short circuit?	No ▶	• Faulty R or Bl wire

Yes ▼

2. Fuel Level Sensor Inspection

• Connection: A – B • Standard: FULL 5.5 – 8.5 Ω, EMPTY 385 – 395 Ω • Is it within standard resistance?	No ▶	• Replace the fuel level sensor with a new one ➔4-63, and recheck.

Yes ▼

Replace the combination meter with a new one ➔4-61, and recheck.

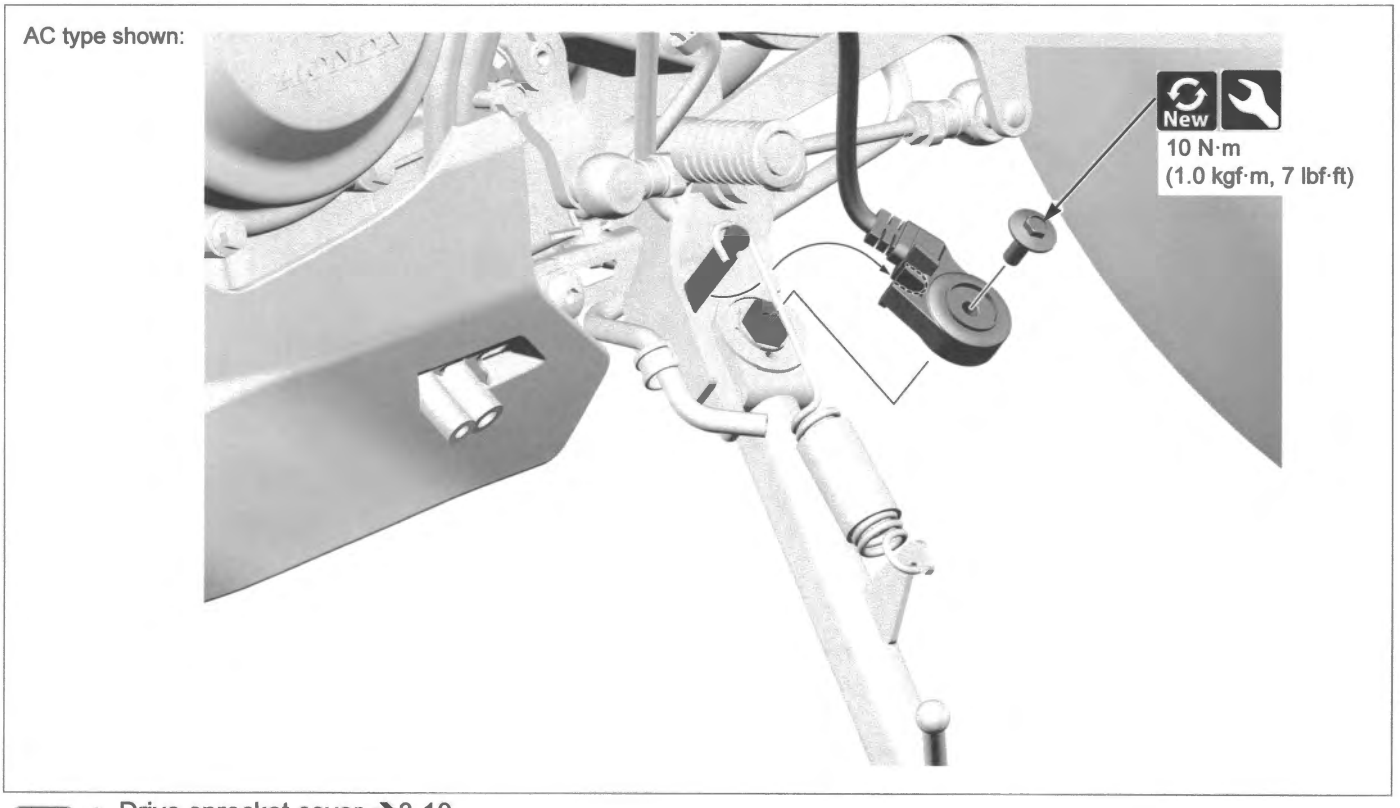
ELECTRICAL COMPONENT

IGNITION SWITCH

- Top bridge ➔3-24

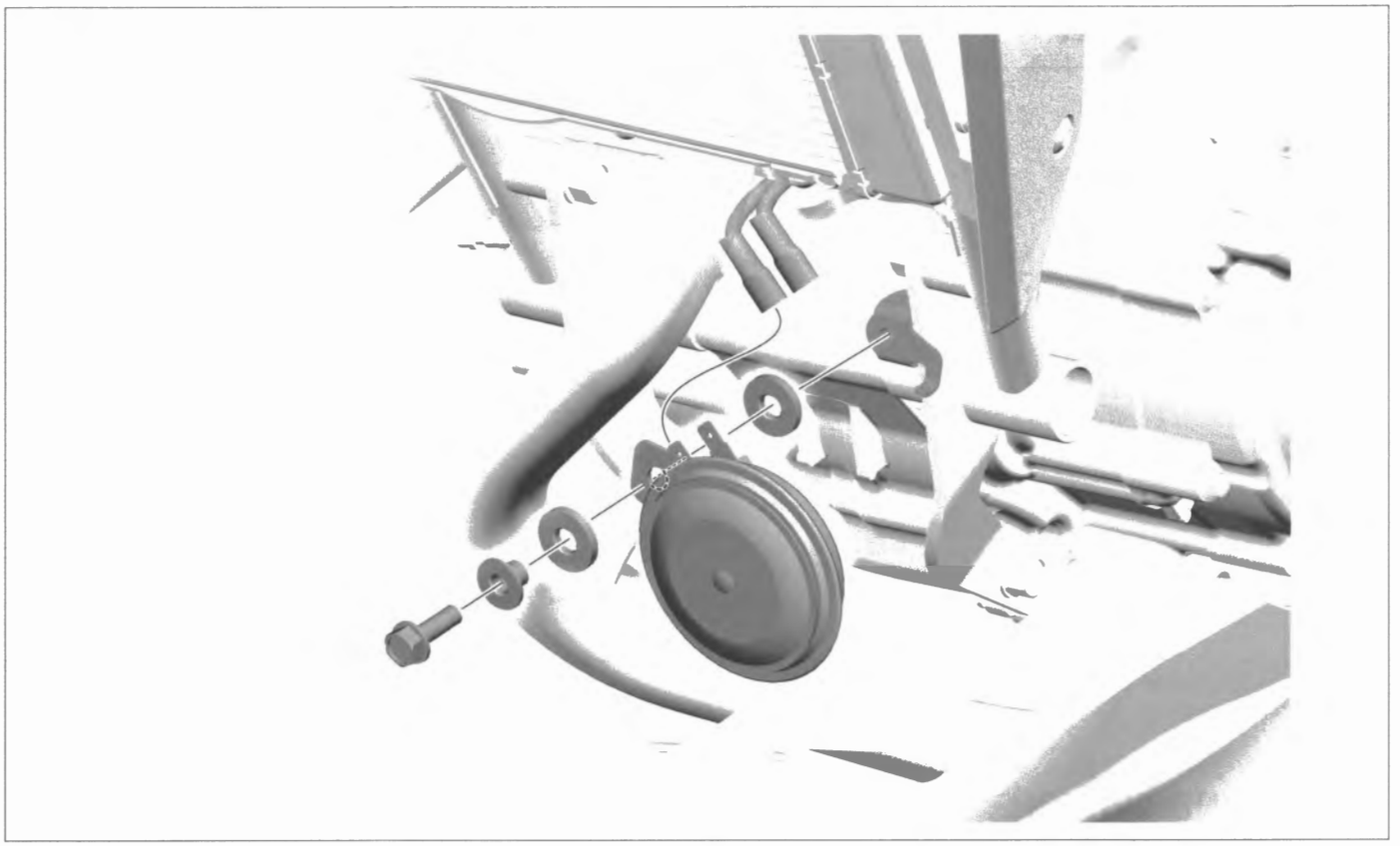
SIDESTAND SWITCH

AC type shown:



- Drive sprocket cover ➔3-10

HORN



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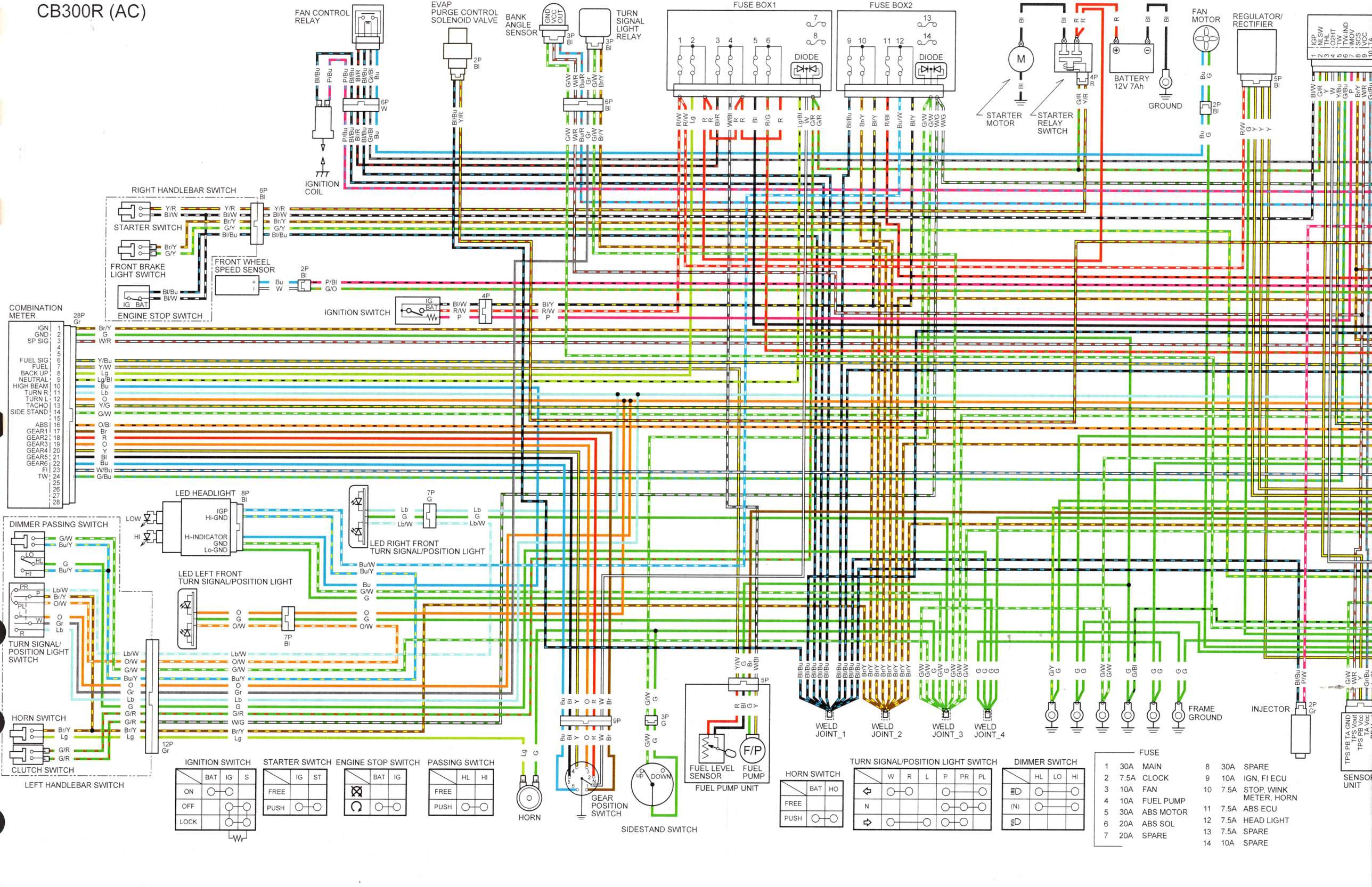
MEMO

CB300R (AC)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EVAP PURGE CONTROL SOLENOID VALVE
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IGNITION SWITCH
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IGN
GND
SP SIG
FUEL SIG
FUEL
BACK UP
NEUTRAL
HIGH BEAM
TURN R
TURN L
TACHO
SIDE STAND
ABS
GEAR1
GEAR2
GEAR3
GEAR4
GEAR5
GEAR6
FI
TW
LED HEADLIGHT
LOW
HI
IGP
Hi-GND
Hi-INDICATOR
GND
Lo-GND
LED RIGHT FRONT TURN SIGNAL/POSITION LIGHT
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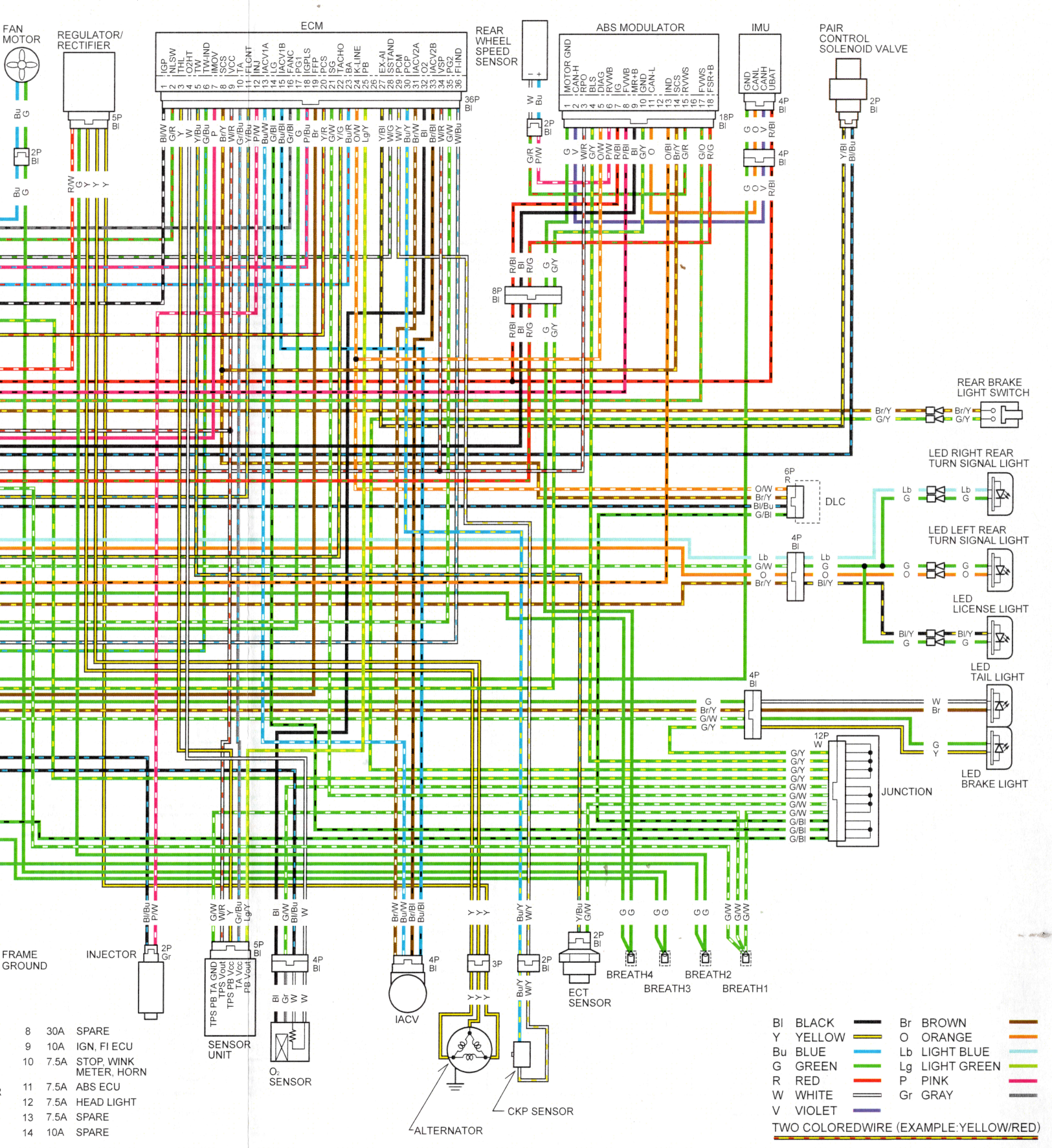
6 20A ABS SOL
7 20A SPARE
8 30A SPARE
9 10A IGN, FI ECU
10 7.5A STOP, WINK METER, HORN
11 7.5A ABS ECU
12 7.5A HEAD LIGHT
13 7.5A SPARE
14 10A SPARE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IACV
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14 10A SPARE
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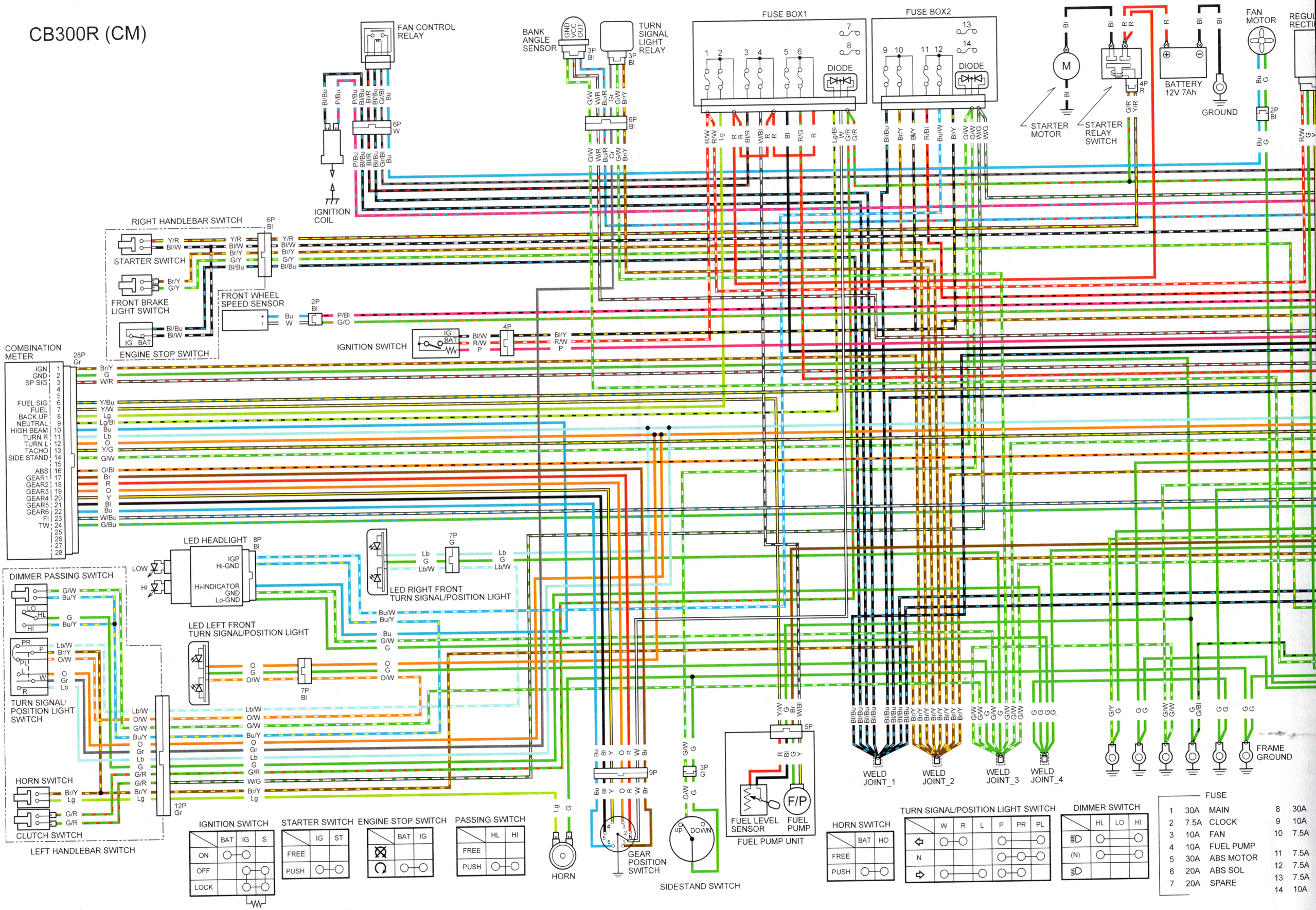
Y YELLOW
Bu BLUE
G GREEN
R RED
W WHITE
V VIOLET
Br BROWN
O ORANGE
Lb LIGHT BLUE
Lg LIGHT GREEN
P PINK
Gr GRAY
TWO COLOREDWIRE (EXAMPLE:YELLOW/RED)
61K0A50

CB300R (CM)



IGNITION SWITCH	BAT	IG	S
ON	○	○	
OFF			
LOCK			

STARTER SWITCH	IG	ST
FREE		
PUSH		

ENGINE STOP SWITCH	BAT	IG
⊠		
Ω		

PASSING SWITCH	HL	HI
FREE		
PUSH		

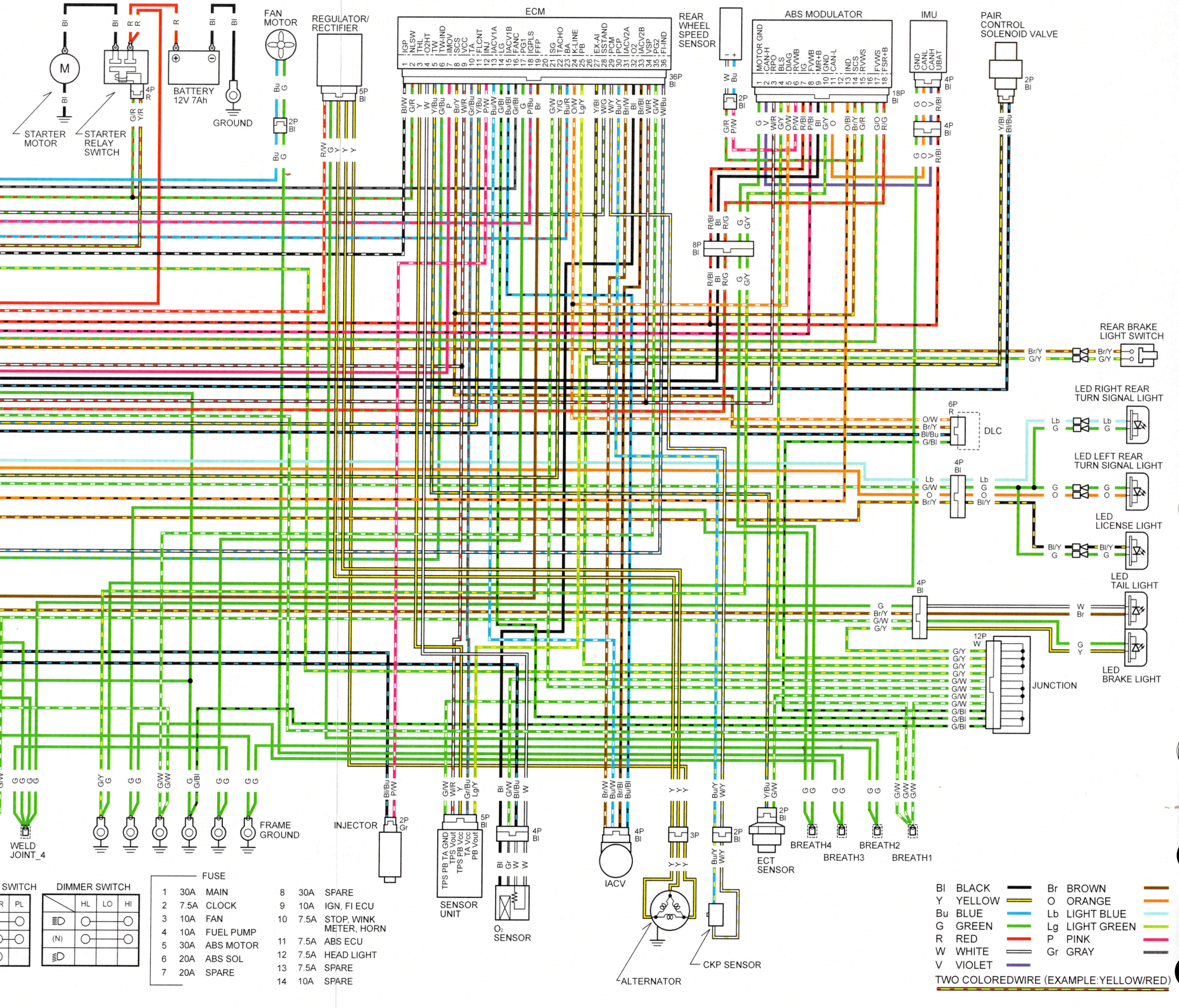
HORN SWITCH	BAT	HO
FREE		
PUSH		

TURN SIGNAL/POSITION LIGHT SWITCH

	W	R	L	P	PR	PL
⇦	○	○			○	○
N				○	○	○
⇨	○	○		○	○	○

DIMMER SWITCH	HL	LO	HI
≡D	○		○
(N)	○		○
≡D			

FUSE				
1	30A	MAIN	8	30A
2	7.5A	CLOCK	9	10A
3	10A	FAN	10	7.5A
4	10A	FUEL PUMP	11	7.5A
5	30A	ABS MOTOR	12	7.5A
6	20A	ABS SOL	13	7.5A
7	20A	SPARE	14	10A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