



Shop Manual

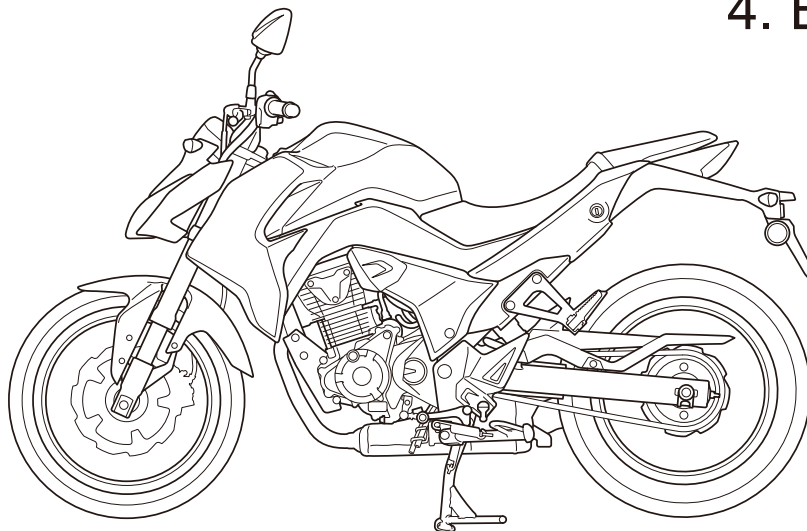
CBF190WH

1. General Information

2. Fuel & Engine

3. Frame & Chassis

4. Electrical System



This book is Specific Shop Manual.
Refer to "Basic Shop Manual" for basic and
common maintenance instructions.

CBF190WH-G (2016)

1. GENERAL INFORMATION

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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 "Spec (Specific)" Service Manual. The service and repair information for this model is described in this manual as specific information. Refer to "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 judgement.

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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GENERAL INFORMATION

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 specified torque.		Replace with a new one before assembly.
	Check the part for an inspection.		Measure the part for an inspection.
	Turn ignition switch to OFF.		Turn ignition switch to ON.
	Start the engine.		Measure a resistance or check continuity.
	Measure a voltage.		Measure an ampere.
	Use the Honda special tool.		Refer to "Basic" Service Manual for the instruction.

LUBRICATION AND SEAL SYMBOL

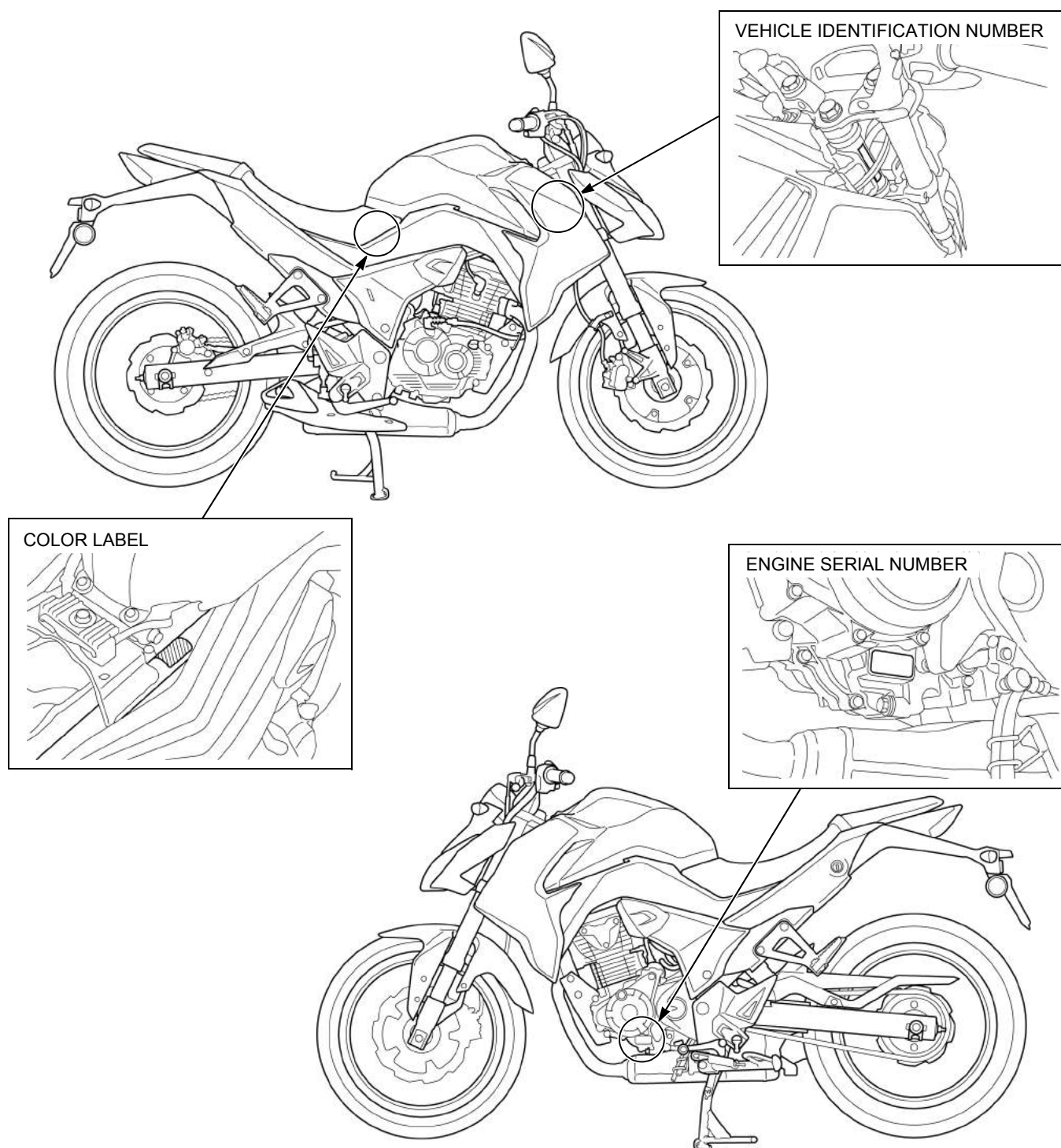
	Use the recommend engine oil.		Apply molybdenum oil solution (mixture of an engine oil and molybdenum grease in a ration of 1:1).
	Apply a specified grease. Use a multi-purpose grease unless otherwise specified.		Apply a liquid sealant.
	Apply a locking agent. Use a medium strength one unless otherwise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



MODEL IDENTIFICATION

- Model name: CBF190WH-G

Code/Type	Destination
AG	Argentina
CO	Colombia
LA	Latin America
CL	Chile
PE	Peru





GENERAL INFORMATION

SPECIFICATIONS

GENERAL SPECIFICATIONS

ITEM		SPECIFICATION
DIMENSIONS	Overall length	1,982 mm
	Overall width	744 mm
	Overall height	1,041 mm
	Wheelbase	1,356 mm
	Seat height	771 mm
	Footpeg height	293 mm
	Ground clearance	138 mm
	Curb weight	140 kg
	Maximum weight capacity	170 kg
FRAME	Frame type	Diamond type
	Front suspension	Telescopic fork
	Front wheel travel	117 mm
	Rear suspension	Swingarm
	Rear wheel travel	114 mm
	Front tire size	110/70R17M/C 54P TL
	Rear tire size	140/70R17M/C 66P TL
	Front tire brand	CM-615H (CHENG SHIN)
	Rear tire brand	CM-616H (CHENG SHIN)
	Front brake	Hydraulic single disc
	Rear brake	Hydraulic single disc
	Caster angle	26° 0'
	Trail length	100 mm
	Fuel tank capacity	12.0 liter
	Fuel tank reserve capacity	2.0 liter
ENGINE	Cylinder arrangement	Single cylinder inclined 15° from vertical
	Bore and stroke	61.000 x 63.096 mm
	Displacement	184.40 cm ³
	Compression ratio	9.5 : 1
	Valve train	Chain driven OHC with rocker arm
	Intake valve	opens 10° BTDC at 1 mm lift
		closes 35° ABDC at 1 mm lift
	Exhaust valve	opens 35° BBDC at 1 mm lift
		closes 5° ATDC at 1 mm lift
	Lubrication system	Forced pressure and wet sump
	Oil pump type	Trochoid
	Cooling system	Air cooled
	Air filtration	Viscous paper filter
	Engine dry weight	29.1 kg
FUEL SYSTEM	Emission control system	Crankcase emission control system Three-way catalytic converter Evaporative emission control system
	Type	PGM-FI (Programmed Fuel Injection)
	Throttle bore	30 mm



ITEM		SPECIFICATION
DRIVE TRAIN	Clutch system	Multi-plate, wet
	Clutch operation system	Cable operating
	Transmission	5 speeds
	Primary reduction	3.136 (69/22)
	Final reduction	3.214 (45/14)
	Gear ratio	1st 3.076 (40/13)
		2nd 1.789 (34/19)
		3rd 1.300 (26/20)
		4th 1.066 (32/30)
		5th 0.916 (22/24)
	Gearshift pattern	Left foot operated return system 1 - N - 2 - 3 - 4 - 5
ELECTRICAL	Ignition system	Full transistorized
	Starting system	Electric starter motor
	Charging system	Triple phase output alternator
	Regulator/rectifier	SCR shorted, triple phase full-wave rectification
	Lighting system	Battery

FUEL & ENGINE SPECIFICATIONS

FUEL SYSTEM

ITEM	SPECIFICATIONS
Throttle body identification number	GQMPA
Idle speed	1,500 ± 100 rpm
Throttle grip freeplay	2 – 6 mm
Fuel pressure at idle	263 – 316 kPa
Fuel pump flow (at 12 V)	36 cm ³ minimum/10 seconds

LUBRICATION SYSTEM

Unit: mm

ITEM		STANDARD	LIMIT
Engine oil capacity	After draining	1.0 liter	–
	After disassembly	1.2 liter	–
Recommended engine oil		Honda “4-stroke motorcycle oil” or an equivalent motor oil. API service classification: SG or higher JASO T903 standard: MA Viscosity: SAE 10W-30	–
Oil pump rotor	Tip clearance	0.15	0.20



GENERAL INFORMATION

CYLINDER HEAD

Unit: mm

ITEM			STANDARD	LIMIT
Cylinder compression			1,451 kPa at 450 rpm	—
Valve clearance		IN	0.08 ± 0.02	—
		EX	0.24 ± 0.02	—
Camshaft	Cam lobe height	IN	33.385 – 33.625	33.355
		EX	33.215 – 33.455	33.095
Rocker arm, rocker arm shaft	Rocker arm shaft O.D.	IN/EX	9.988 – 10.000	—
Valve, valve guide	Valve stem O.D.	IN	4.975 – 4.990	4.965
		EX	4.955 – 4.970	4.945
	Valve guide I.D.	IN/EX	5.000 – 5.012	—
	Valve guide projection above cylinder head	IN/EX	16.8 – 17.0	—
	Valve seat width	IN	1.2 – 1.4	1.8
		EX	1.0 – 1.2	1.6
Valve spring free length		INNER	35.59	34.88
		OUTER	39.46	38.67
Cylinder head warpage			—	0.05

CYLINDER/PISTON

Unit: mm

ITEM			STANDARD	LIMIT
Cylinder	I.D.		61.00 – 61.01	61.10
	Warpage		—	0.10
Piston	Piston O.D.		60.981 – 60.997 at 13 mm from bottom of skirt	60.900
	Piston pin bore I.D.		14.002 – 14.008	14.020
	Piston pin O.D.		13.994 – 14.000	13.980
Piston rings	Piston ring end gap	Top	0.07 – 0.17	0.27
		Second	0.17 – 0.32	0.42
		Oil (side rail)	0.10 – 0.35	0.55
	Piston ring-to-ring groove clearance	Top	0.015 – 0.045	—
		Second	0.015 – 0.045	—

CLUTCH/GEARSHIFT LINKAGE

Unit: mm

ITEM		STANDARD	LIMIT
Clutch lever freeplay		10 – 20	—
Clutch	Disc thickness	2.92 – 3.08	2.70
	Plate warpage	—	0.15
	Spring free length	40.5	39.7
Primary driven gear I.D.		23.000 – 23.021	—
Clutch outer guide	O.D.	22.959 – 22.980	—
	I.D.	16.991 – 17.009	—
Mainshaft O.D. at clutch outer guide		16.966 – 16.984	—

ALTERNATOR/STARTER CLUTCH

Unit: mm

ITEM	STANDARD	LIMIT
Starter driven gear boss O.D.	45.660 – 45.673	—

**CRANKSHAFT/TRANSMISSION/BALANCER**

Unit: mm

ITEM			STANDARD	LIMIT
Connecting rod	Side clearance		0.10 – 0.35	0.45
	Radial clearance		0 – 0.008	0.05
Connecting rod small end I.D.			14.010 – 14.028	14.038
Crankshaft	Runout		—	0.03
Transmission	Gear I.D.	M4	20.000 – 20.018	—
		M5	17.000 – 17.018	—
		C1	20.500 – 20.521	—
		C2	23.020 – 23.041	—
		C3	20.020 – 20.038	—
	Gear bushing O.D.	C1	20.459 – 20.480	—
		C2	22.984 – 23.005	—
	Gear bushing I.D.	C1	17.000 – 17.018	—
		C2	20.020 – 20.041	—
	Mainshaft O.D.	at M4	19.968 – 19.980	—
		at M5	16.968 – 16.980	—
	Countershaft O.D.	at C1	16.966 – 16.984	—
		at C2	19.978 – 19.989	—
		at C3	19.988 – 20.000	—
Shift fork, fork shaft	Fork I.D.		10.000 – 10.018	—
	Fork shaft O.D.		9.986 – 9.995	—
	Claw thickness		4.93 – 5.00	4.83

FRAME & CHASSIS SPECIFICATIONS**FRONT WHEEL/SUSPENSION/STEERING**

Unit: mm

ITEM		STANDARD	LIMIT
Cold tire pressure	Driver only	200 kPa	—
	Driver and passenger	200 kPa	—
Axle runout		—	0.2
Wheel rim runout	Radial	—	2.0
	Axial	—	2.0
Wheel balance weight		60 g maximum	—
Fork	Recommended fork fluid	MX4#	—
	Fluid level	70	—
	Fluid capacity	395 cm ³	—

REAR WHEEL/BRAKE/SUSPENSION

Unit: mm

ITEM		STANDARD	LIMIT
Cold tire pressure	Driver only	200 kPa	—
	Driver and passenger	225 kPa	—
Axle runout		—	0.2
Wheel rim runout	Radial	—	2.0
	Axial	—	2.0
Drive chain slack		25 – 35	50
Drive chain size/link		428HS/132L	—
Rear shock absorber adjuster standard position		Second from the softest position	—



GENERAL INFORMATION

BRAKE SYSTEM

Unit: mm

ITEM		STANDARD	LIMIT
Front	Specified brake fluid	DOT 3 or DOT 4	—
	Brake disc thickness	3.8 – 4.2	3.5
	Brake disc warpage	—	0.3
	Master cylinder I.D.	12.700 – 12.743	—
	Master piston O.D.	12.657 – 12.684	—
	Caliper cylinder I.D.	25.400 – 25.450	—
	Caliper piston O.D.	25.318 – 25.368	—
Rear	Specified brake fluid	DOT 3 or DOT 4	—
	Brake disc thickness	4.8 – 5.2	4.5
	Brake disc warpage	—	0.3
	Master cylinder I.D.	12.700 – 12.743	—
	Master piston O.D.	12.657 – 12.684	—
	Caliper cylinder I.D.	32.030 – 32.080	—
	Caliper piston O.D.	31.948 – 31.998	—

ELECTRICAL SYSTEM SPECIFICATIONS

PGM-FI SYSTEM

ITEM	SPECIFICATIONS
EOT sensor resistance (20°C)	2.5 – 2.8 kΩ
Fuel injector resistance (24°C)	11 – 13 Ω
EVAP purge control solenoid valve resistance (20°C)	37 – 44 Ω

IGNITION SYSTEM

ITEM	SPECIFICATION
Spark plug	CPR8EA-9 (NGK)
Spark plug gap	0.80 – 0.90 mm
Ignition coil peak voltage	100 V minimum
CKP sensor peak voltage	0.7 V minimum
Ignition timing ("F" mark)	8° BTDC at idle

BATTERY/CHARGING SYSTEM

ITEM		SPECIFICATIONS
Battery	Type	YTX7L-BS
	Capacity	12 V – 6 Ah (10HR)/6.3 Ah (20HR)
	Current leakage	0.25 mA maximum
	Voltage (20°C)	Fully charged
		Needs charging
	Charging current	Normal
		Quick
Alternator	Capacity	0.168 kW/5,000 rpm
	Charging coil resistance (20°C)	0.5 – 1.5 Ω

LIGHTS/METERS/SWITCHES

ITEM		SPECIFICATION
Fuse	Main	20 A
	Sub	5 A x 1, 10 A x 2
Fuel level sensor resistance (20°C)	Full	6 – 10 Ω
	Empty	90 – 100 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)

STANDARD TIGHTENING TORQUE

FASTENER TYPE	TRQ	FASTENER TYPE	TRQ
5 mm hex bolt and nut	5.2	5 mm screw	4.2
6 mm hex bolt and nut	10	6 mm screw	9.0
8 mm hex bolt and nut	22	6 mm flange bolt	12
10 mm hex bolt and nut	34	8 mm flange bolt and nut	27
12 mm hex bolt and nut	54	10 mm flange bolt and nut	39

FUEL PUMP UNIT

ITEM	Q'TY	DIA	TRQ	REMARKS
Fuel pump setting plate nut	4	6	12	→2-4

THROTTLE BODY

ITEM	Q'TY	DIA	TRQ	REMARKS
Throttle cable A adjuster lock nut (throttle body side)	1	6	4.5	
Throttle cable B nut (throttle body side)	1	6	4.5	
Sensor unit screw	2	4	2.1	
IACV screw	3	4	2.1	
Throttle cable stay torx screw	1	5	5.1	
Throttle body insulator bolt	2	6	12	

LUBRICATION SYSTEM

ITEM	Q'TY	DIA	TRQ	REMARKS
Engine oil drain bolt	1	12	30	
Oil pump cover screw	1	4	3.0	

CYLINDER HEAD

ITEM	Q'TY	DIA	TRQ	REMARKS
Timing hole cap	1	14	10	
Crankshaft hole cap	1	32	15	Apply grease.
Valve adjusting lock nut	2	6	18	Apply engine oil.
Cam chain tensioner lifter plug	1	6	4.0	
Camshaft stopper bolt	1	6	12	Apply engine oil.
Cam sprocket bolt	2	5	9.0	
Rocker arm shaft bolt	2	5	5.0	
Cylinder head nut	4	9	30	Apply engine oil.
Cylinder stud bolt	4	9	9.0	→2-15

CLUTCH/GEARSHIFT LINKAGE

ITEM	Q'TY	DIA	TRQ	REMARKS
Clutch center lock nut	1	14	83	Apply engine oil.
Clutch lifter plate bolt	4	6	12	
Oil filter rotor lock nut	1	14	83	Apply engine oil.
Oil filter rotor cover screw	3	5	4.0	
Gearshift cam bolt	1	6	12	Apply locking agent.
Shift drum stopper arm bolt	1	6	12	Apply locking agent.
Gearshift return spring pin	1	8	22	



GENERAL INFORMATION

ALTERNATOR/STARTER CLUTCH

ITEM	Q'TY	DIA	TRQ	REMARKS
Flywheel nut	1	14	74	Apply engine oil.
Starter clutch bolt	6	6	16	Apply locking agent.
Stator bolt	3	6	12	
CKP sensor bolt	2	6	12	Apply locking agent.
Alternator wire guide bolt	1	6	12	Apply locking agent.

CRANKCASE/CRANKSHAFT/BALANCER

ITEM	Q'TY	DIA	TRQ	REMARKS
Mainshaft bearing setting plate bolt	2	6	12	Apply locking agent.
Push plug bolt	1	6	10	Apply locking agent.
Balancer driven gear lock nut	1	14	64	Apply engine oil.
Balancer nut	1	12	55	Apply engine oil.

ENGINE UNIT

ITEM	Q'TY	DIA	TRQ	REMARKS
Front engine hanger nut	4	10	34	
Rear engine hanger nut	2	10	54	
Drive sprocket bolt	2	6	12	

BODY PANELS

ITEM	Q'TY	DIA	TRQ	REMARKS
Rearview mirror lock nut	2	10	34	
Rearview mirror adaptor bolt	2	10	34	
Rear fender A screw	2	4	1.0	
Rear garnish screw	10	4	1.0	
Fuel tank shroud screw	28	4	1.0	
Rear fender B screw	2	4	1.0	
Taillight bolt	2	6	7.5	
Taillight side cover screw	4	4	1.0	
Battery box bolt	3	6	7.0	
Rear master cylinder bolt	2	6	12	

SIDESTAND

ITEM	Q'TY	DIA	TRQ	REMARKS
Sidestand pivot bolt	1	10	10	
Sidestand pivot nut	1	10	39	U-nut

EXHAUST PIPE/MUFFLER

ITEM	Q'TY	DIA	TRQ	REMARKS
Exhaust pipe joint nut	2	8	26	
Muffler cover screw	2	6	10	
Exhaust pipe stud bolt	2	8	11	→3-15

FRONT WHEEL

ITEM	Q'TY	DIA	TRQ	REMARKS
Front axle bolt	1	12	64	
Front brake disc bolt	5	8	42	Pre-coated (ALOC) bolt, replace with a new one.
Axle holder pinch bolt	1	8	23	

FORK

ITEM	Q'TY	DIA	TRQ	REMARKS
Bottom bridge pinch bolt	4	8	23	
Top bridge pinch bolt	2	8	23	
Fork cap	2	42	28	
Fork rod nut	2	18	28	

**HANDLEBAR**

ITEM	Q'TY	DIA	TRQ	REMARKS
Handlebar pinch bolt	2	8	23	
Handlebar lever holder bolt	4	6	12	
Clutch lever pivot bolt	1	6	1.0	
Clutch lever pivot nut	1	6	5.9	
Left handlebar switch screw	2	4	1.0	
Right handlebar switch screw	2	5	2.5	

STEERING STEM

ITEM	Q'TY	DIA	TRQ	REMARKS
Steering bearing adjustment nut	1	26	—	→3-21
Steering stem nut	1	24	74	→3-21

REAR WHEEL

ITEM	Q'TY	DIA	TRQ	REMARKS
Rear axle nut	1	16	88	
Rear brake disc bolt	4	8	42	Pre-coated (ALOC) bolt, replace with a new one.
Driven sprocket nut	4	10	64	

REAR SUSPENSION

ITEM	Q'TY	DIA	TRQ	REMARKS
Shock absorber upper nut	1	10	44	
Shock absorber lower nut	1	10	44	
Swingarm pivot nut	1	14	54	Apply grease.

FRONT BRAKE

ITEM	Q'TY	DIA	TRQ	REMARKS
Brake hose oil bolt	2	10	34	
Master cylinder reservoir cap screw	2	4	1.5	
Front brakelight switch screw	1	4	1.2	
Brake lever pivot bolt	1	6	1.0	
Brake lever pivot nut	1	6	6.0	
Pad pin	2	10	18	
Pad pin plug	2	10	2.5	
Brake caliper bolt	2	8	26	Pre-coated (ALOC) bolt, replace with a new one.
Caliper bleed valve	1	8	8.0	

REAR BRAKE

ITEM	Q'TY	DIA	TRQ	REMARKS
Brake hose oil bolt	2	10	34	
Master cylinder reservoir cap screw	2	4	1.5	
Master cylinder joint nut	1	8	17	
Master cylinder hose connector bolt	1	4	1.5	Apply locking agent.
Pad pin	1	10	17	
Caliper bleed valve	1	8	5.4	

PGM-FI SYSTEM

ITEM	Q'TY	DIA	TRQ	REMARKS
EOT sensor	1	10	15	Apply engine oil.
O ₂ sensor	1	12	25	
Bank angle sensor bolt	2	6	10	

IGNITION SYSTEM

ITEM	Q'TY	DIA	TRQ	REMARKS
Spark plug	1	10	16	



GENERAL INFORMATION

BATTERY/CHARGING SYSTEM

ITEM	Q'TY	DIA	TRQ	REMARKS
Battery band bolt	1	6	9.0	

LIGHTING SYSTEM

ITEM	Q'TY	DIA	TRQ	REMARKS
Headlight nut	3	6	7.5	
Front side cover screw	4	4	1.0	
Turn signal light nut	4	10	19	
License light screw	2	4	1.0	

OTHERS

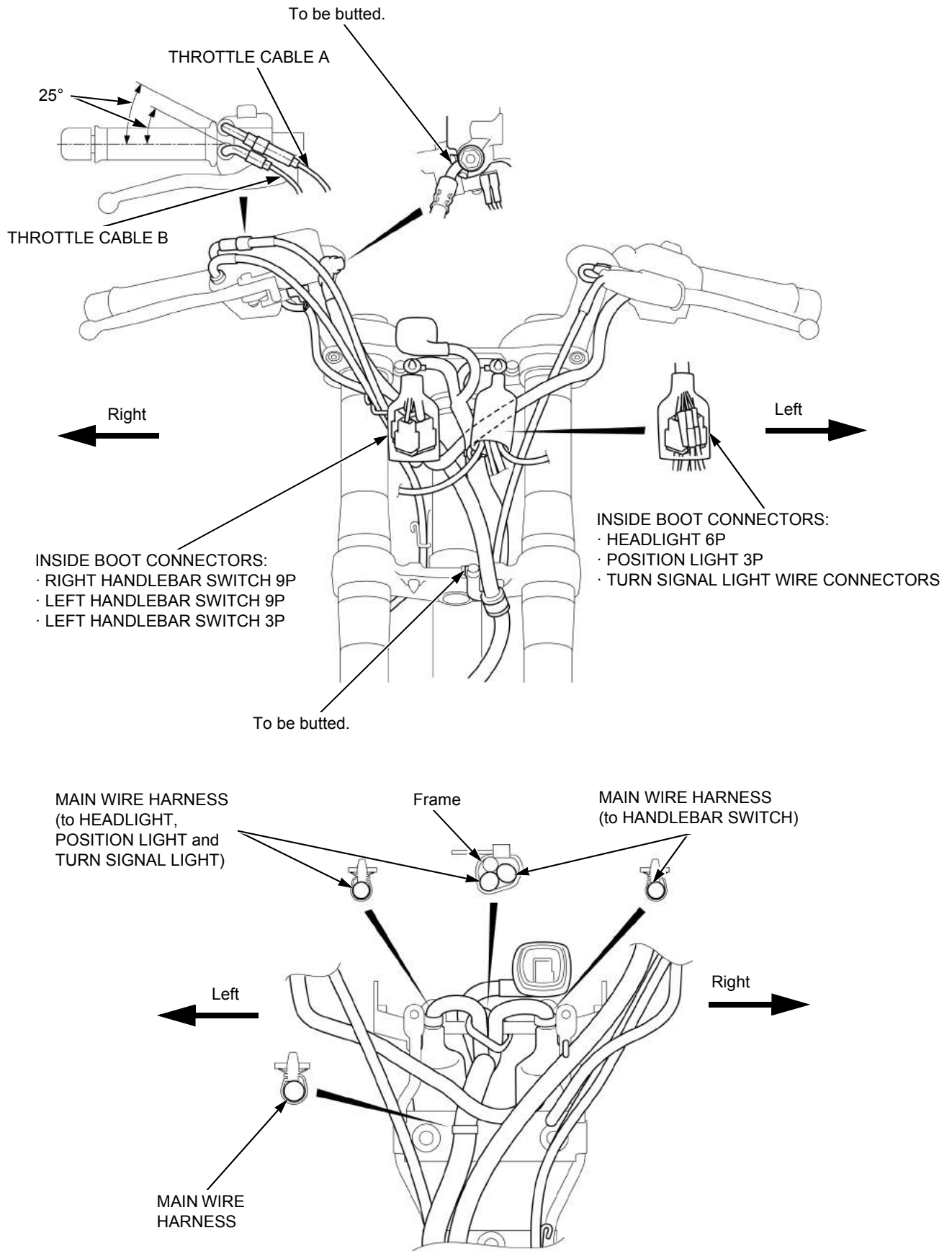
ITEM	Q'TY	DIA	TRQ	REMARKS
Throttle cable A adjuster lock nut (handlebar side)	1	7	3.8	
Seat lock assembly bolt	2	6	12	Replace with a new one.
Throttle cable A nut (handlebar side)	1	10	3.0	
Throttle cable B nut (handlebar side)	1	12	3.0	

SPECIAL TOOL LIST

TITLE	TOOL No.	TOOL NAME
Fuel & Engine	07406-0040004	Fuel pressure gauge
	070MJ-K260100	Fuel pressure gauge attachment
	070MF-KVS0300	Fuel pump case remover
	070PZ-ZY30100	SCS connector
	07708-0030200	Locknut wrench, 10 x 12 mm
	07908-KE90000	Tappet adjusting wrench, 3 x 4 mm
	070MG-0010100	Tensioner stopper
	07757-0010000	Valve spring compressor
	07984-MA60001	Valve guide reamer, 5.0 mm
	07942-MA60000	Valve guide driver, 4.8 mm
	07724-0010200	Gear holder
	07GMB-KT70101	Clutch center holder
	07725-0040001	Flywheel holder
	07933-KM10001	Flywheel puller
Frame & Chassis	07746-0050400	Remover head, 15 mm
	07746-0050100	Bearing remover shaft
	07746-0010300	Attachment, 42 x 47 mm
	07746-0040300	Pilot, 15 mm
	07749-0010000	Driver
	070MF-MEN0100	Bearing installer
	07916-3710101	Steering stem socket wrench
	07GMD-KS40100	Ball race remover shaft
	07946-4300101	Steering stem driver
	07746-0050500	Remover head, 17 mm
	07746-0050100	Bearing remover shaft
	07746-0040400	Pilot, 17 mm
	07746-0010900	Attachment, 40 x 42 mm
	07746-0040500	Pilot, 20 mm
	07914-SA50001	Snap ring pliers
Electrical System	07HGJ-0020100	Peak voltage adapter

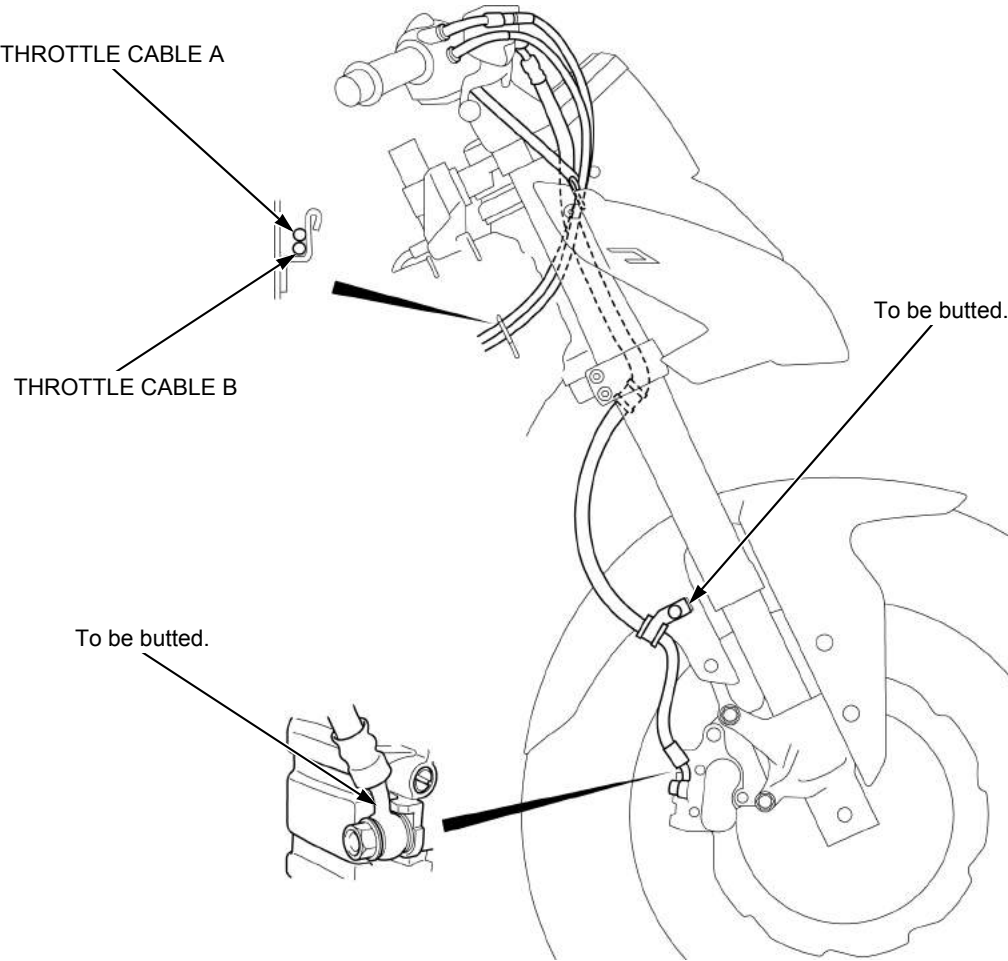
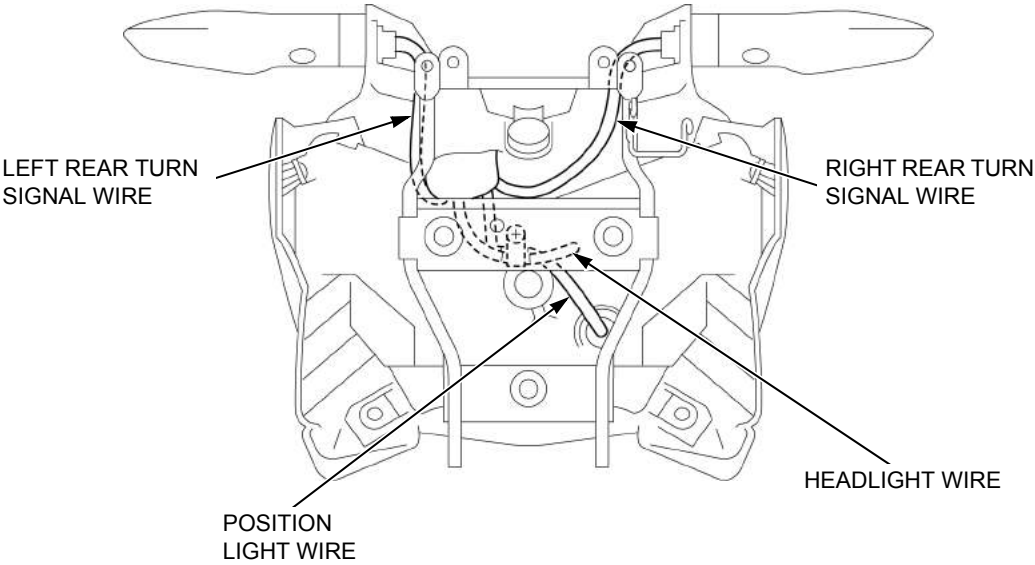


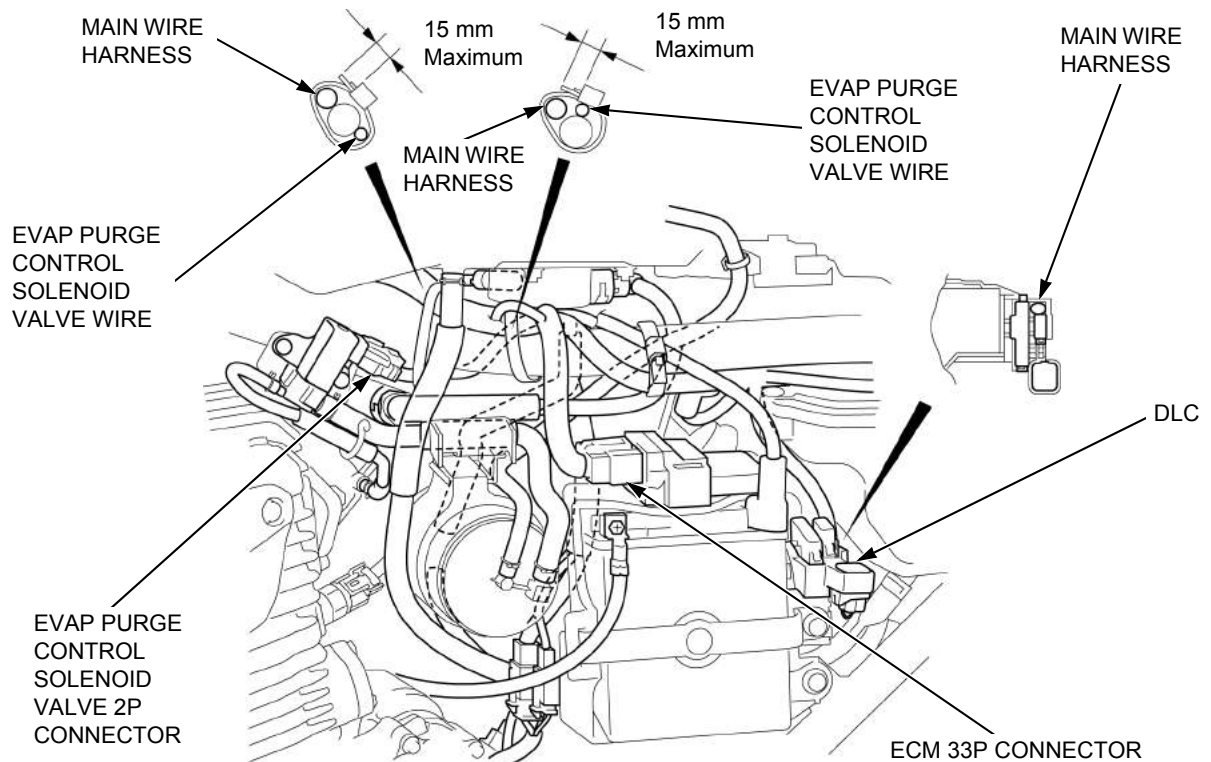
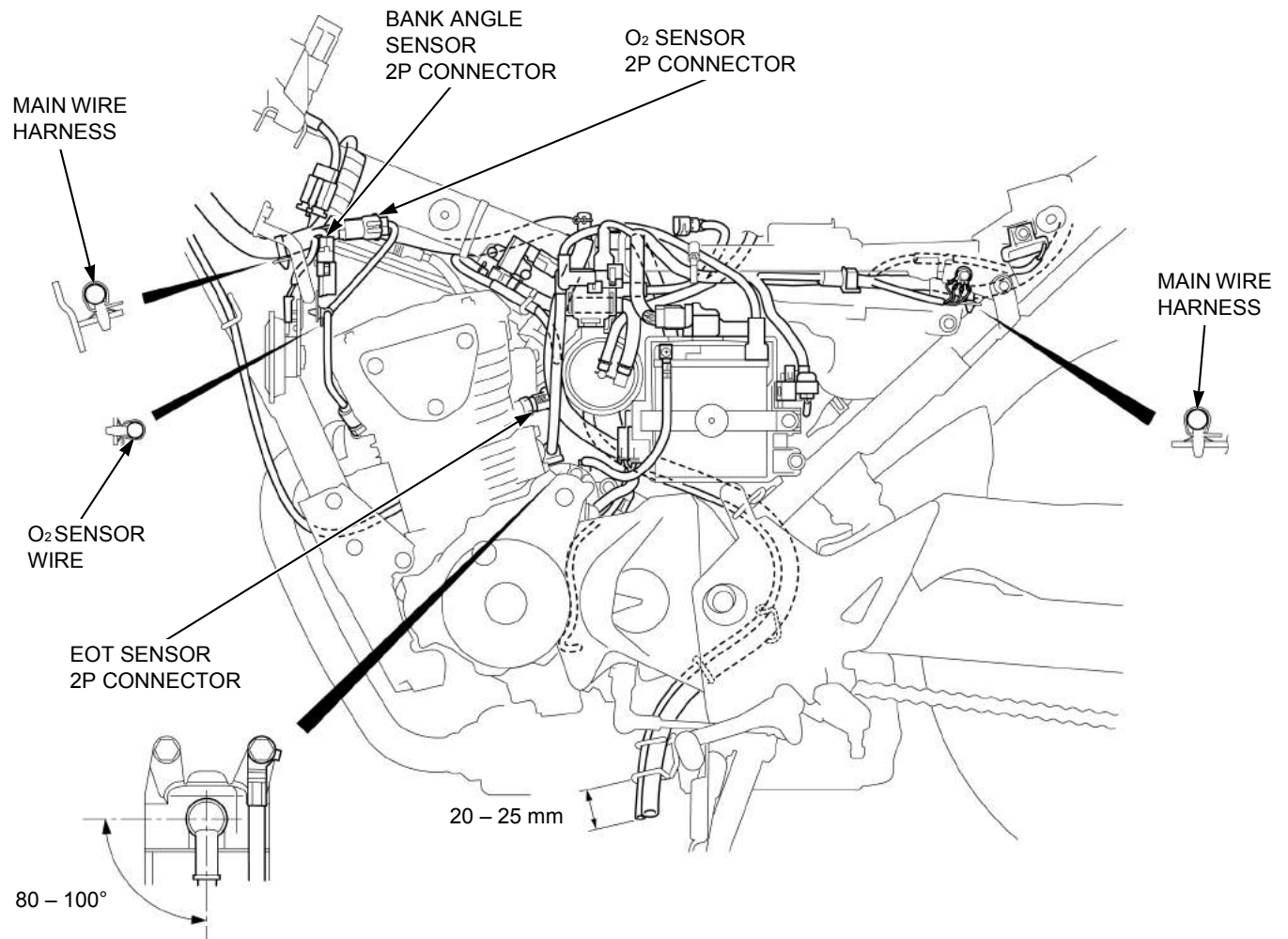
CABLE & HARNESS ROUTING





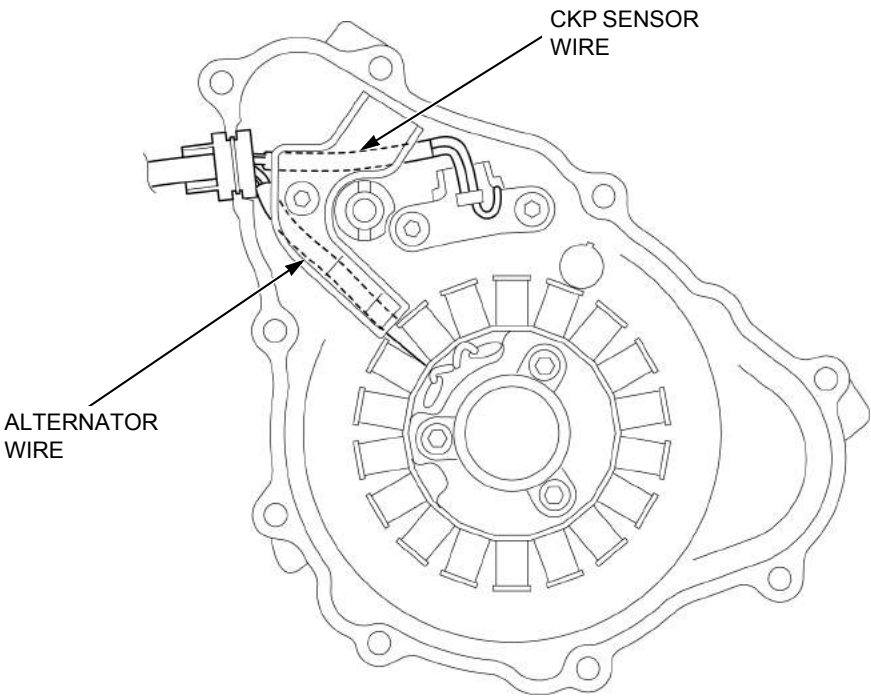
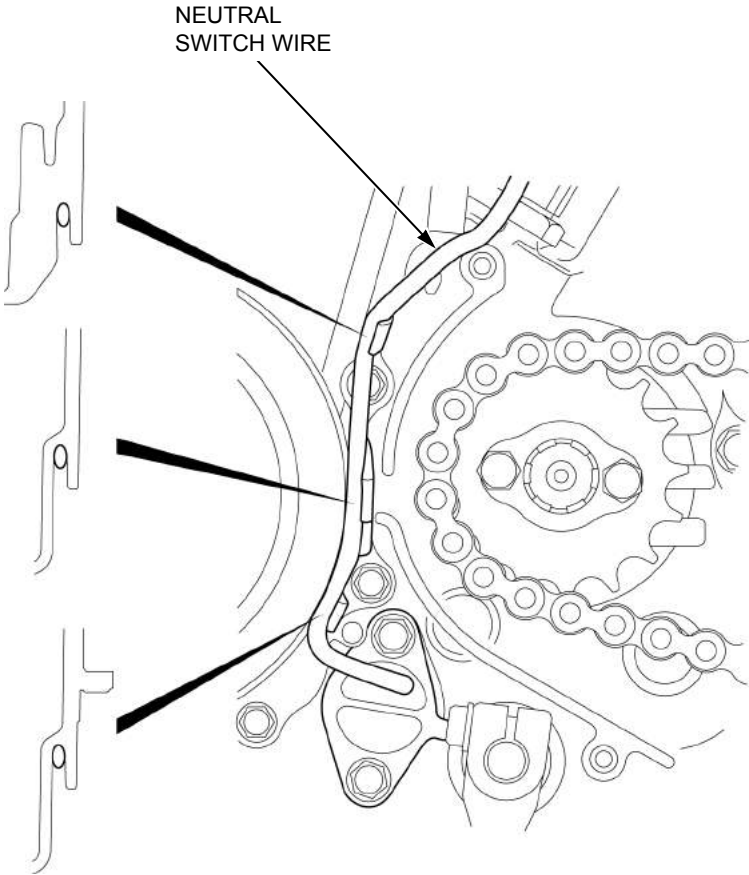
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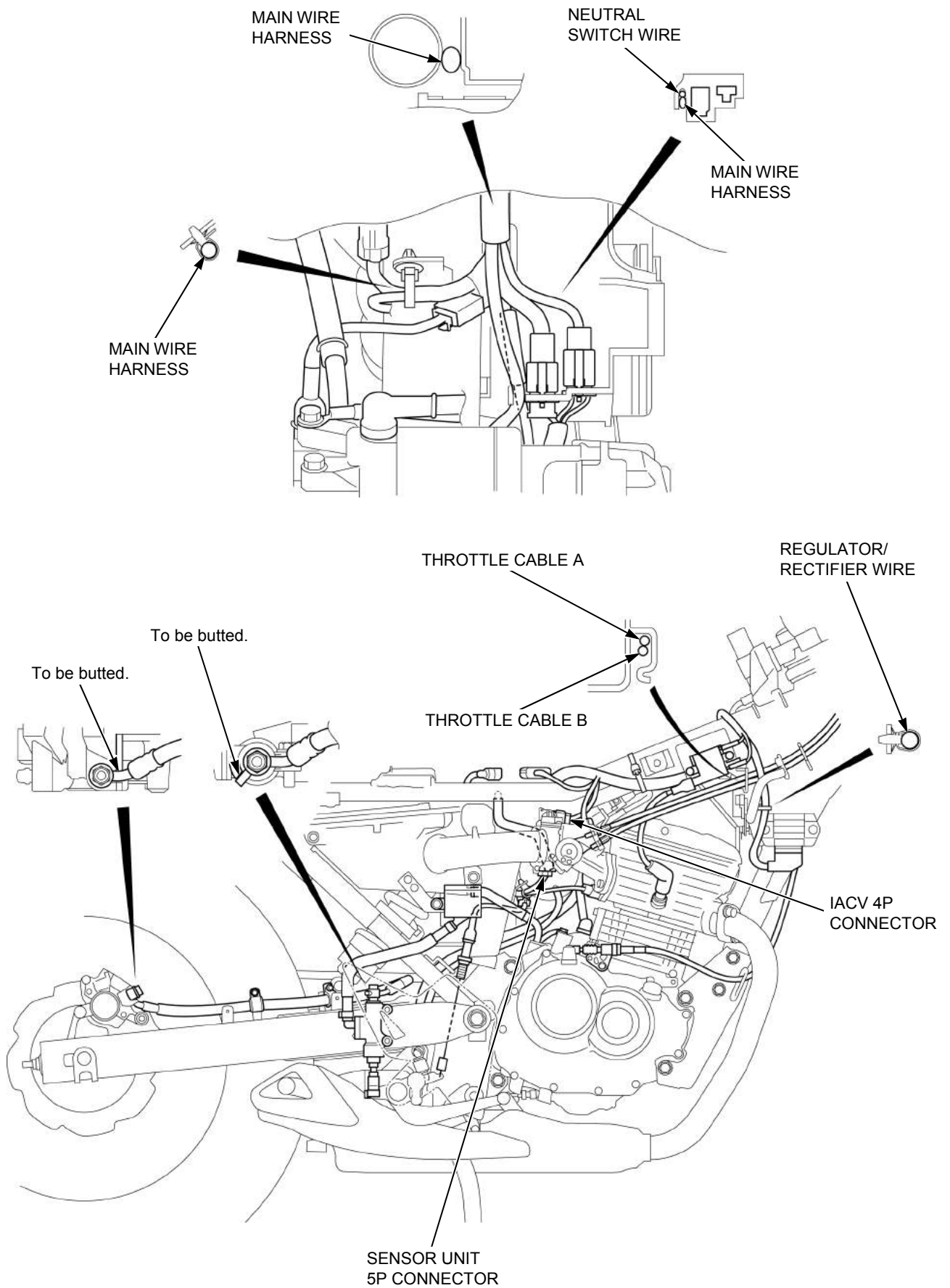






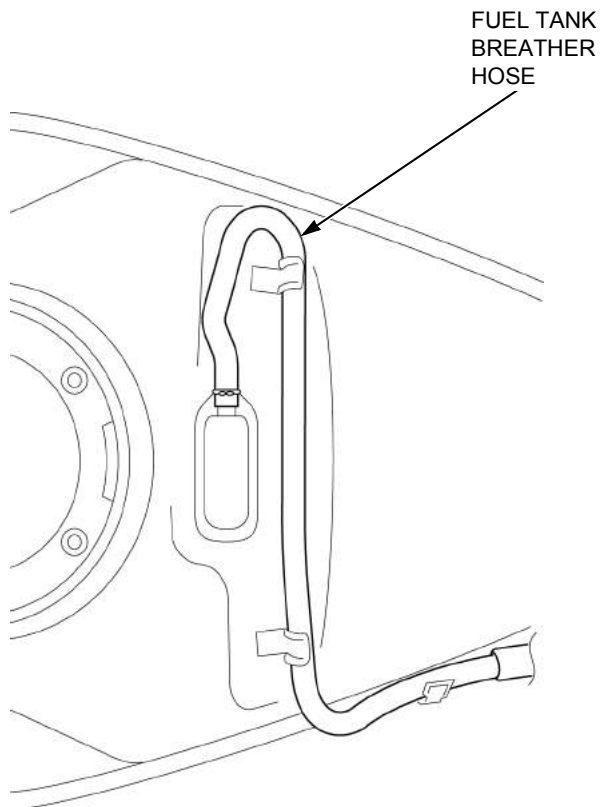
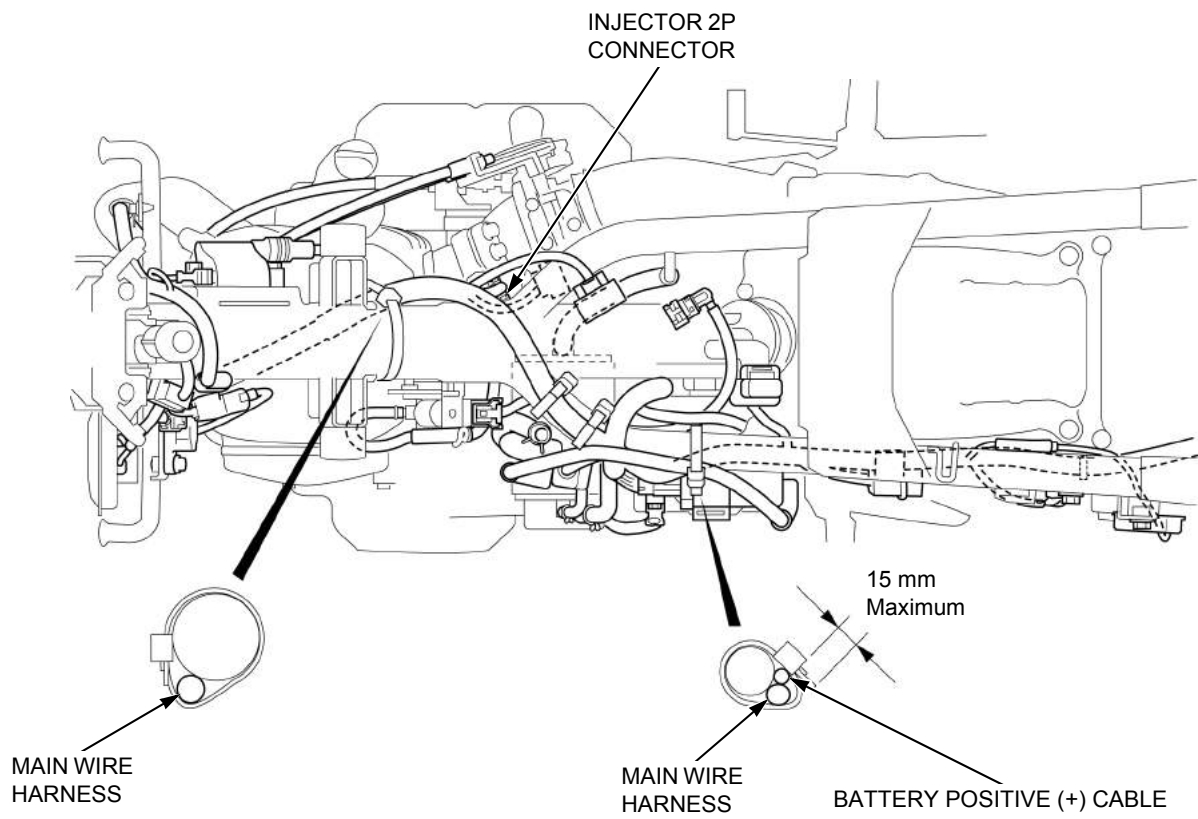
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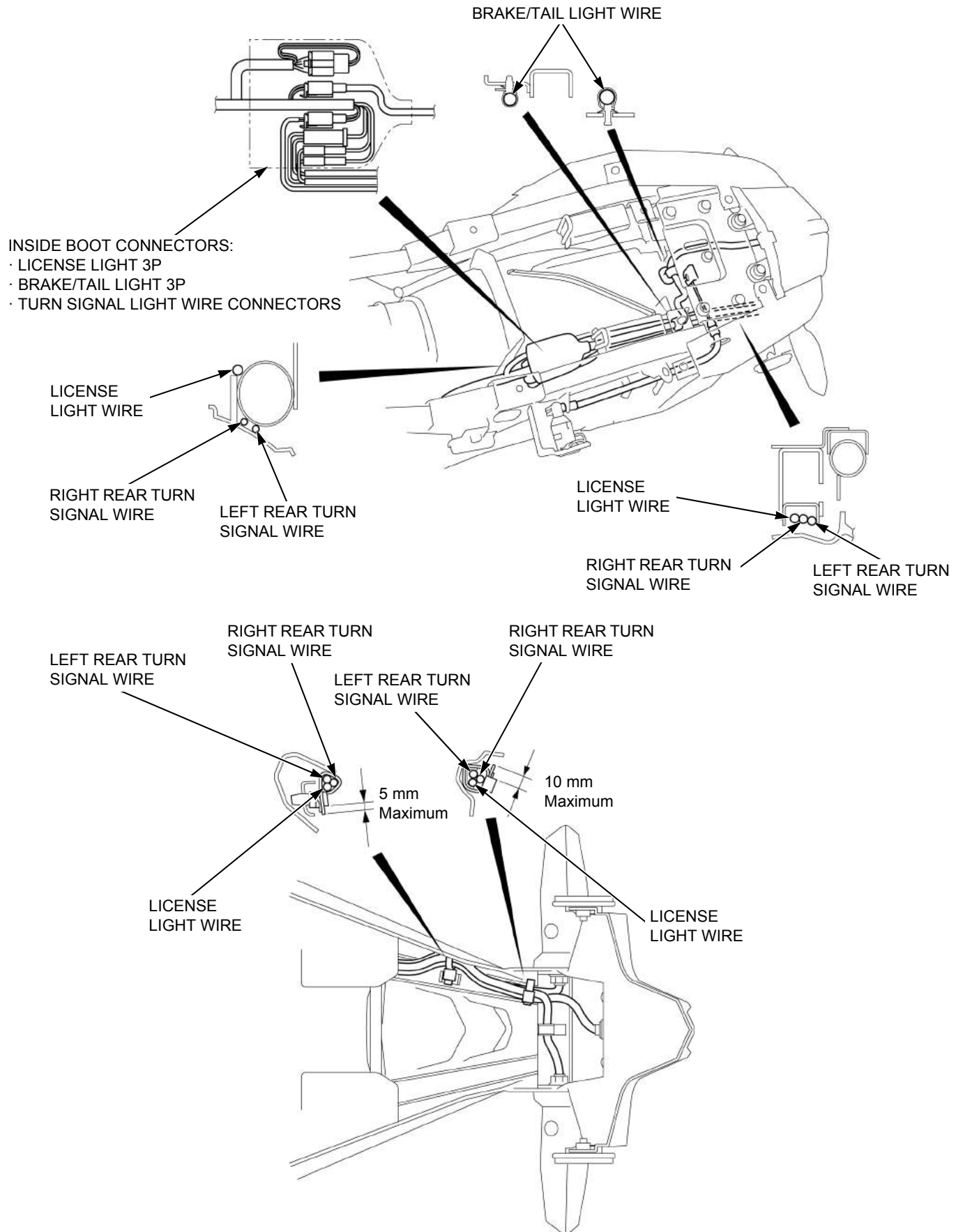






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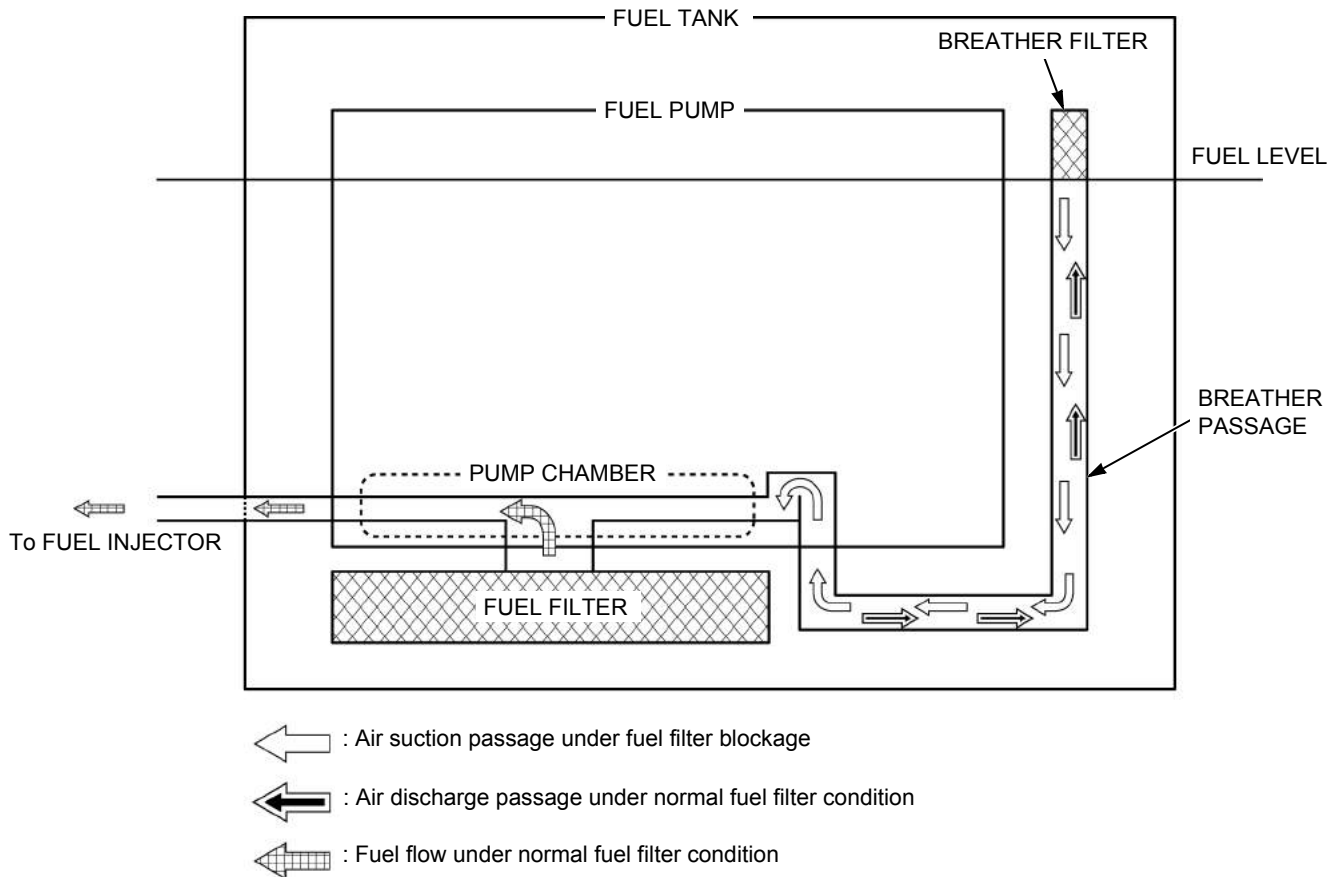






TECHNICAL FEATURES

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 condition, the fuel pump chamber sucks fuel through the fuel filter and then 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 produces "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.



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.



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

ITEMS	NOTE	FREQUENCY (NOTE 1)					ANNUAL CHECK	REGULAR REPLACE	REFER TO PAGE
		X1,000 km	1	4	8	12			
		X1,000 mi	0.6	2.5	5	7.5			
* FUEL LINE				I	I	I	I		
* THROTTLE OPERATION				I	I	I	I		
* AIR CLEANER	NOTE2	Every 16000 km (10000 mi) R							→2-7
CRANKCASE BREATHER	NOTE3			C	C	C	C		
SPARK PLUG				I	R	I			→4-22
* VALVE CLEARANCE			I	I	I	I			→2-15
ENGINE OIL			R	R	R	R	R		→2-14
** ENGINE OIL STRAINER SCREEN						C			→2-14
** ENGINE OIL CENTRIFUGAL FILTER						C			→2-22
* ENGINE IDLE SPEED			I	I	I	I	I		
* EVAPORATIVE EMISSION CONTROL SYSTEM						I			
DRIVE CHAIN		Every 1000 km (600 mi) I, L							
BRAKE FLUID	NOTE4			I	I	I	I	2 years	
BRAKE PADS WEAR				I	I	I	I		
BRAKE SYSTEM			I	I	I	I	I		
BRAKE LIGHT SWITCH				I	I	I	I		
HEADLIGHT AIM				I	I	I	I		→4-30
CLUTCH SYSTEM			I	I	I	I	I		
SIDESTAND				I	I	I	I		
* SUSPENSION				I	I	I	I		
* NUTS, BOLTS, FASTENERS			I		I		I		
** WHEELS/TIRES				I	I	I	I		
** STEERING HEAD BEARINGS			I			I	I		

- * Should be serviced by a dealer, unless the owner has proper tools and service data and is mechanically qualified.
- ** In the interest of safety, we recommend these items be serviced only by a dealer.
- Honda recommends that a dealer should road test the vehicle after each periodic maintenance is carried out.

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. Replacement requires mechanical skill.

MEMO

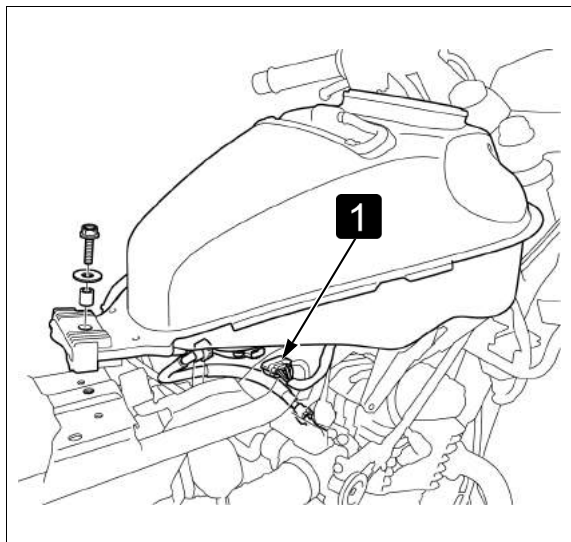
2. FUEL & ENGINE

FUEL LINE	2-2	CYLINDER HEAD	2-15
FUEL PUMP UNIT	2-4	CYLINDER/PISTON	2-21
FUEL TANK	2-6	CLUTCH/GEARSHIFT LINKAGE	2-22
AIR CLEANER	2-7	ALTERNATOR/STARTER CLUTCH	2-25
THROTTLE BODY	2-8	CRANKCASE/CRANKSHAFT/ BALANCER	2-27
EVAP SYSTEM	2-11	TRANSMISSION	2-29
LUBRICATION SYSTEM	2-13	ENGINE UNIT	2-31





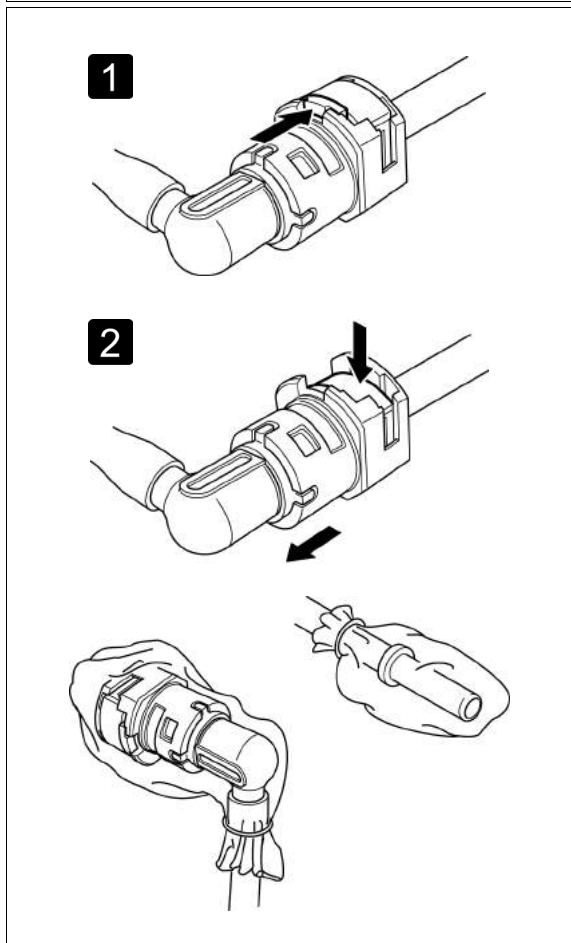
FUEL LINE



- This vehicle uses resin for the part of materials in the fuel feed hose. Do not bend or twist the fuel feed hose.
- Fuel tank center cover →3-7
- **1** Fuel pump 5P connector
- Let the engine idle until it stops.



- Battery negative (-) cable →4-28



- Do not use tools in 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 pump joint/injector 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 the plastic bags.



- 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 fuel pressure will rise. Repeat 2 or 3 times, and check that there is no leakage in the fuel supply system.

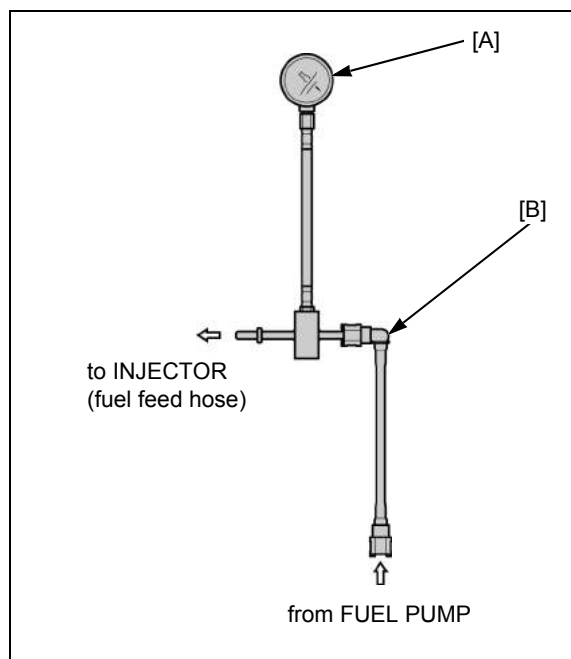


FUEL SUPPLY TEST



- 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)

- Attach the fuel pressure gauge and attachment.

[A] Fuel pressure gauge: 07406-0040004

[B] Fuel pressure gauge attachment: 070MJ-K260100



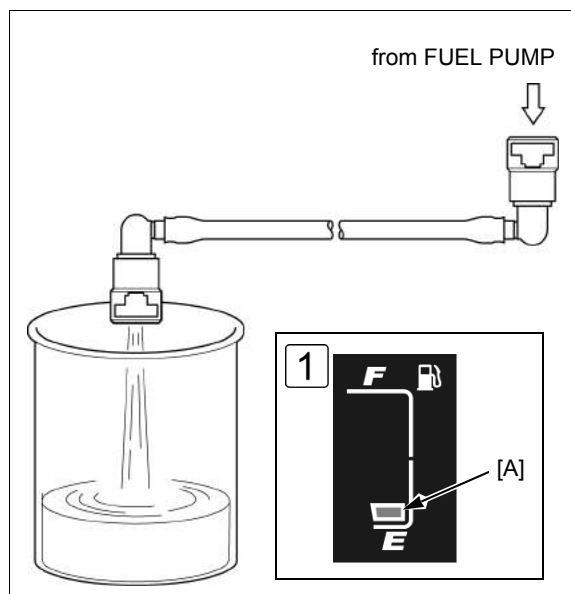
- Temporarily connect the negative cable to the battery and fuel pump 5P connector. Start the engine and let it idle, and read the fuel pressure.

Standard: 263 – 316 kPa



- If the fuel pressure is higher than specified, replace the fuel pump assembly. →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.

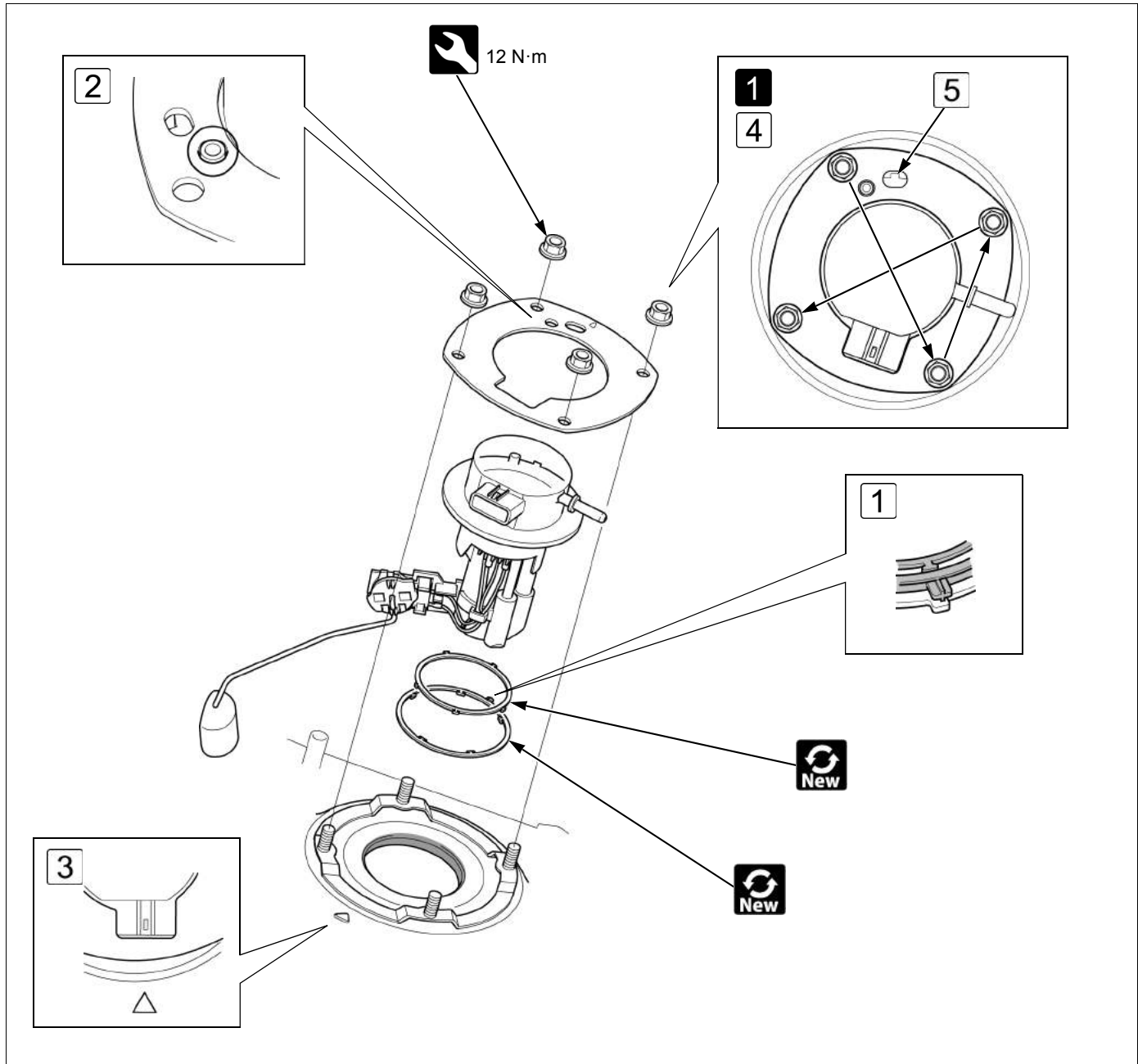
Standard: 36 cm3 minimum/10 seconds



- 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 center-stand. 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 the tab with the boss.
- **2** Set the setting plate onto the fuel pump by aligning the hole and boss.
- **3** Install the fuel pump into the fuel tank by aligning the fuel pump 5P connector with the triangle mark.
- **4** Tighten the fuel pump setting plate nuts in the specified sequence as shown.
- **5** Make sure that the outer packing tab can see in the setting plate hole.
- Fuel pump malfunction and inspection





- 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.



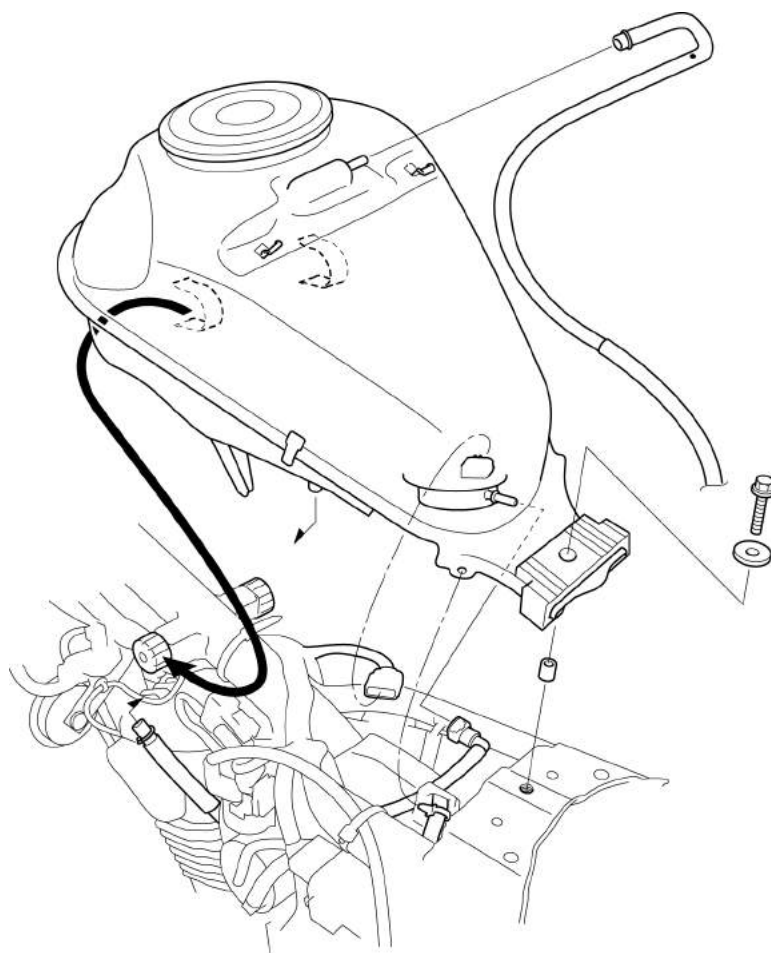
- **1** Release the hooks from the stoppers by slightly spreading the hooks using the special tool.
Fuel pump case remover: 070MF-KVS0300
- **2** Release the hooks from the stoppers by slightly spreading the hooks, and then turn it clockwise.
- Fuel filter clog or excessive damage
- If the fuel filter is clogged, replace it with a new one.



- 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 BI wire connector is disconnected, replace the fuel level sensor with a new one.
- ① Connect the fuel pump motor wires to the specified position.
- ② Make sure the "CLICK" when the fuel pump unit is assembled.
- ③ Route the fuel pump motor wires and fuel level sensor wires to the guide and terminals properly.



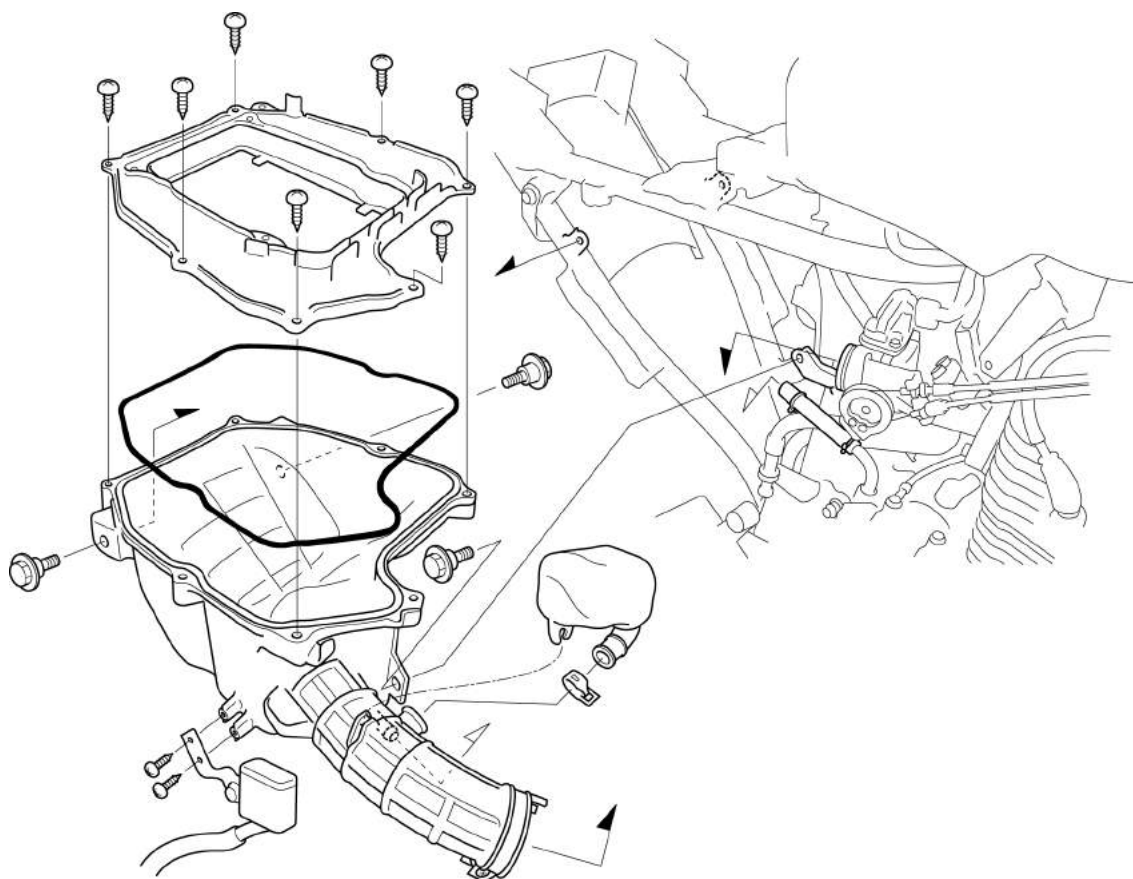
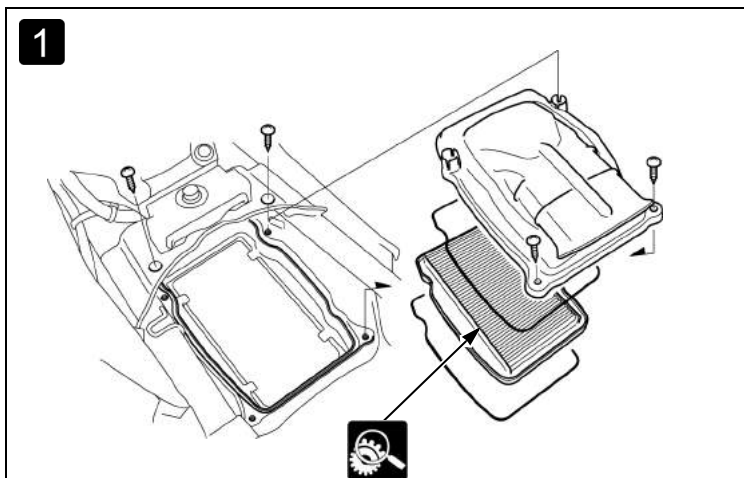
FUEL TANK



- Quick connect fitting (fuel pump side) → 2-2



AIR CLEANER



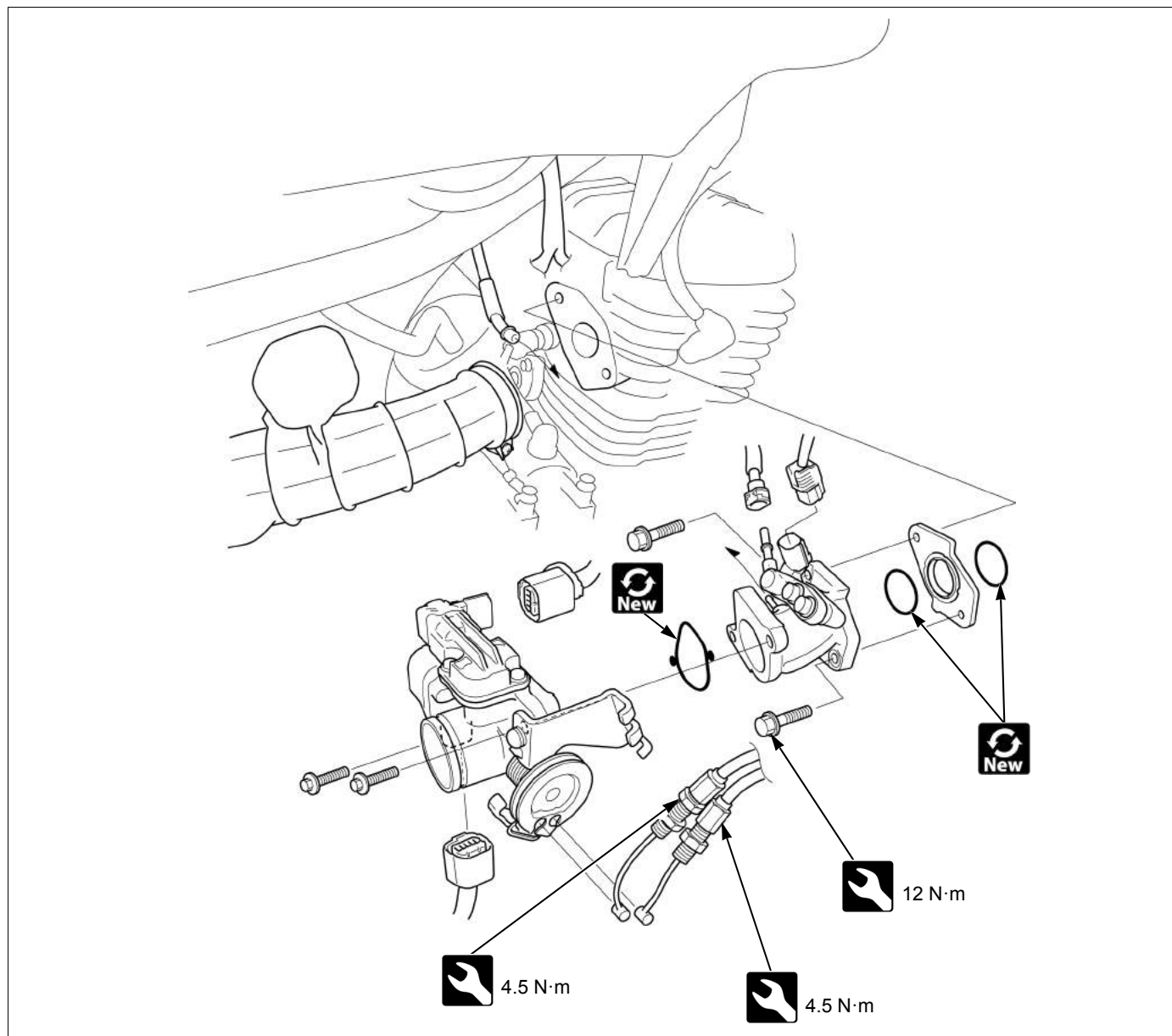
• Seat → 3-3



- **1** Discard the air cleaner element in accordance with the maintenance schedule. → 1-23
- Replace the element any time if it is excessively dirty or damaged.
- Rear shock absorber → 3-25



THROTTLE BODY



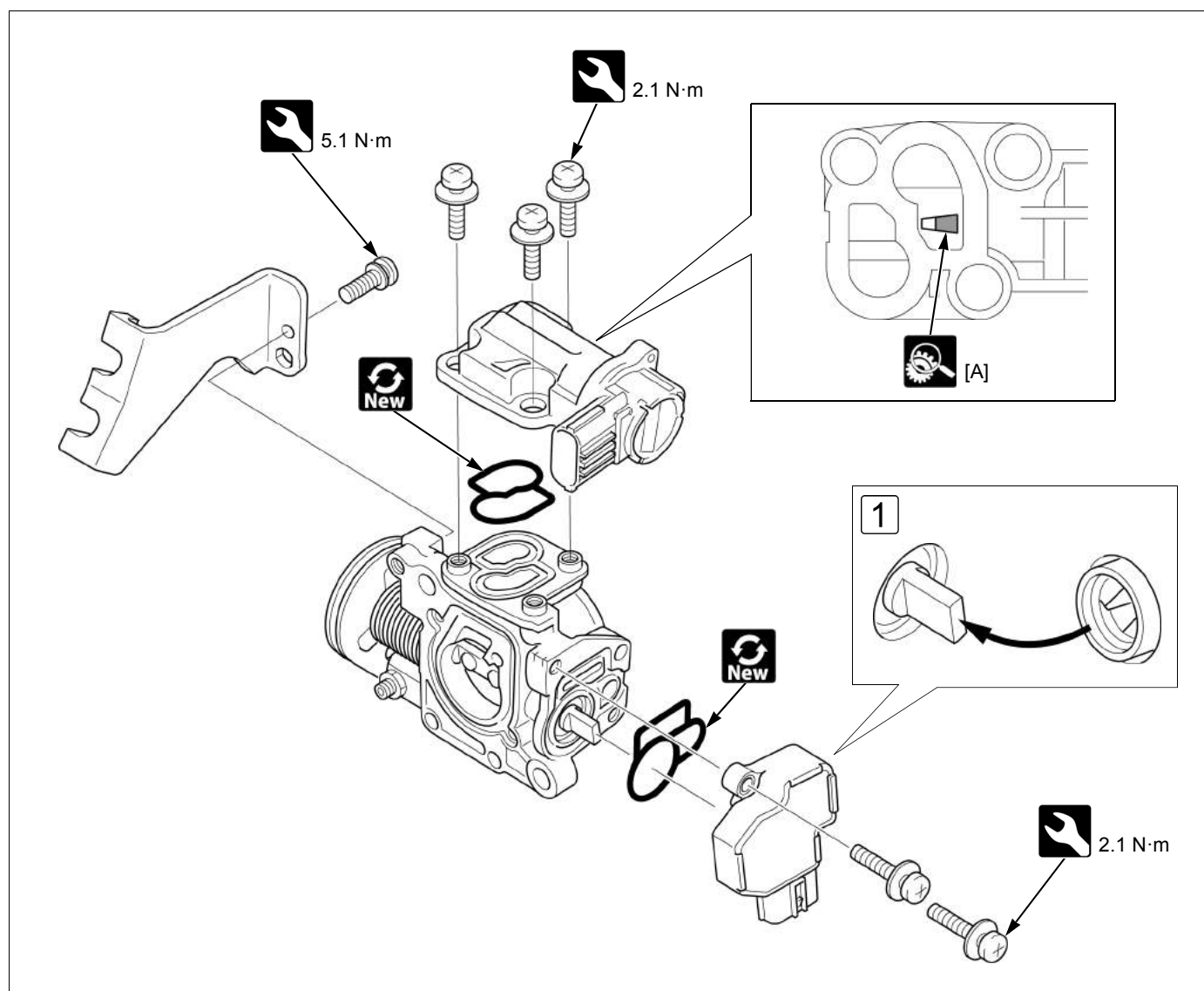
- Quick connect fitting (injector side) →2-2



- If the throttle body is changed, perform the TP sensor reset procedure. →2-10



- Throttle body cleaning and inspection



- The throttle body is factory pre-set. Do not disassemble in a way other than 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 shroud →3-6

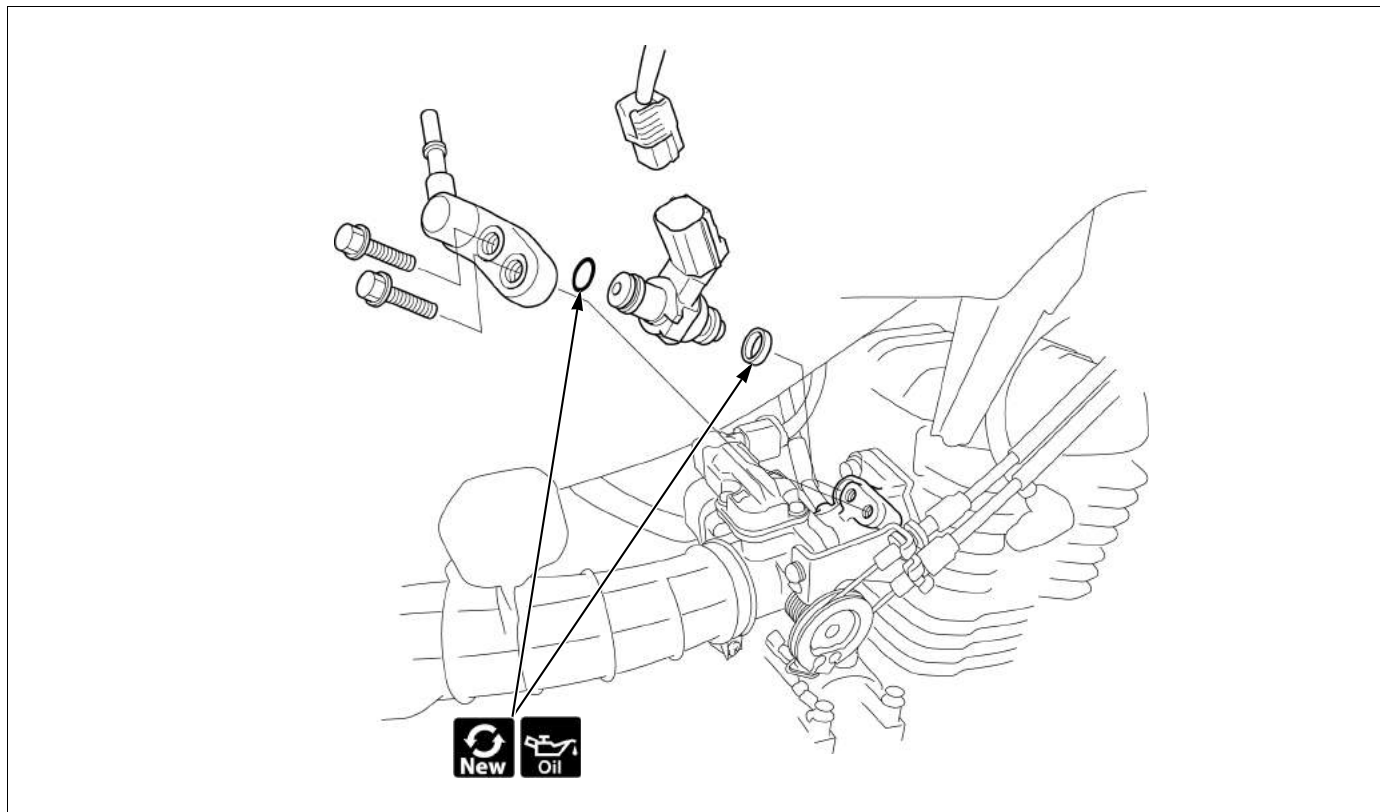


- Check the IACV for wear or damage.
- The IACV operation can be checked visually as follows:
 1. Connect the IACV 4P connector.
 2. Turn ignition switch ON, check the slide piece [A] operation.



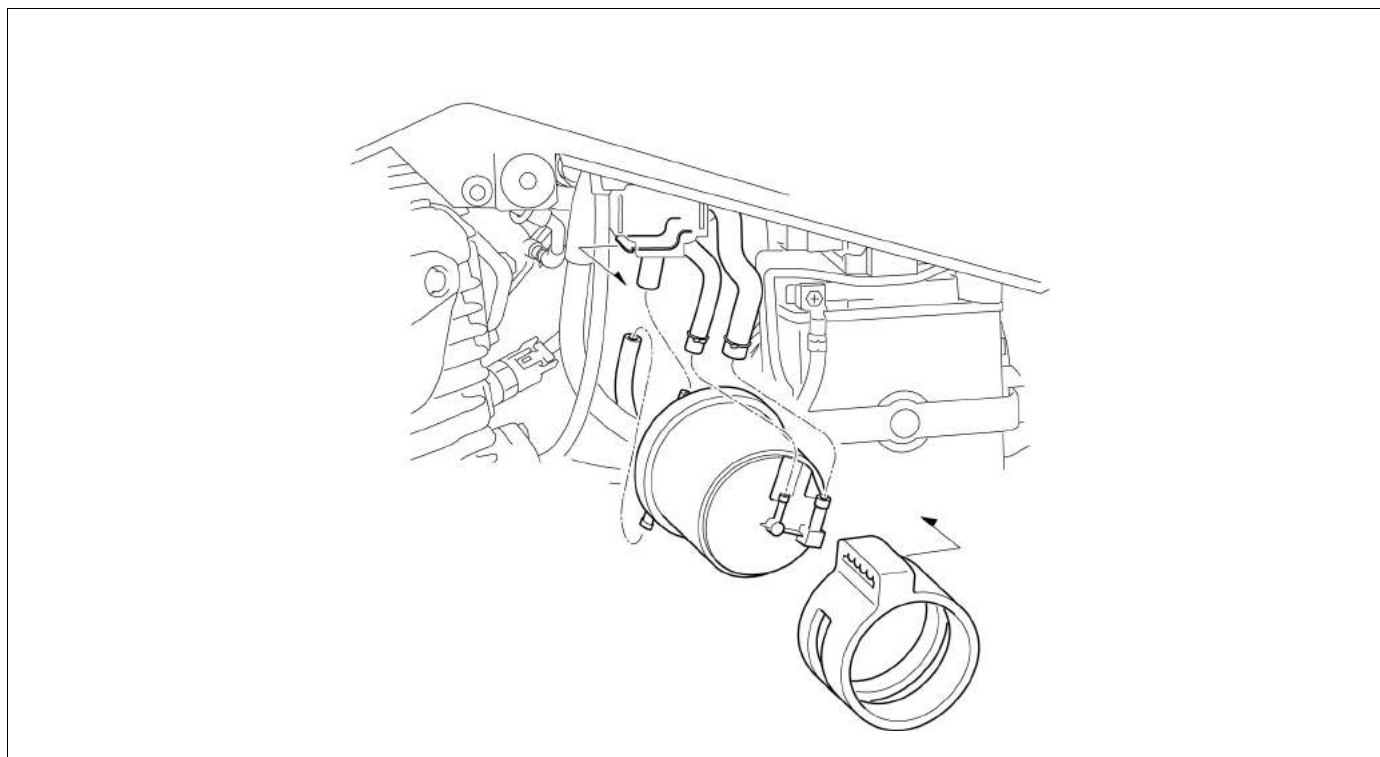


INJECTOR

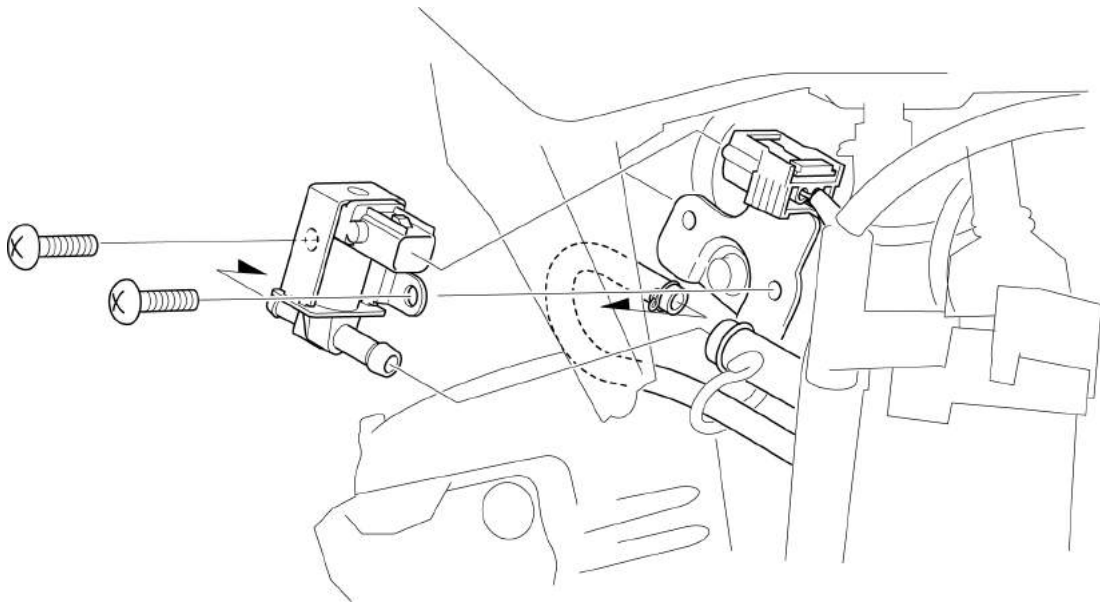


- Quick connect fitting (injector side) → 2-2

EVAP SYSTEM



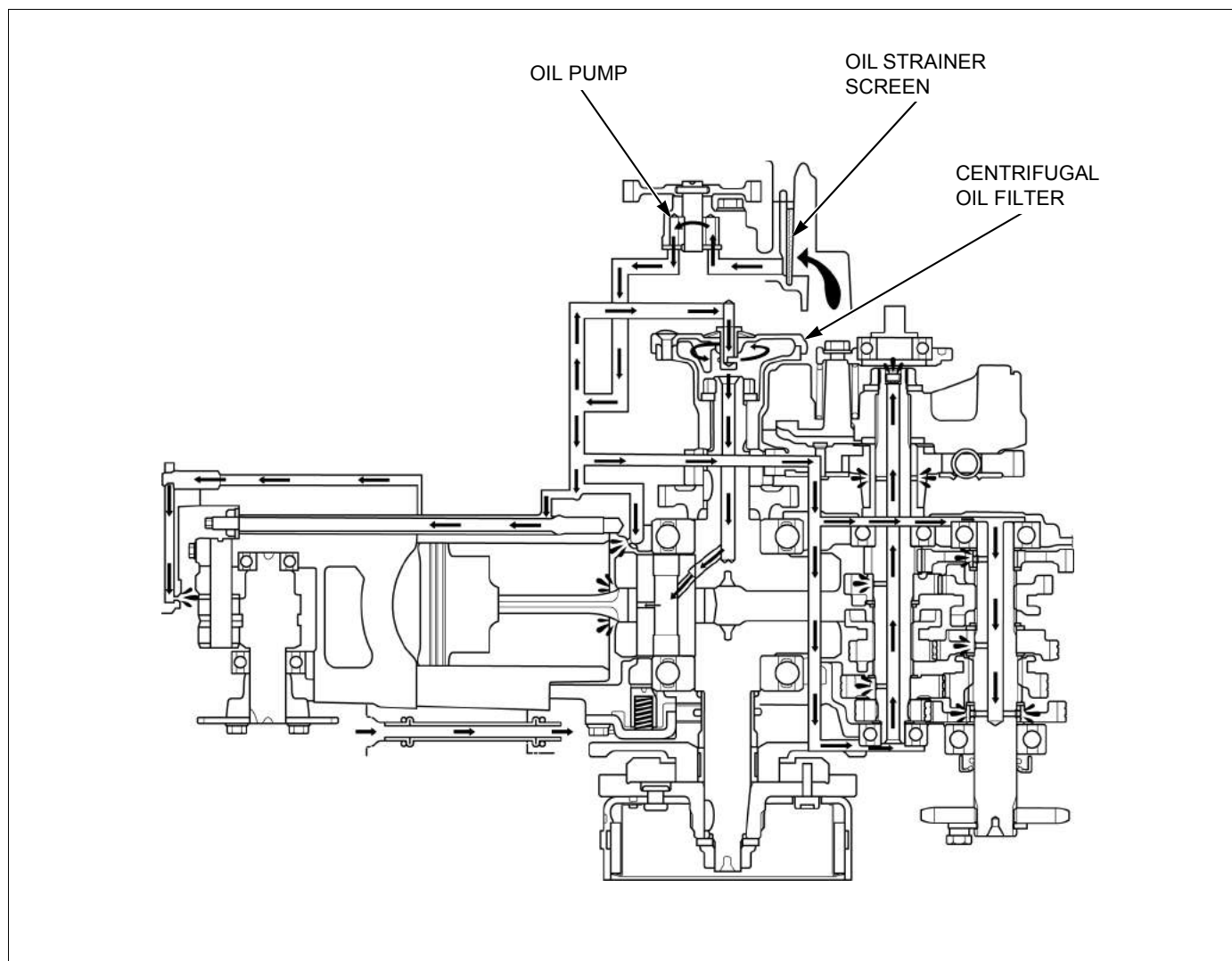
- Side cover → 3-4



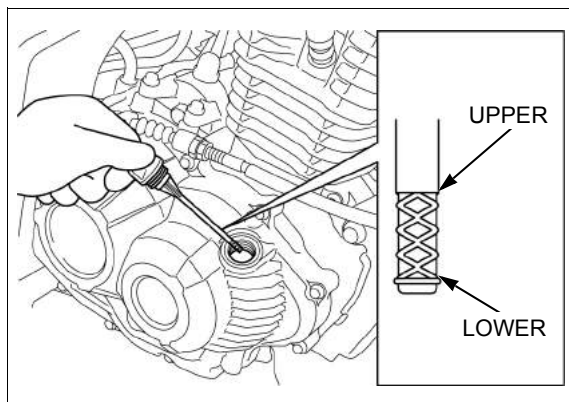
- Fuel tank shroud →3-6



LUBRICATION SYSTEM SYSTEM DIAGRAM



ENGINE OIL LEVEL CHECK

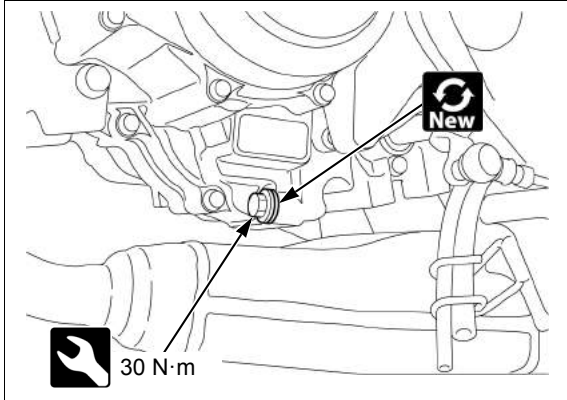


- Place the vehicle on the level ground with its centerstand.
- Let the engine idle for 3 – 5 minutes.
- Wait for 2 – 3 minutes.
- Hold the vehicle in an upright position.
- Clean and insert the oil filler cap/dipstick without screwing it in, remove it and check the oil level.
- If the oil level is below or near the lower level line on the dipstick, add the recommended oil to the upper level.
- Check that the O-ring on the oil filler cap is in good condition, and replace it if necessary.
- **RECOMMENDED ENGINE OIL:**
Honda “4-stroke motorcycle oil” or an equivalent motor oil.
API service classification: SG or higher
JASO T903 standard: MA
Viscosity: SAE 10W-30



FUEL & ENGINE

ENGINE OIL CHANGE



- Drain oil completely.

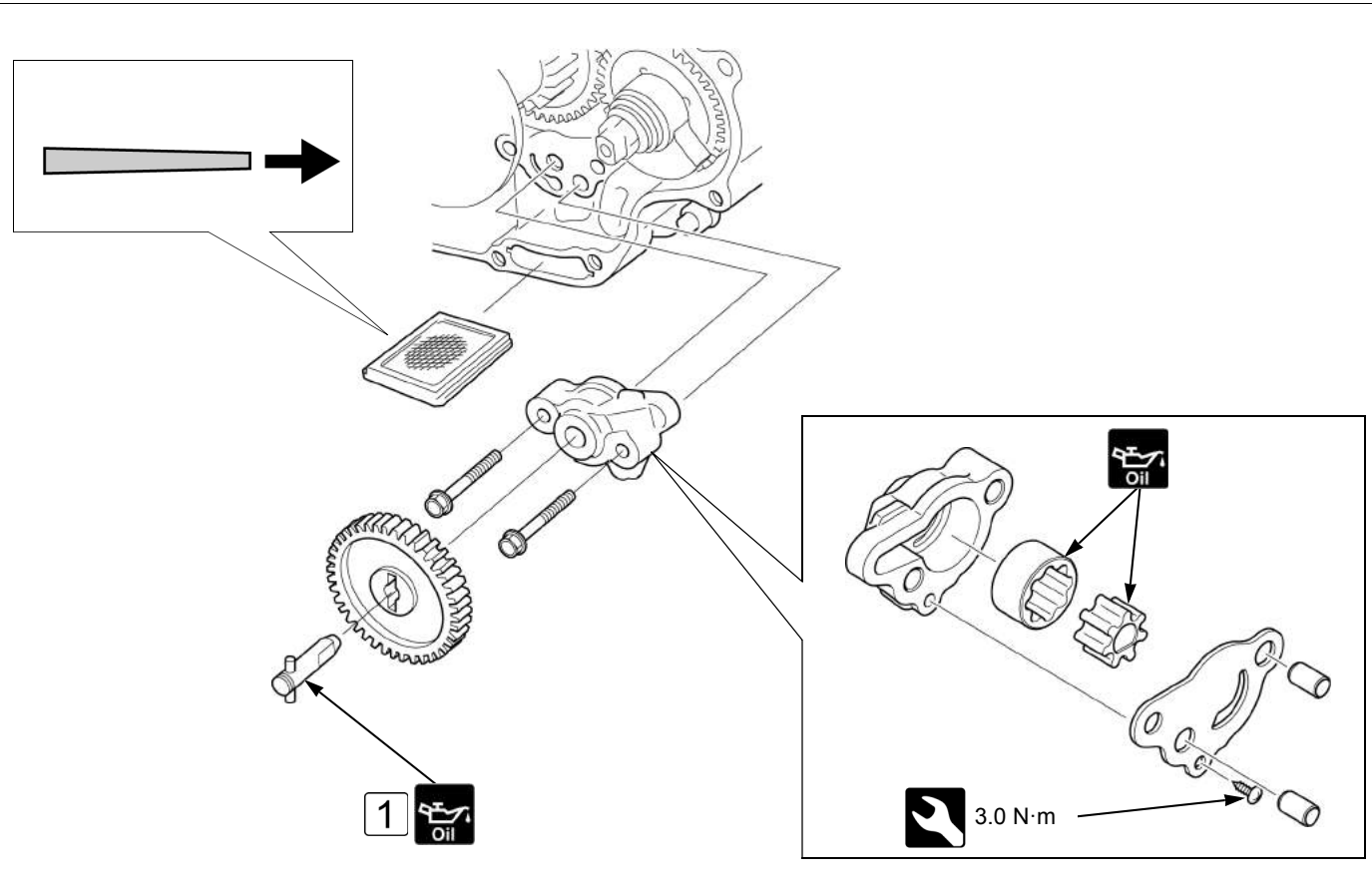


- Fill the crankcase with the recommended engine oil.



- **ENGINE OIL CAPACITY:**
1.0 liter after draining
1.2 liter after disassembly

ENGINE OIL STRAINER SCREEN/OIL PUMP



- Right crankcase cover → 2-22



- 1 Align with the cutouts of the oil pump drive shaft and inner rotor.



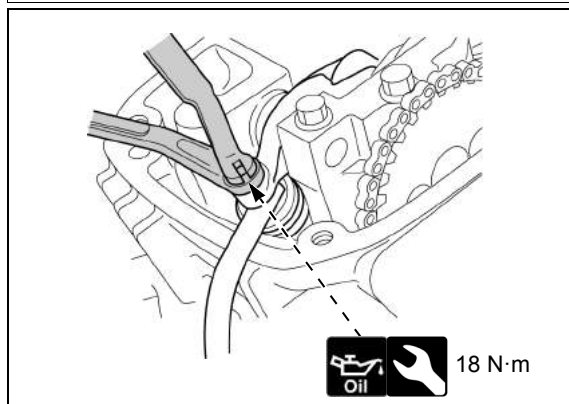
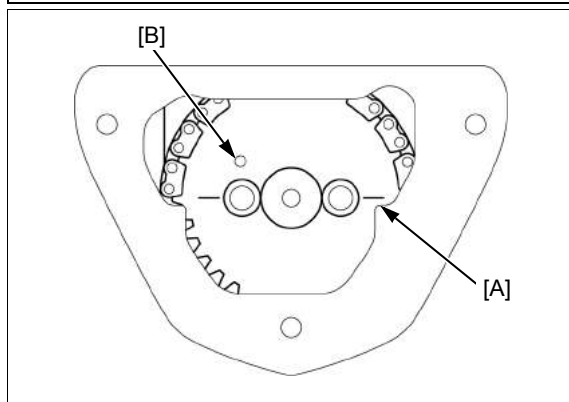
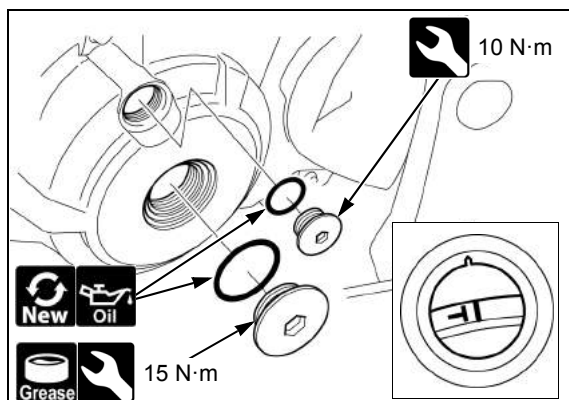
- Oil pump inspection



CYLINDER HEAD

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

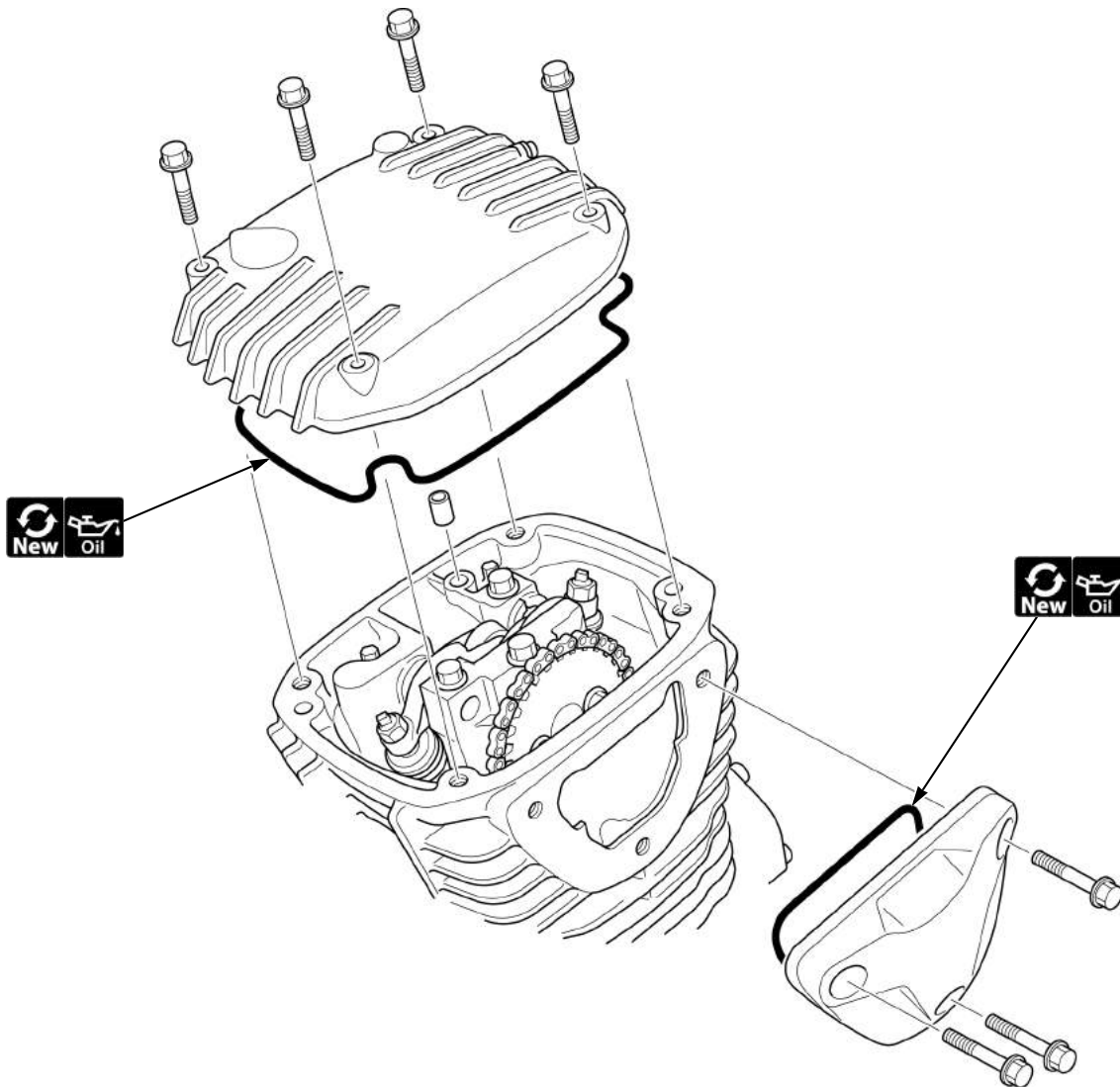
VALVE CLEARANCE



- Inspect while the engine is cold (below 35°C).
- After the valve clearance inspection, check the engine idle speed.
- Cylinder head cover → 2-16
- 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 sprocket are align with the cylinder head tabs [A].
- Make sure that the mark [B] on the cam sprocket is in the position shown (TDC).
If the cam sprocket mark is not in position shown, rotate the crankshaft one full turn.
- Valve clearance (Insert a feeler gauge between the valve adjusting screw and valve stem).
IN: 0.08 ± 0.02 mm, EX: 0.24 ± 0.02 mm
Locknut wrench, 10 x 12 mm: 07708-0030200
Tappet adjusting wrench, 3 x 4 mm: 07908-KE90000
- Loosen the lock nut and turn the adjusting screw until there is a slight drag on the feeler gauge.
- Hold the adjusting screw and tighten the lock nut.
- Recheck the valve clearance after tightening.



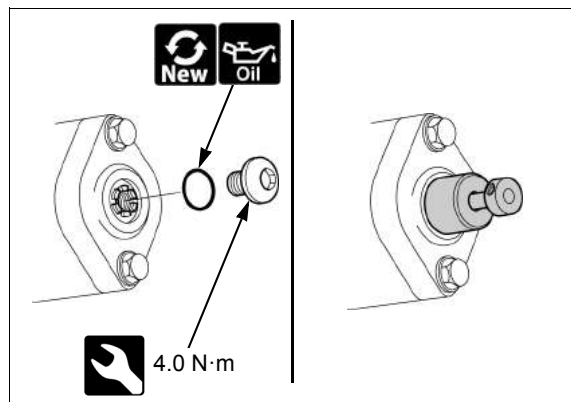
CYLINDER HEAD COVER



• Fuel tank shroud →3-6

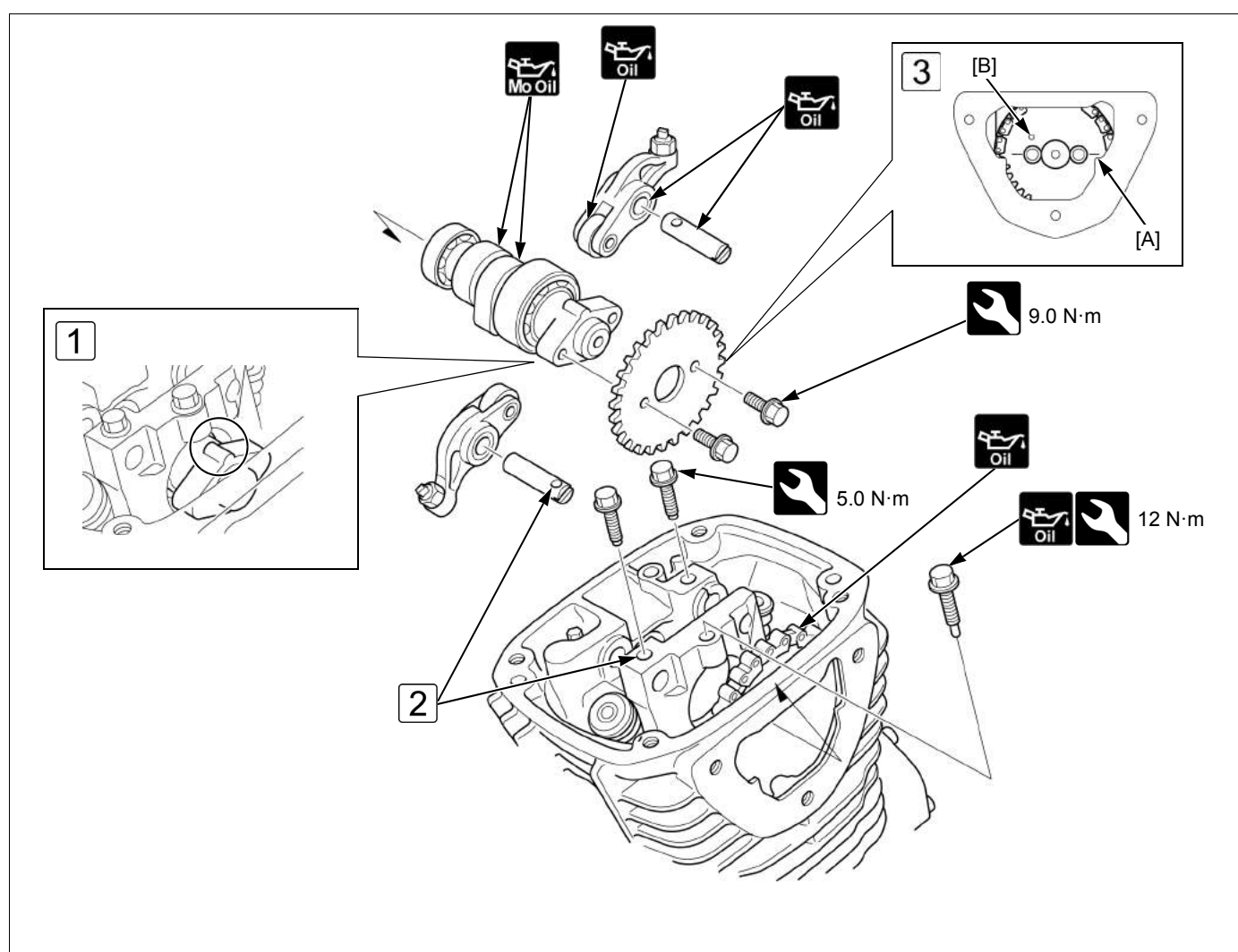


CAMSHAFT/ROCKER ARM



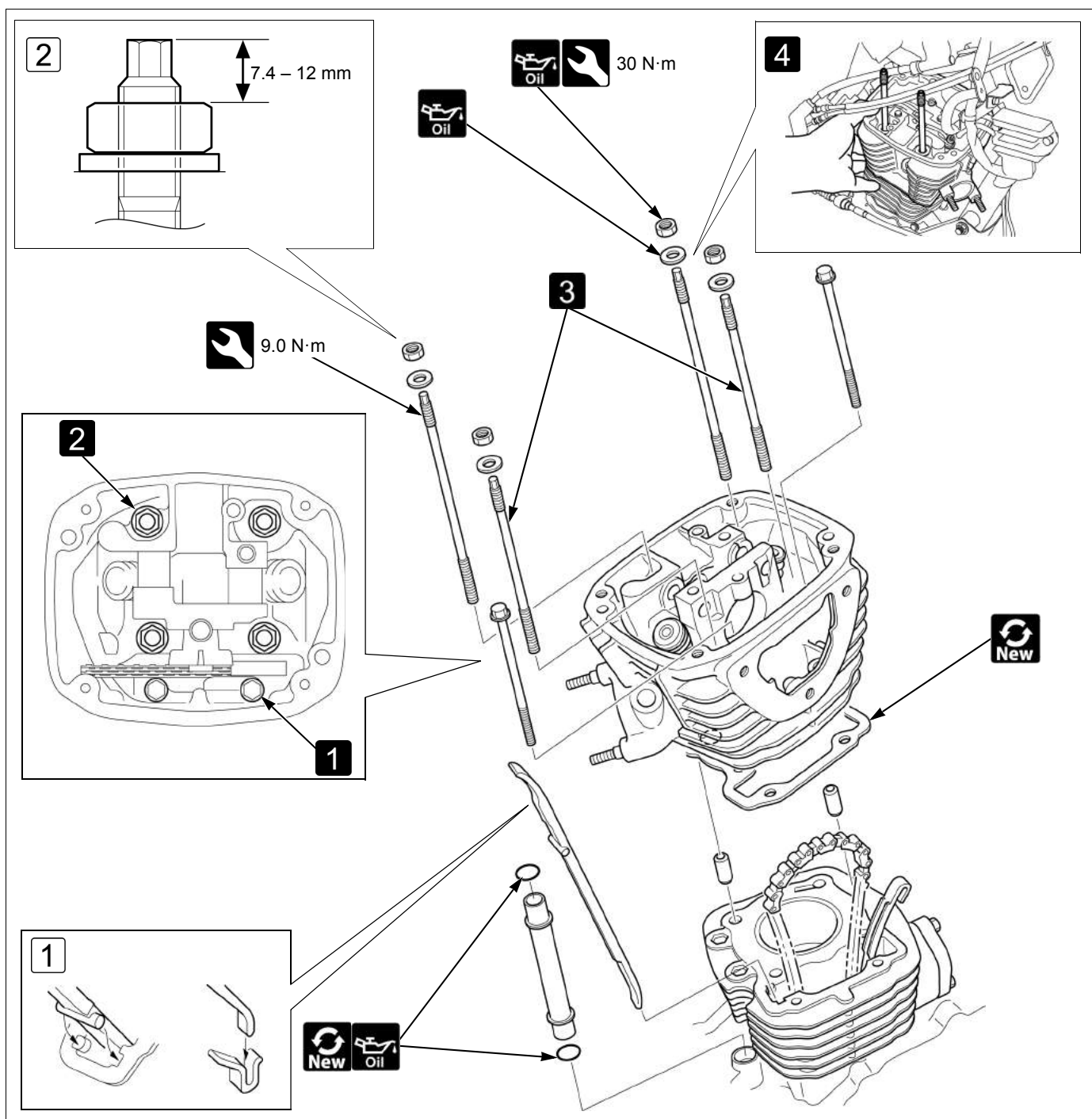
- Set the piston to the TDC on the compression stroke.
→ 2-15
- Install the special tool into the tensioner body and turn the tool clockwise until it stops. Hold the tensioner lifter by pushing the tool while aligning the tabs of the tool with the grooves of the tensioner lifter.

Tensioner stopper: 070MG-0010100



- 1 Install the camshaft with its flange tab facing up.
- 2 Insert the rocker arm shafts into the cylinder head in the position shown using a flat-tip screwdriver while aligning the bolt holes of the shaft with the bolt holes on the cylinder head.
- 3 The index lines on the cam sprocket are align with the cylinder head tabs [A]. Make sure that the mark [B] on the cam sprocket is in the position shown.
- Camshaft inspection



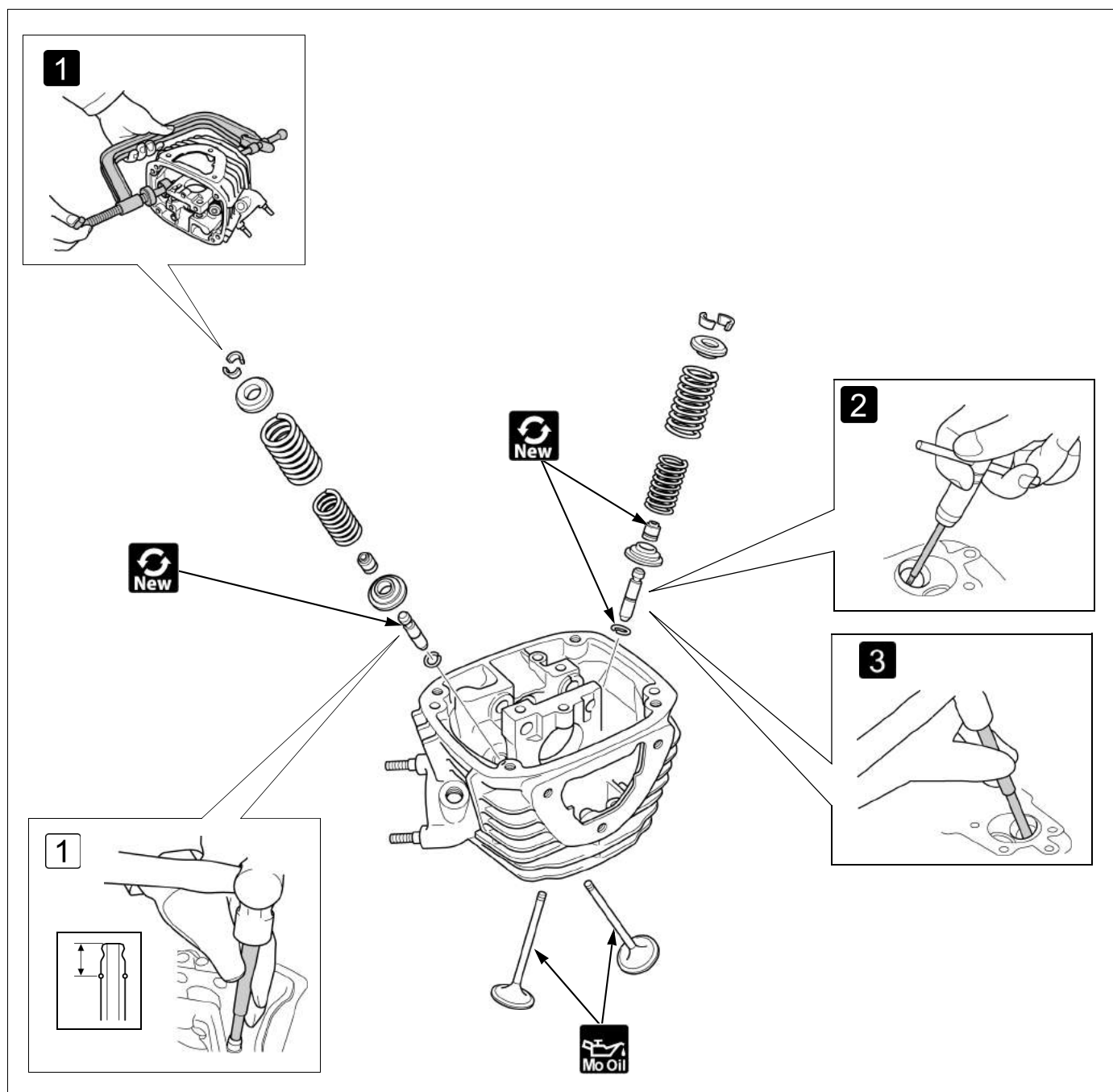


- Camshaft/rocker arm → 2-17
- Exhaust pipe/muffler → 3-15
- Intake pipe mounting bolts/insulator → 2-8
- Spark plug → 4-22
- EOT sensor → 4-19
- O₂ sensor → 4-20

- **1** Remove the cylinder head bolts.
- **2** Loosen the cylinder head nuts in a crisscross pattern in several steps.
- **3** Remove the left side stud bolts.
- **4** Loosen the right side stud bolts, then pull and remove the stud bolts together with the cylinder head.



- **1** Install the cam chain guide while aligning its pins with the grooves on the cylinder and its end with the groove on the left crankcase.
- **2** After tightening the cylinder head nuts, check that the length from the cylinder stud bolt head to the cylinder head nut upper surface is within specification.



- **1** Remove the valve cotter pins.

Valve spring compressor: 07757-0010000

- **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, 5.0 mm: 07984-MA60001

- **3** Support the cylinder head and drive the valve guides out of the cylinder head from the combustion chamber side.

Valve guide driver, 4.8 mm: 07942-MA60000



- **1** Drive new valve guides into the cylinder head to the specified height from the cylinder head.

Valve guide driver, 4.8 mm: 07942-MA60000

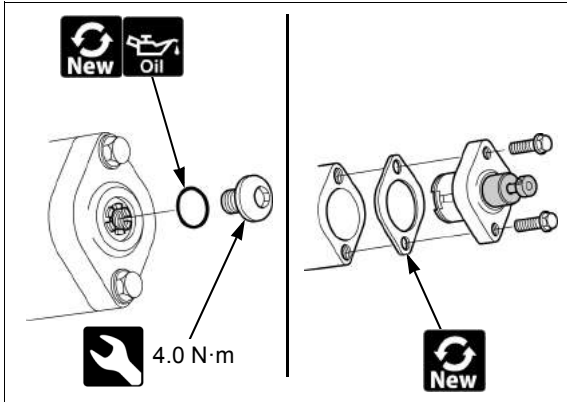
VALVE GUIDE PROJECTION: (Reference) 16.8 – 17.0 mm



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

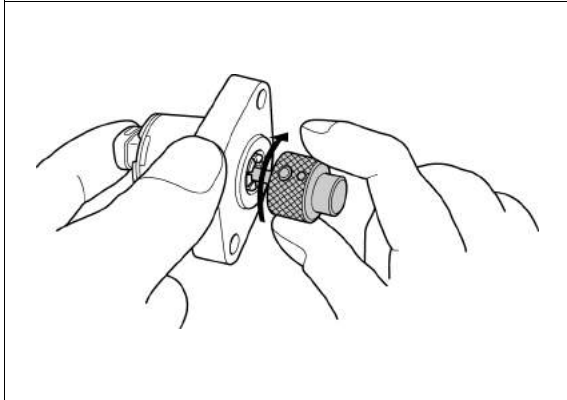


CAM CHAIN TENSIONER



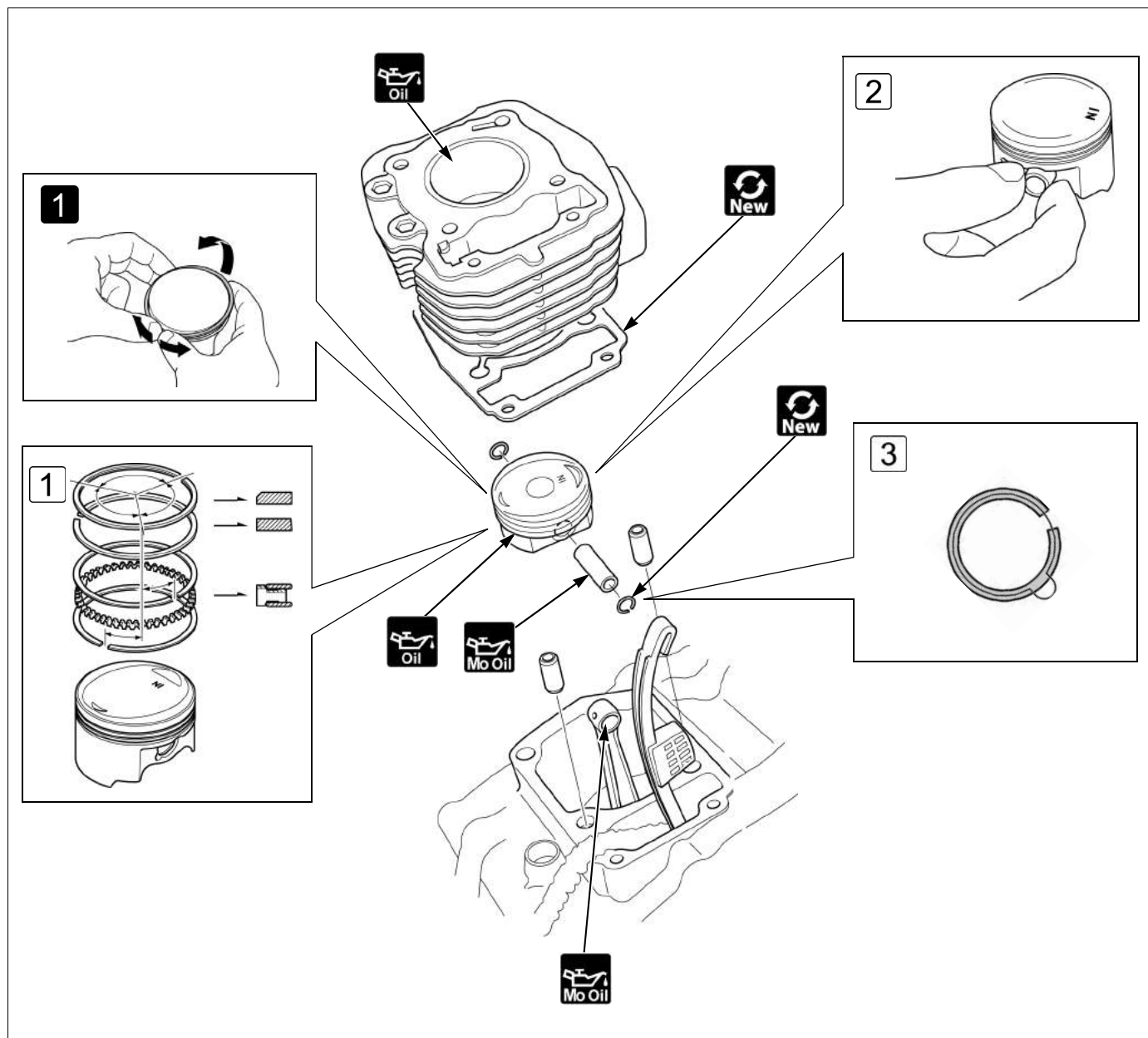
- Install the special tool into the tensioner body and turn the tool clockwise until it stops. Hold the tensioner lifter by pushing the tool while aligning the tabs of the tool with the grooves of the tensioner lifter.





Tensioner stopper: 070MG-0010100



- 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.

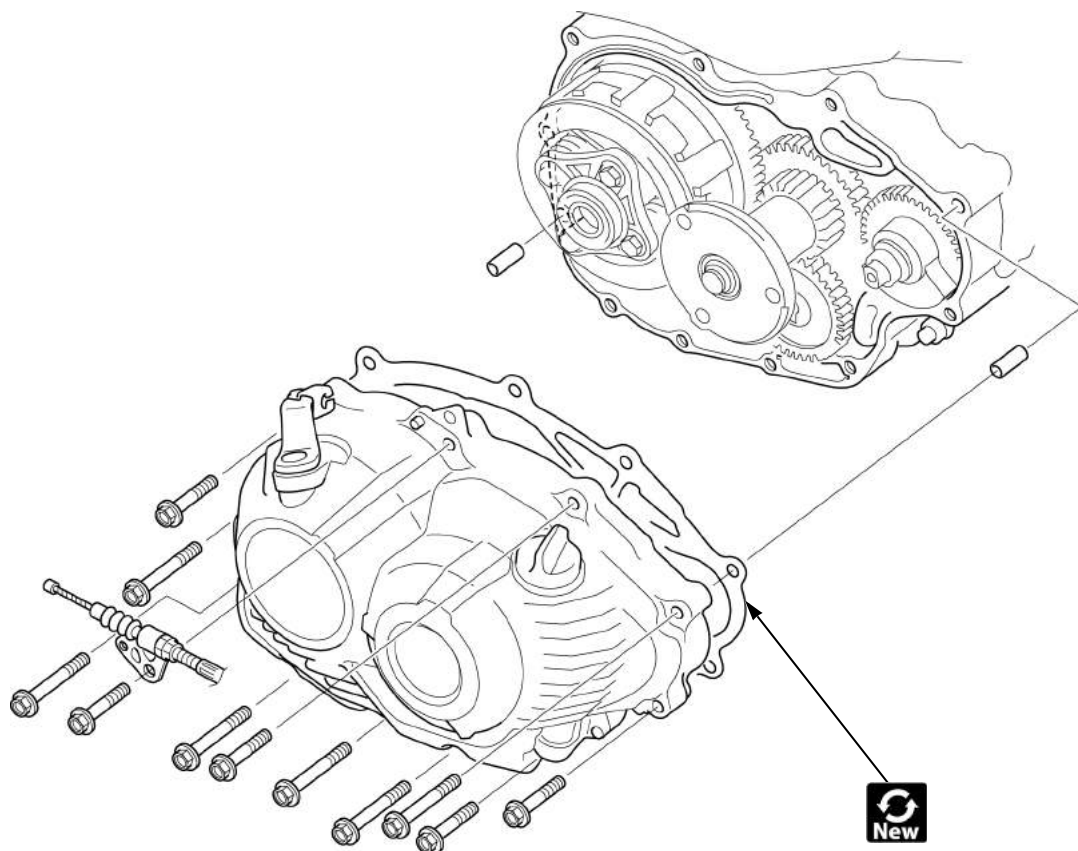
- This service can be serviced with the engine installed in the frame.



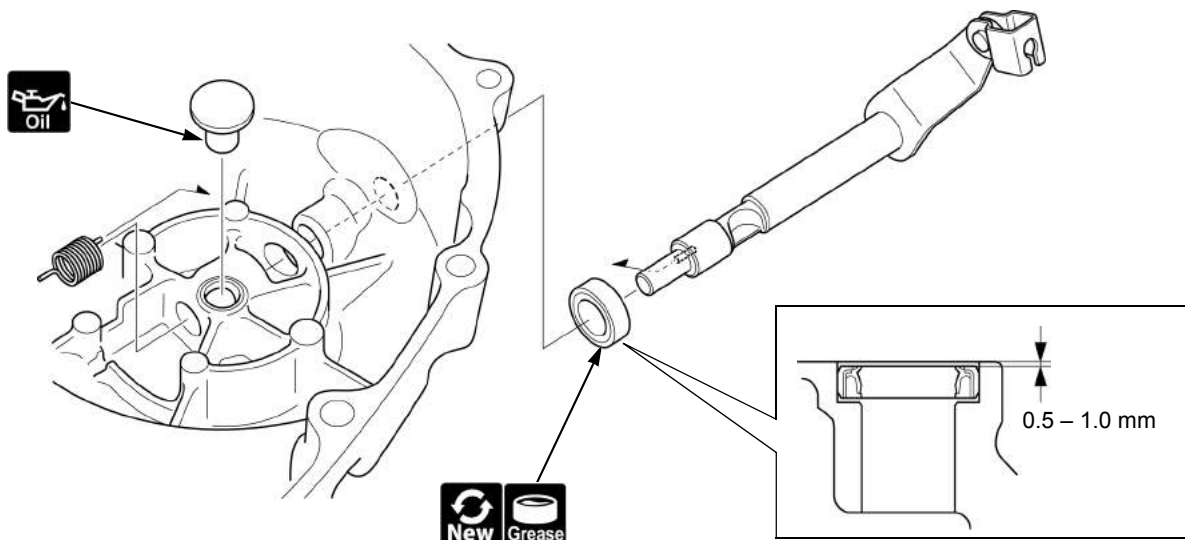
- Cylinder head → 2-15
- Cam chain tensioner → 2-20
-  **1** Spread each piston ring and remove it by lifting up at a point opposite the gap.
-  **1** Carefully install the piston rings into the piston ring grooves with the markings facing up.
 - Top ring: “1R” or “TOP-1” mark
 - Second ring: “RN” or “TOP-2” mark
- **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

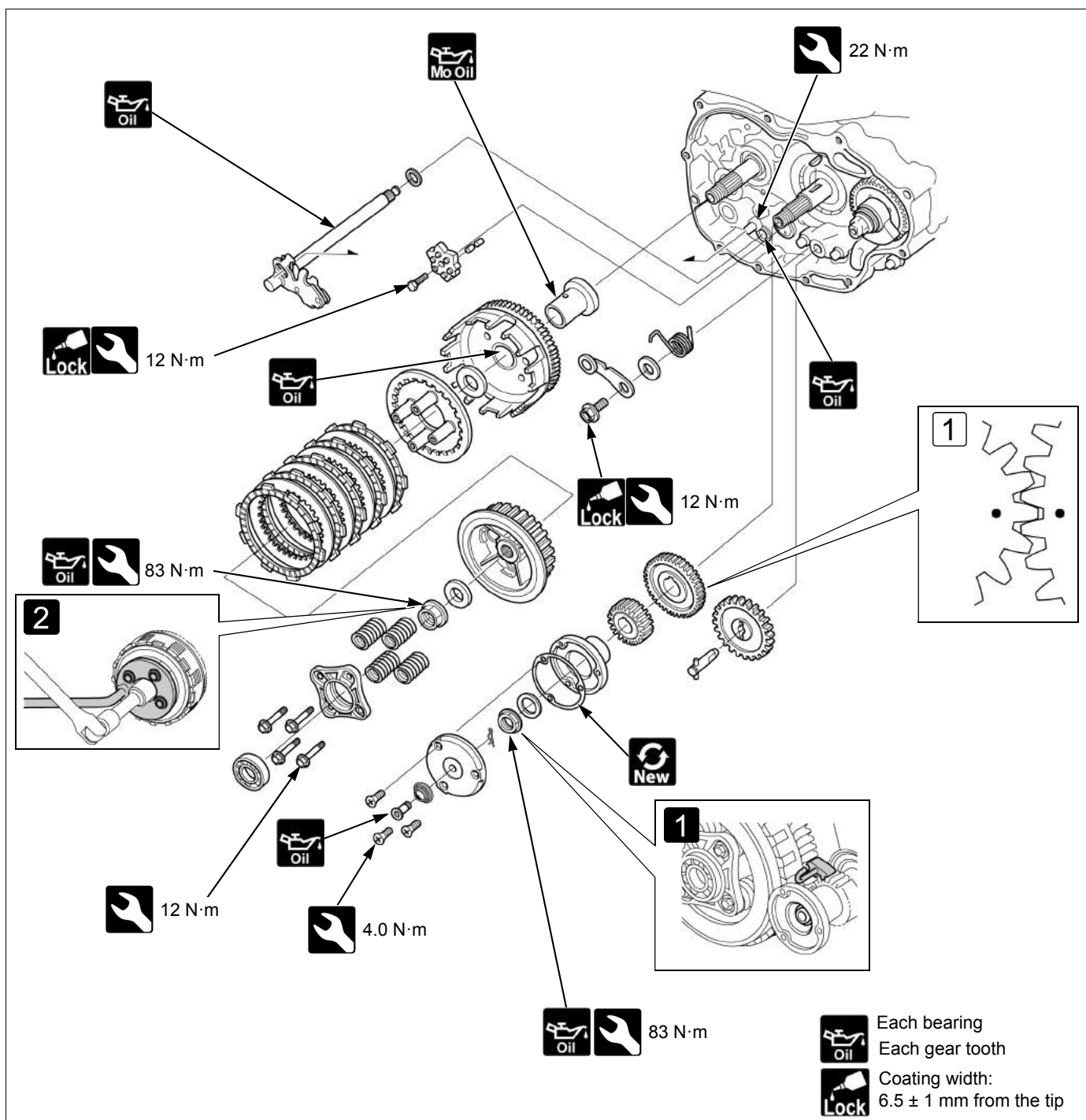


CLUTCH/GEARSHIFT LINKAGE



• Engine oil → 2-14





- Gearshift pedal → 3-13
- **1** Loosen the oil filter rotor lock nut.

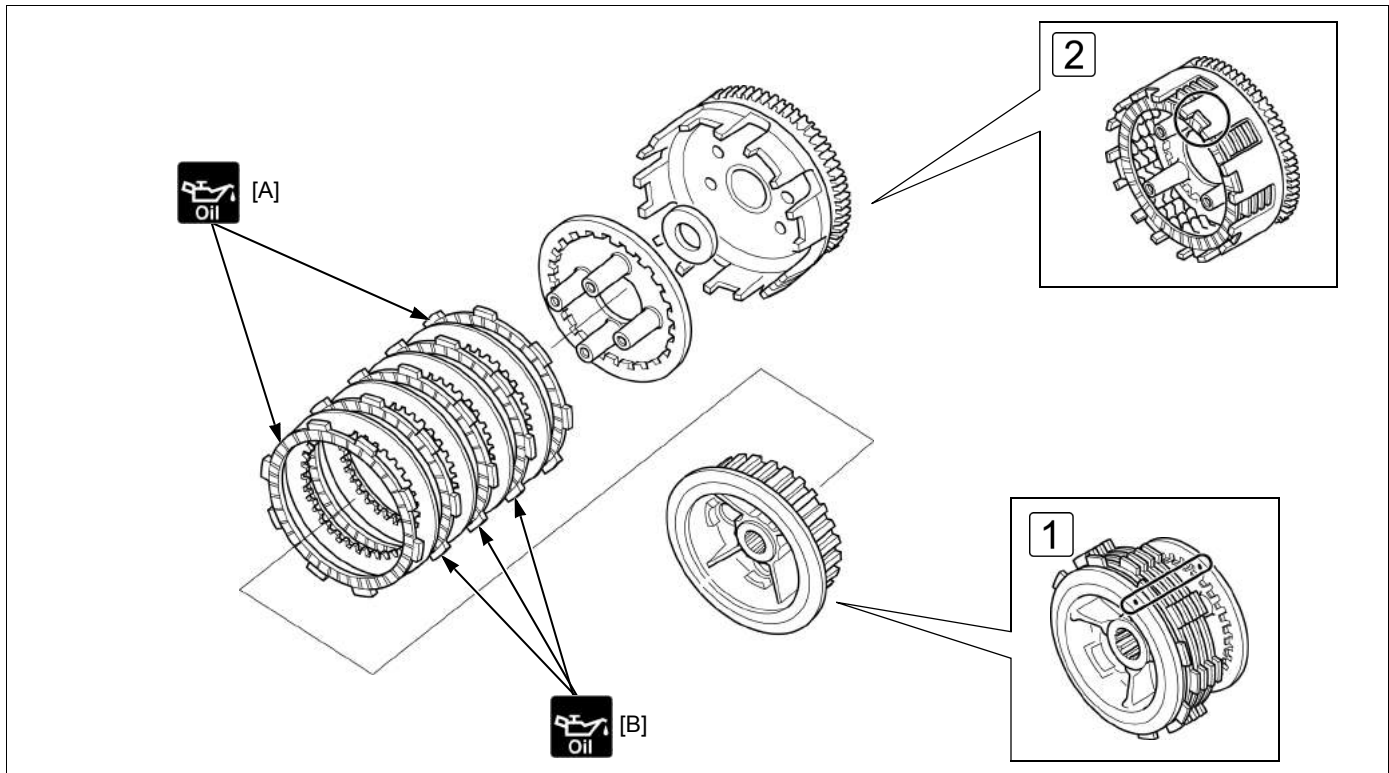
Gear holder: 07724-0010200

- **2** Loosen the clutch center lock nut.

Clutch center holder: 07GMB-KT70101



- **1** Align with the punch marks of the balancer driven gear and drive gear.



- Install the two types of clutch discs to each position.

[A] 22201-KRE-G01

[B] 22201-KTT-900

- **1** Assemble clutch discs, clutch plates and pressure plate onto clutch center, while aligning "O" marks of clutch center and pressure plate.
- **2** Install the tabs of the clutch disc (outside) into the shallow slots in the clutch outer.
- Clutch inspection

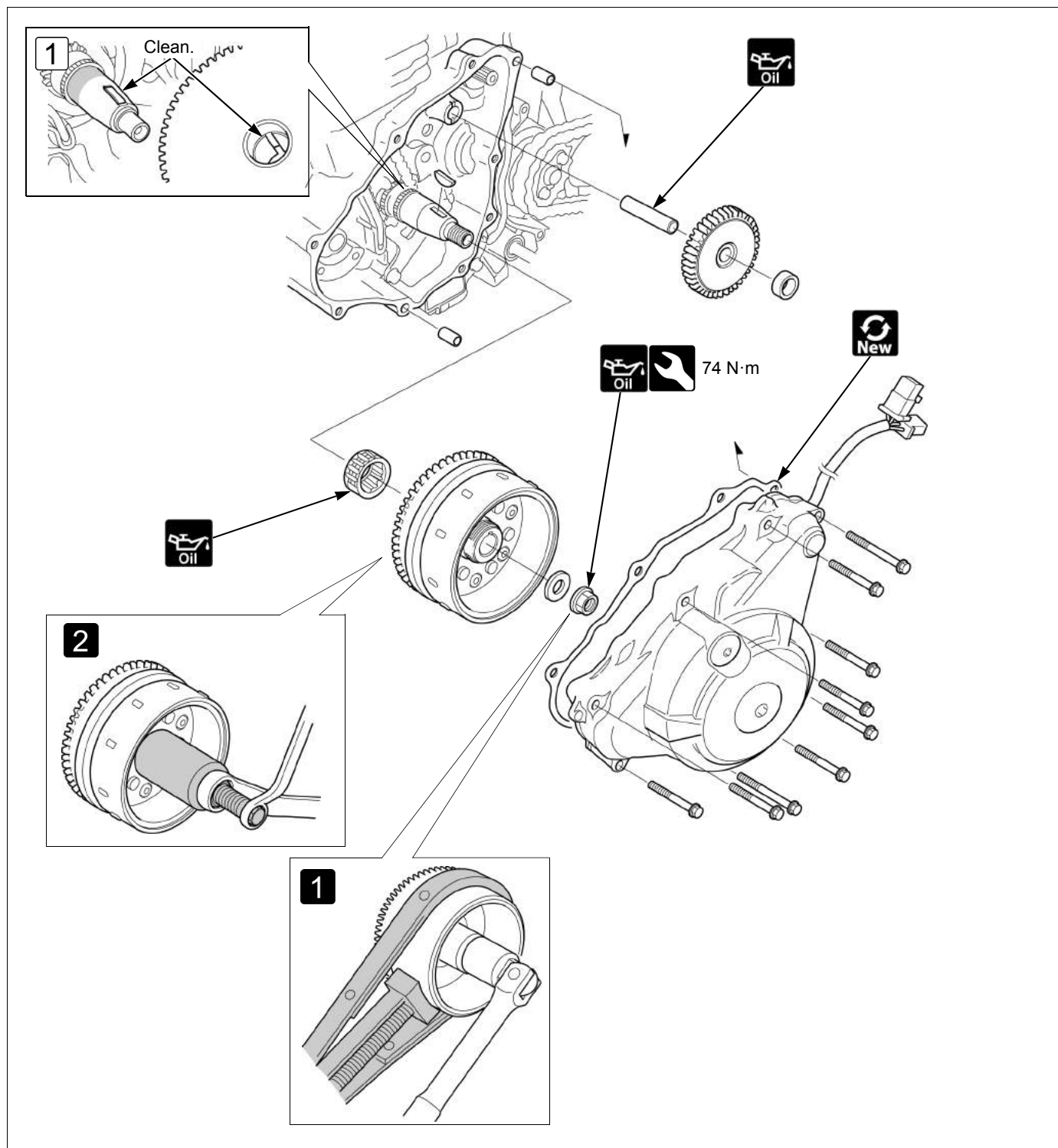


Basic



ALTERNATOR/STARTER CLUTCH

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



- Drive sprocket cover → 3-9

- **1** Hold the flywheel with the special tool for the nut removal.

Flywheel holder: 07725-0040001

- **2** Flywheel

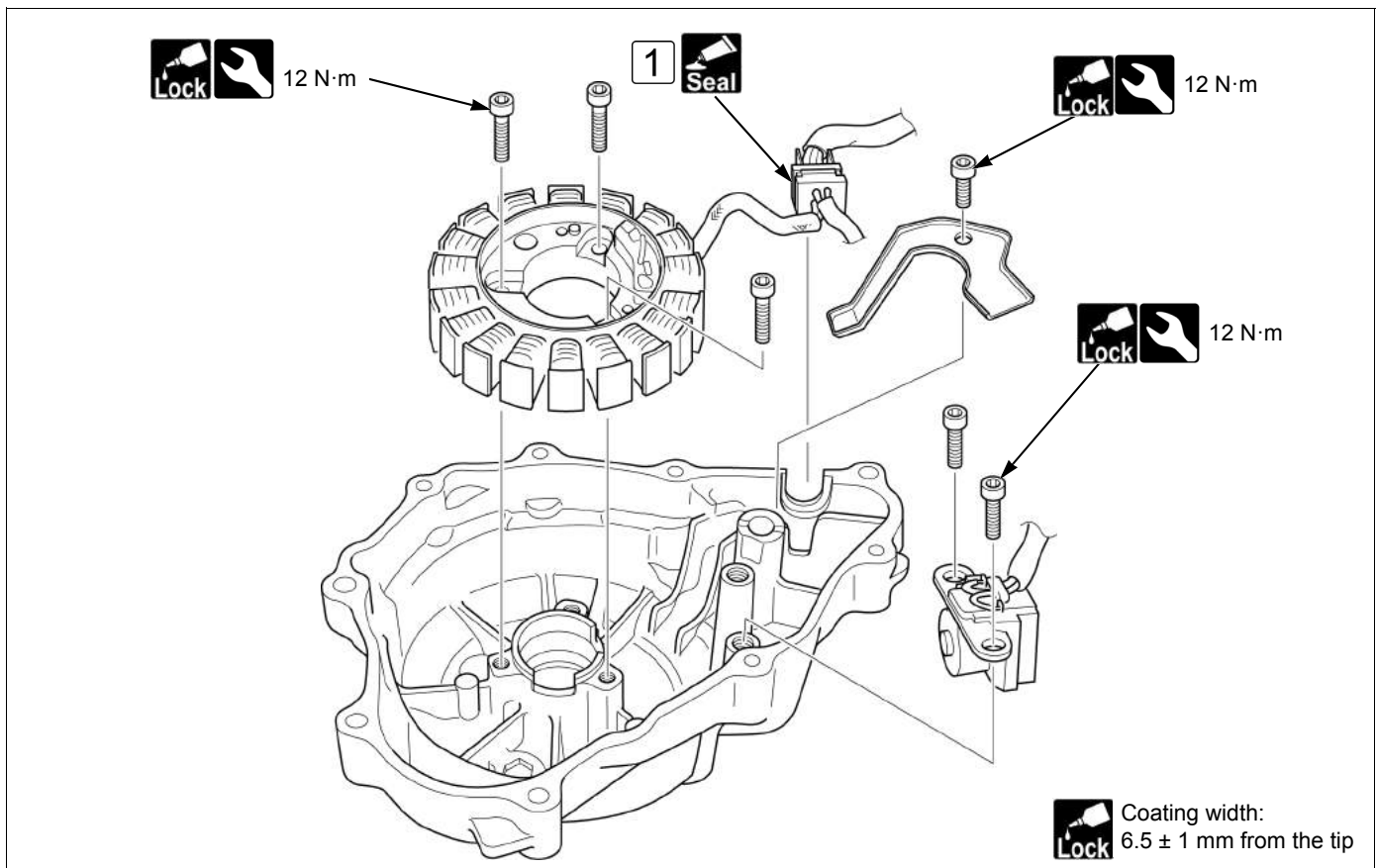
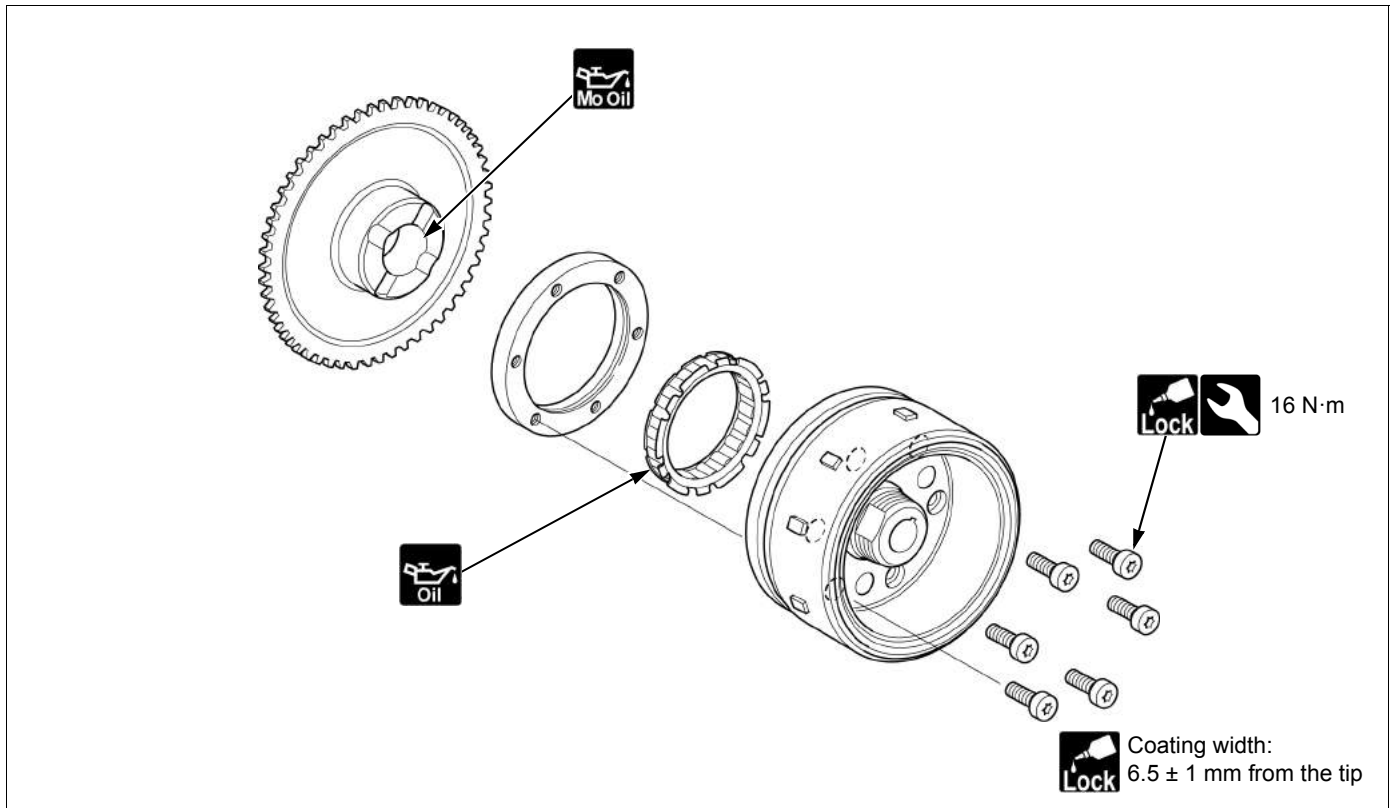
Flywheel puller: 07933-KM10001



- **1** Clean any oil and grease from crankshaft and flywheel contact area. Install the flywheel onto the crankshaft by aligning the key way on the flywheel with the woodruff key.



FUEL & ENGINE



- 1 Apply sealant (TB 1141G, 1215, 1207B, or equivalent) to the sealing surface.

1 64 N·m

2 64 N·m

3 55 N·m

Coating width:
6.5 ± 1 mm from the tip

Lock Each bearing

Mo Oil 1 – 2 cm³

1 10 N·m

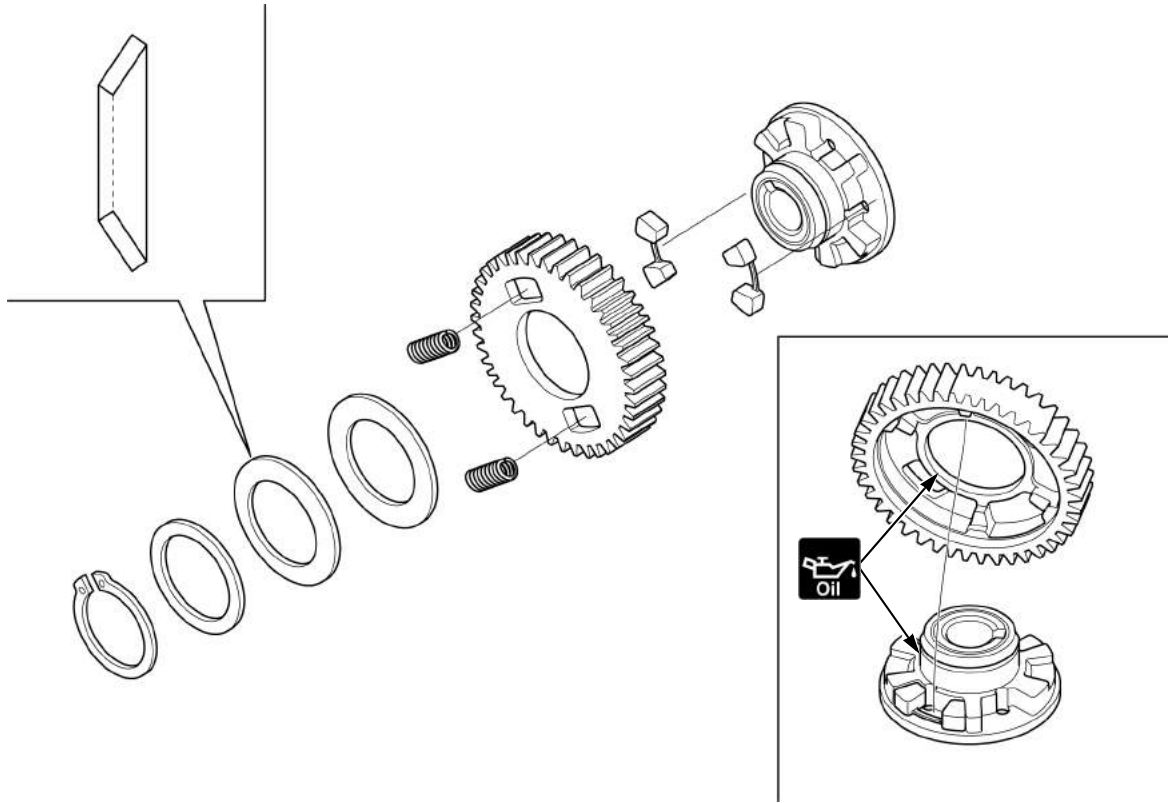
2 [A] 10 N·m

[B]



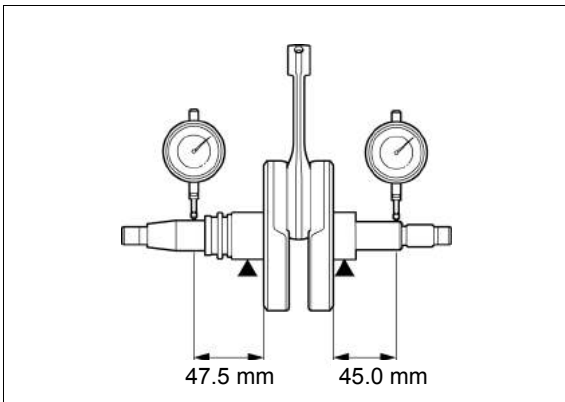
- Engine unit →2-31
 - Cylinder/piston →2-21
 - Clutch/gearshift linkage →2-22
 - Alternator/starter clutch →2-25
 - Oil pump →2-14
 - Neutral switch →4-26
 - VS sensor →4-36
 - Starter motor →4-25
- Remove the crankcase bolts in a crisscross pattern in 2 – 3 steps.
 - Place the crankcase with the left crankcase facing down and separate.
 - **1** Temporarily install the balancer drive gear and loosen the right side of the balancer driven gear lock nut.
Gear holder: 07724-0010200
 - **2** Install the gear holder [A] and loosen the left side of the balancer nut [B].
Gear holder: 07724-0010200
 - **3** Align with the cut-outs of the crankshaft and balancer shaft.
 - **1** Install the push plug by aligning its flat surface with the crankshaft bearing outer race.
 - **2** Temporarily install the balancer drive gear and align with the punch marks of the balancer driven gear and drive gear.
 - **3** Apply sealant (TB1215, 1207B, or equivalent) to the left crankcase mating surface.
 - Crankshaft inspection
 - Connecting rod inspection





- Balancer inspection

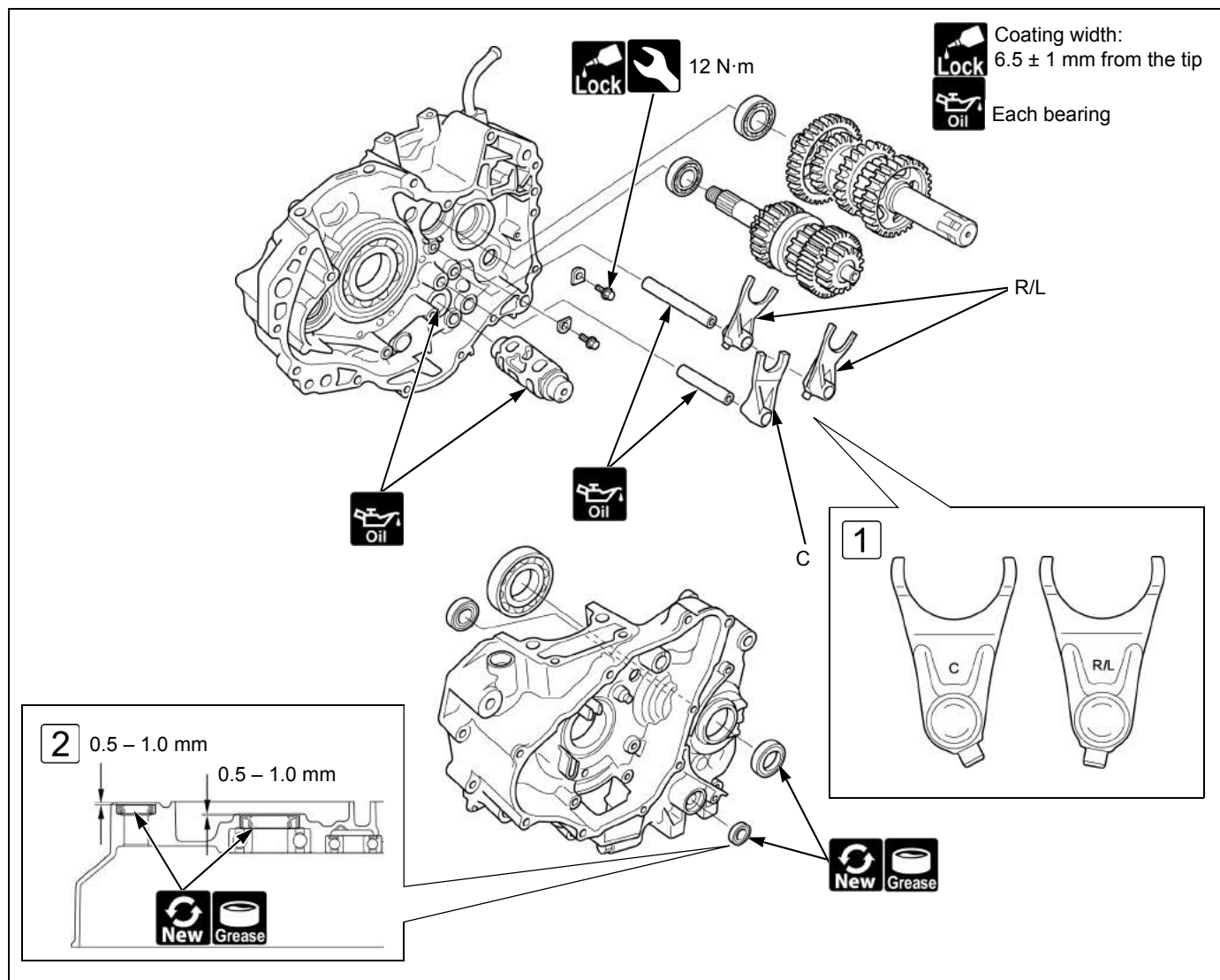
CRANKSHAFT RUNOUT INSPECTION



- Set the crankshaft on V-blocks and measure the runout using a dial indicator.
Limit: 0.03 mm



TRANSMISSION



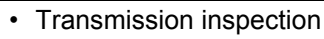
- Separate the crankcase → 2-27
- **1** Each shift fork has an identification mark.
R/L: right and left
C: center
- **2** Install the oil seal to the left crankcase so that the depth as shown.



This diagram illustrates the exploded view of a transmission assembly, highlighting the application of Mo Oil. The components shown include the input shaft, intermediate shaft, and output shaft, each with their respective gears. Arrows point to the following areas for oil application:

- Each gear tooth:** Indicated by an arrow pointing to the input gear.
- Oil:** Indicated by an arrow pointing to the input gear.
- Mo Oil:** Indicated by an arrow pointing to the output gear.

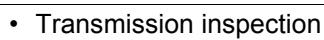
A circular inset provides a magnified view of the oil application on the gear teeth, showing a thick layer of oil being applied to the teeth of the output gear.



This diagram illustrates the exploded view of a transmission assembly, highlighting the application of Mo Oil to specific parts. The components shown include a main shaft, several gears of different sizes, and various bearings. Arrows point from Mo Oil application points to the following areas:

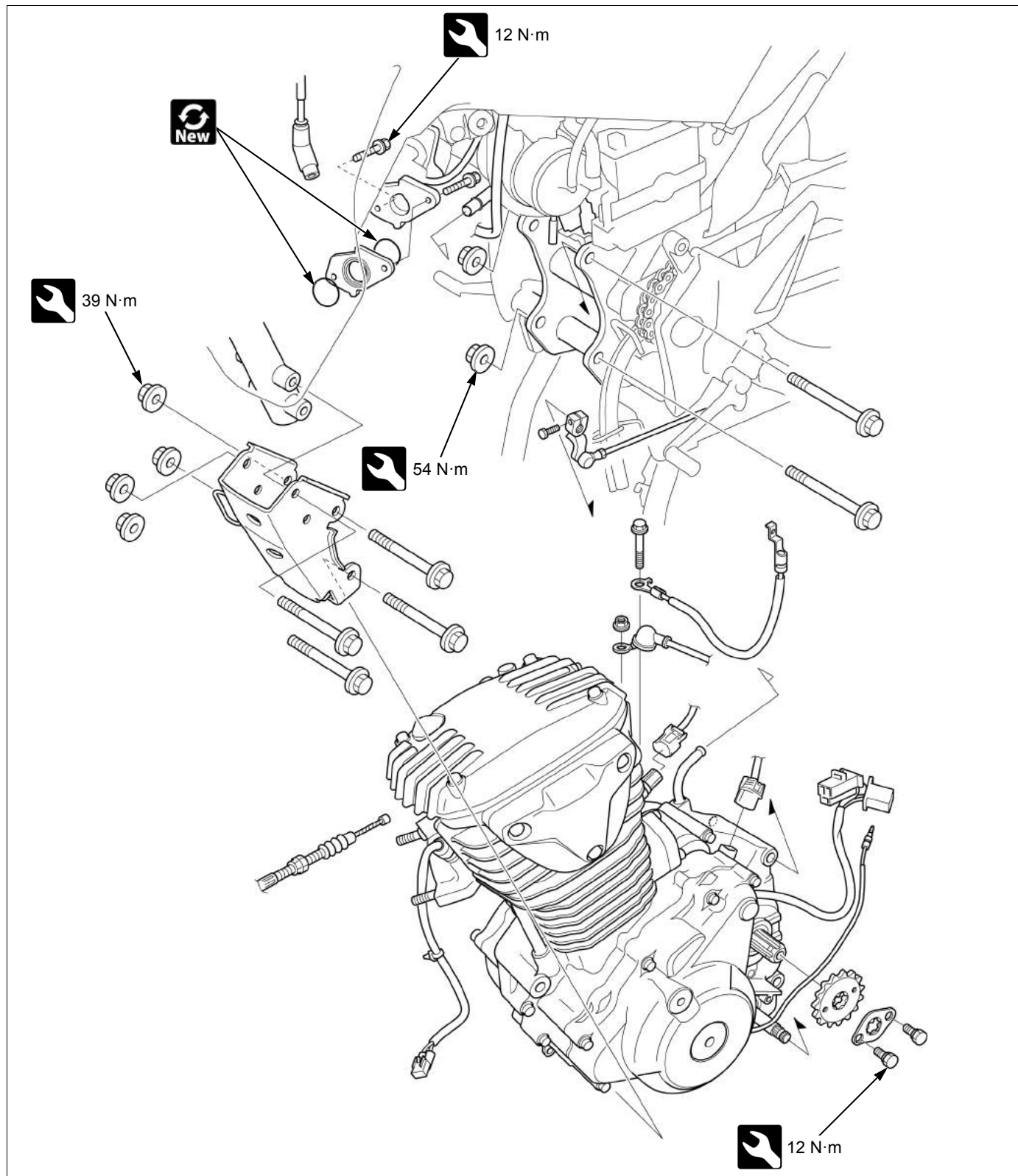
- Each gear tooth (indicated by a legend at the bottom left).
- The input shaft.
- The output shaft.
- The intermediate shaft.
- The main shaft.
- The bearings.

A circular inset on the right side of the diagram provides a magnified view of the internal components, showing the application of Mo Oil to the internal surfaces of the housing.





ENGINE UNIT



- Exhaust pipe/muffler → 3-15
- Drive sprocket cover → 3-9
- Side cover → 3-4

MEMO

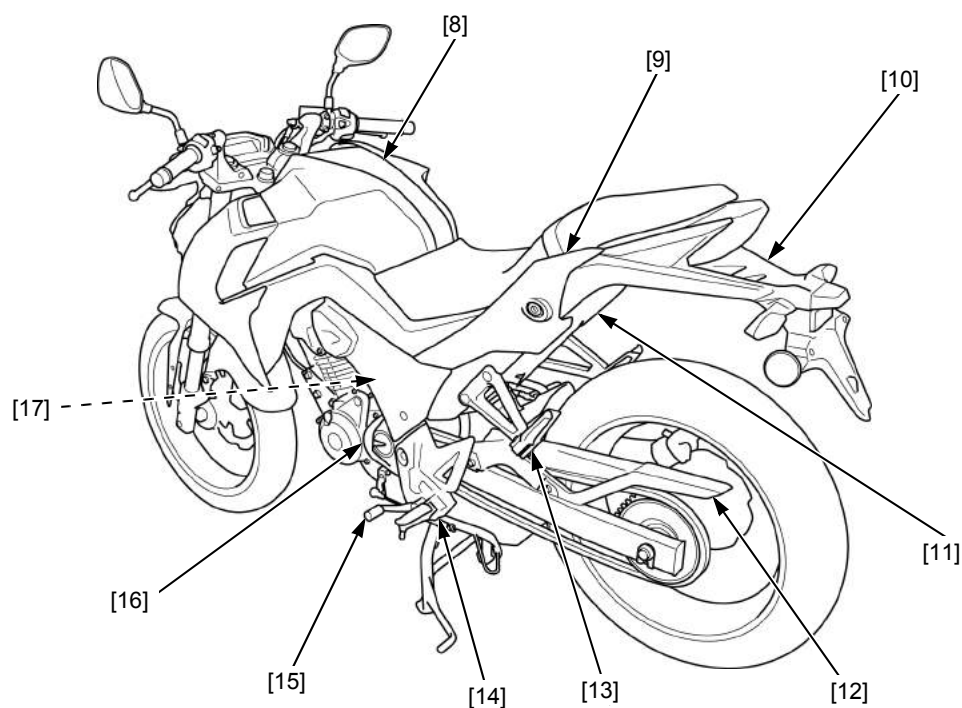
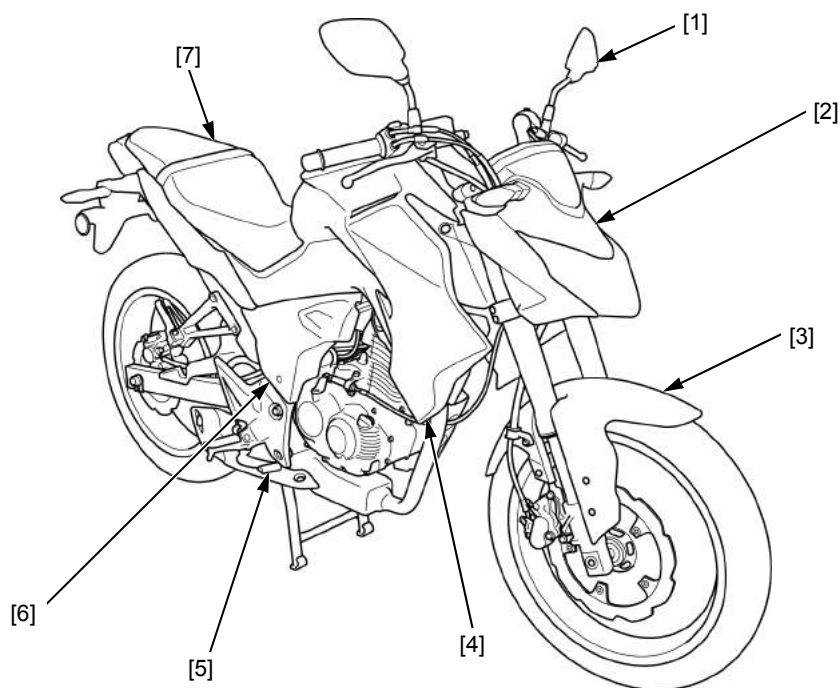
3. FRAME & CHASSIS

BODY PANELS	3-2	HANDLEBAR	3-20
CENTERSTAND	3-14	STEERING STEM	3-21
SIDESTAND	3-14	REAR WHEEL	3-23
EXHAUST PIPE/MUFFLER.....	3-15	REAR SUSPENSION	3-25
FRONT WHEEL	3-16	FRONT BRAKE.....	3-26
FORK	3-18	REAR BRAKE	3-29





BODY PANELS

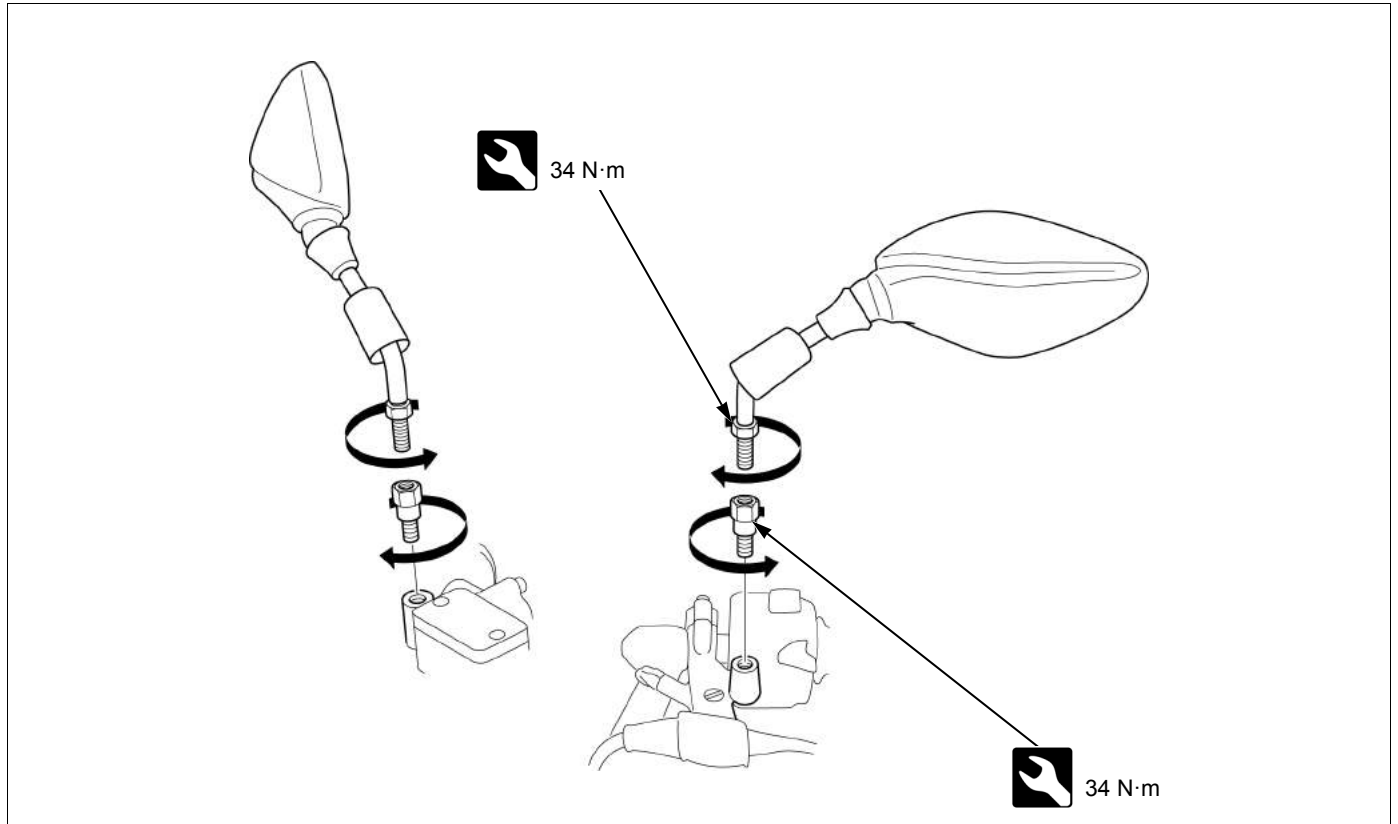


- [1] Rearview mirror → 3-3
- [2] Front visor → 3-7
- [3] Front fender → 3-8
- [4] Fuel tank shroud → 3-6
- [5] Brake pedal → 3-13
- [6] Side cover → 3-4
- [7] Seat → 3-3
- [8] Fuel tank center cover → 3-7
- [9] Rear cowl → 3-5

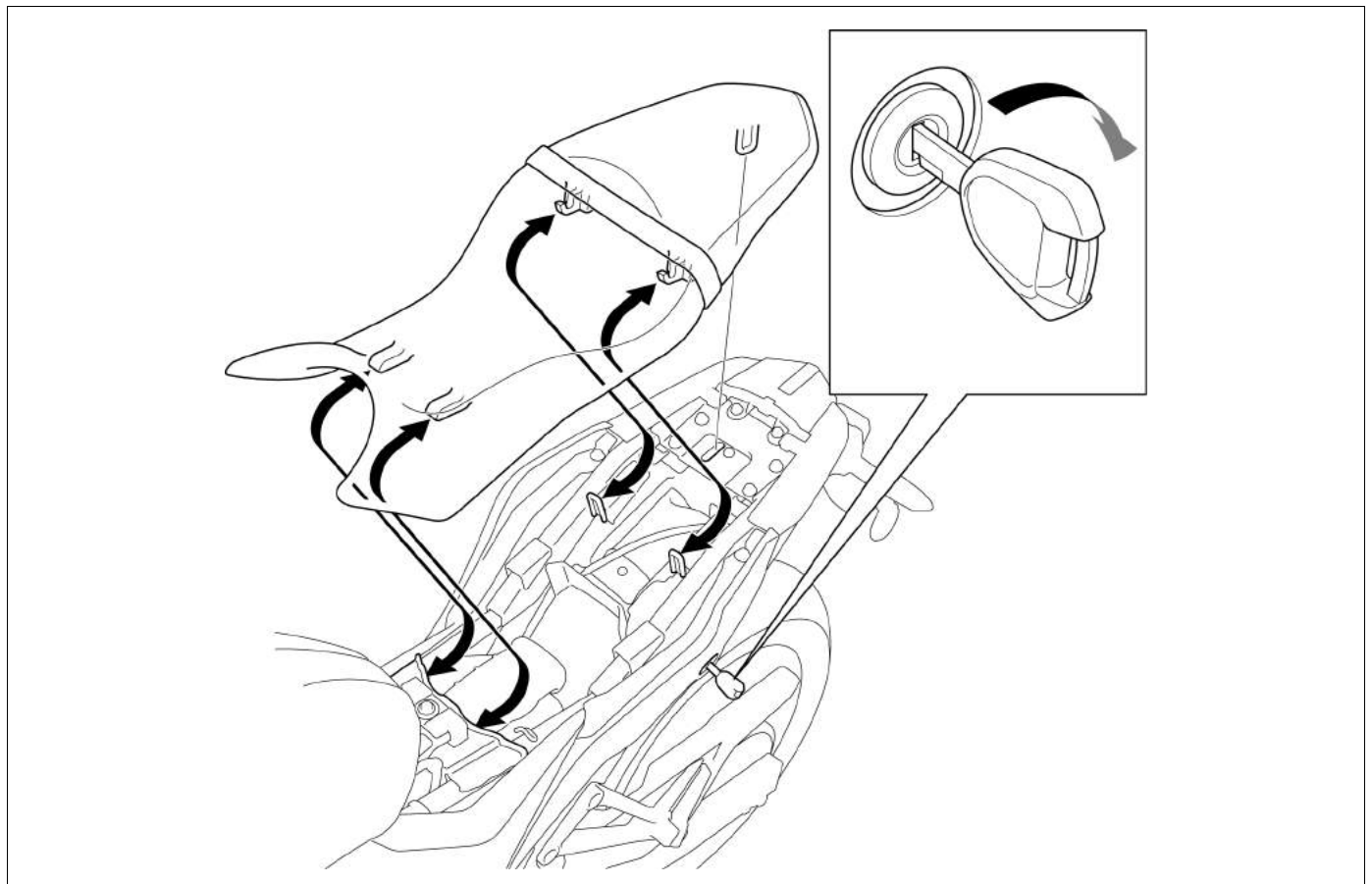
- [10] Rear fender A → 3-10
- [11] Rear fender B → 3-11
- [12] Drive chain cover → 3-11
- [13] Pillion step → 3-4
- [14] Step holder → 3-12
- [15] Gearshift pedal → 3-13
- [16] Drive sprocket cover → 3-9
- [17] Battery box → 3-12



REARVIEW MIRROR

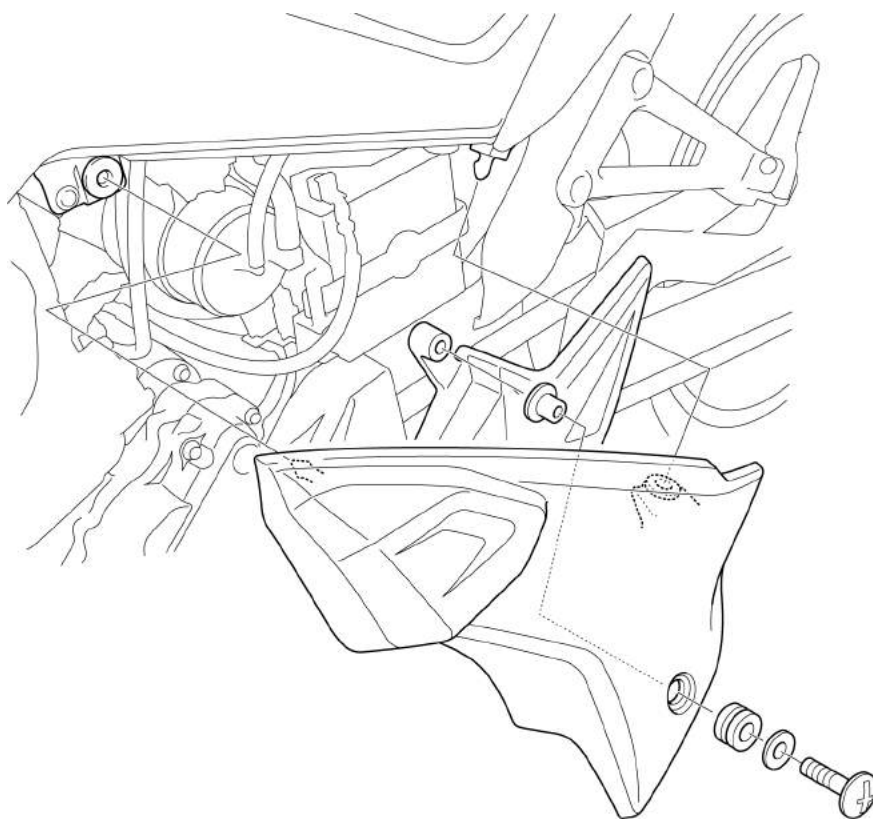


SEAT

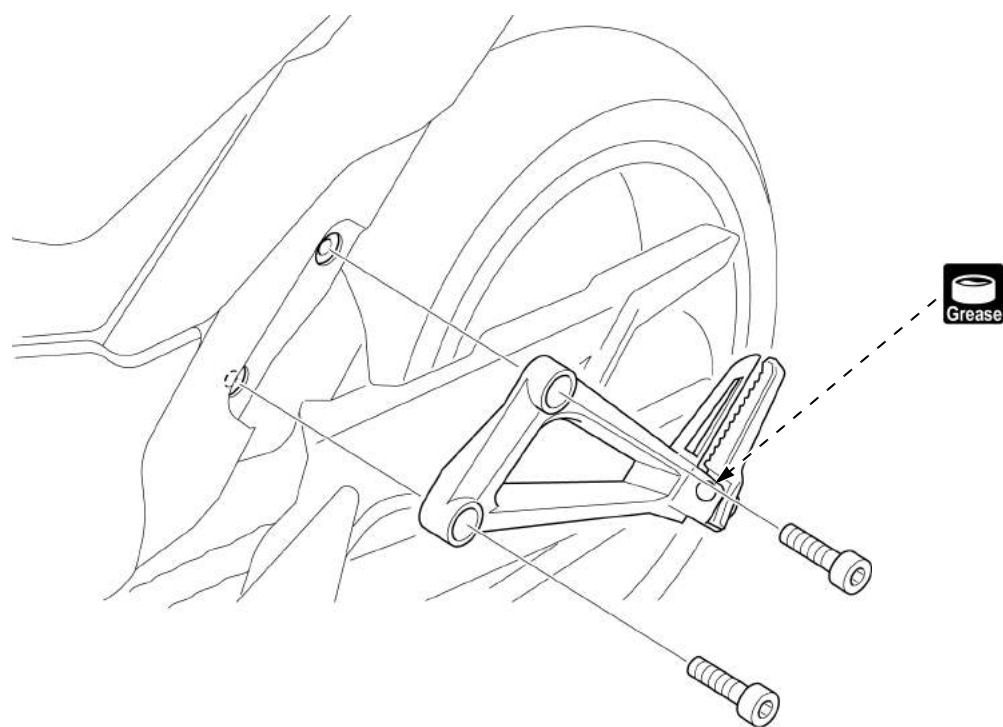




SIDE COVER

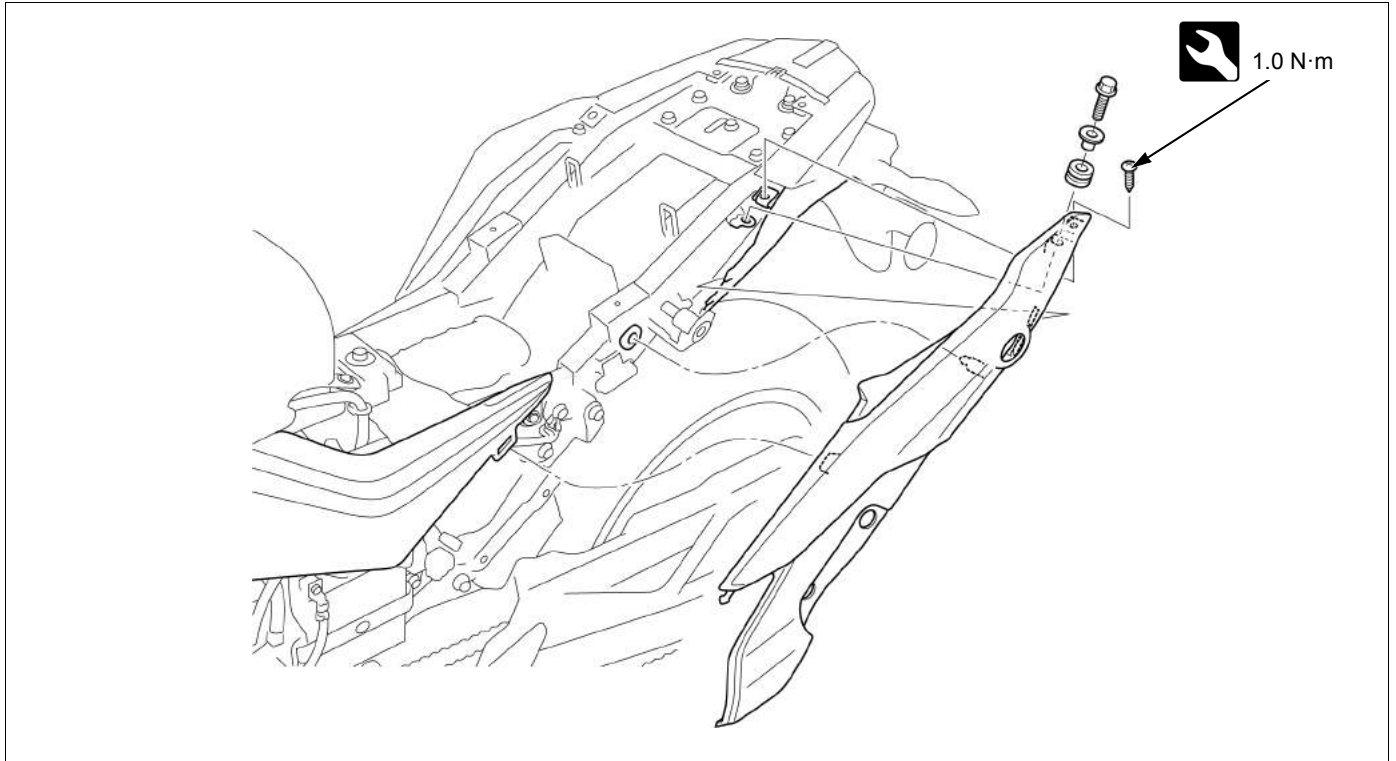


PILLION STEP

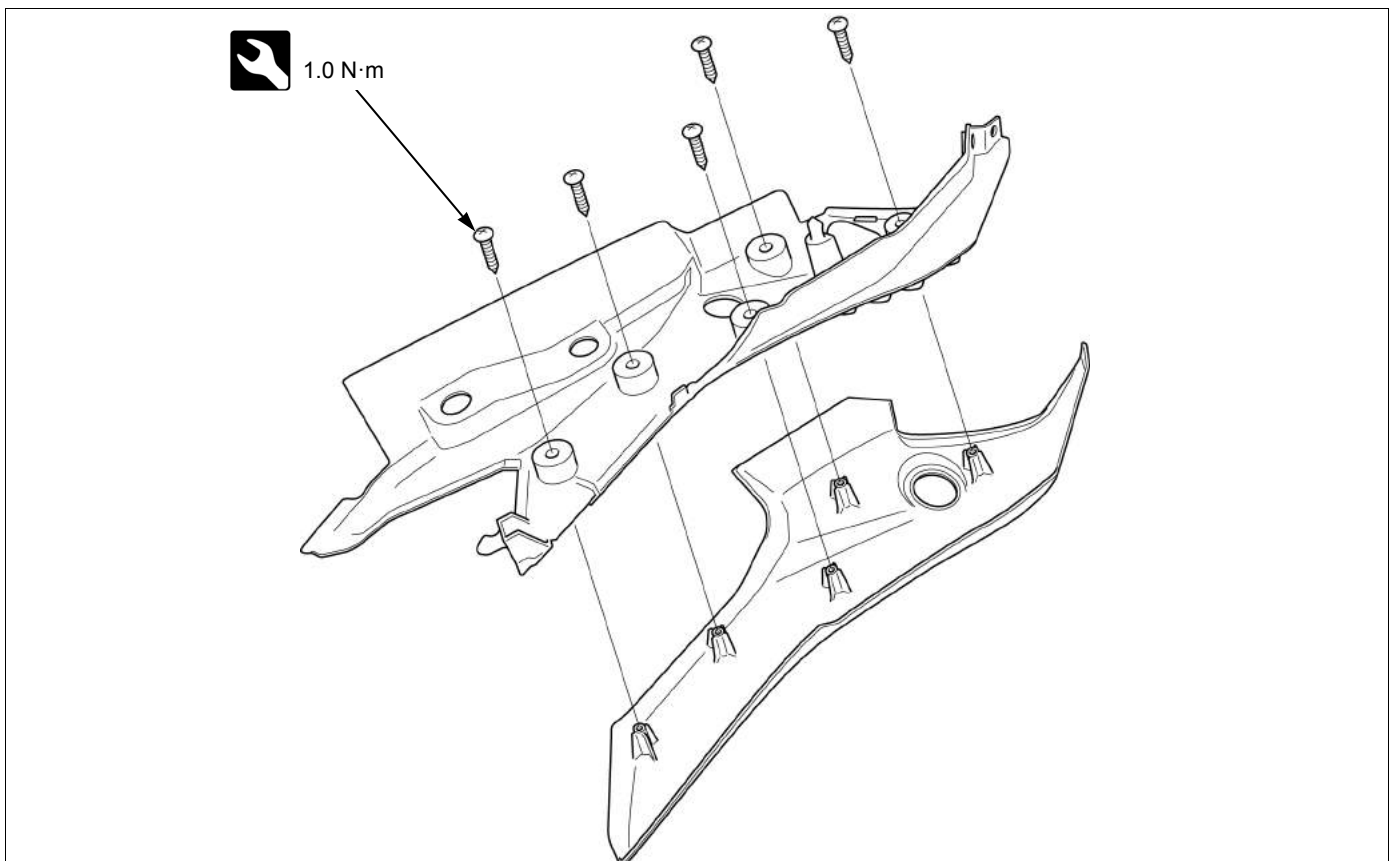




REAR COWL

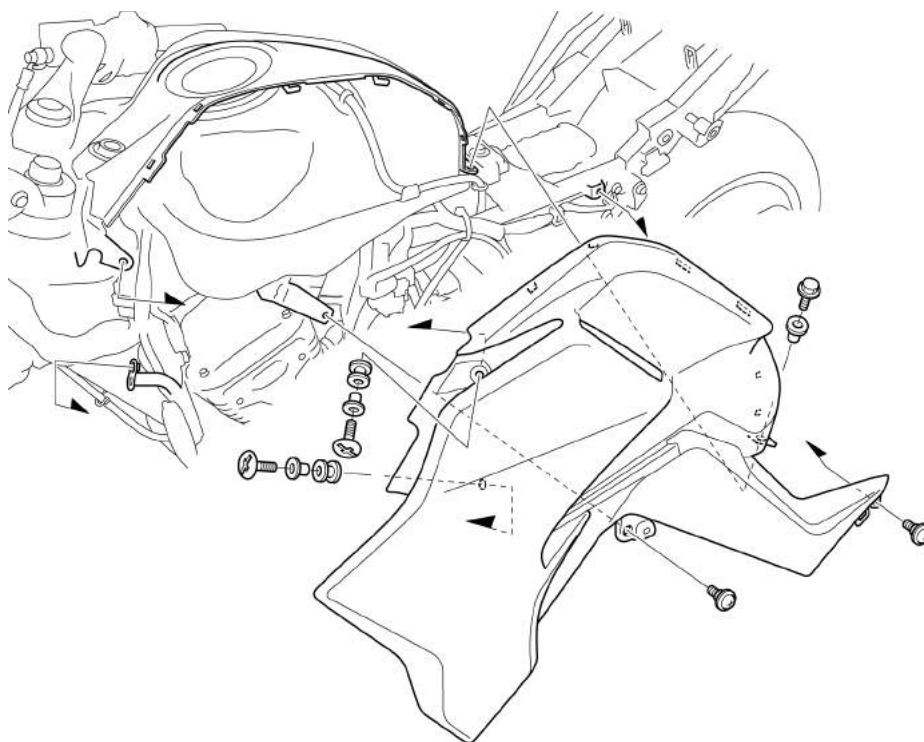


- Seat → 3-3
- Side cover → 3-4
- Pillion step → 3-4

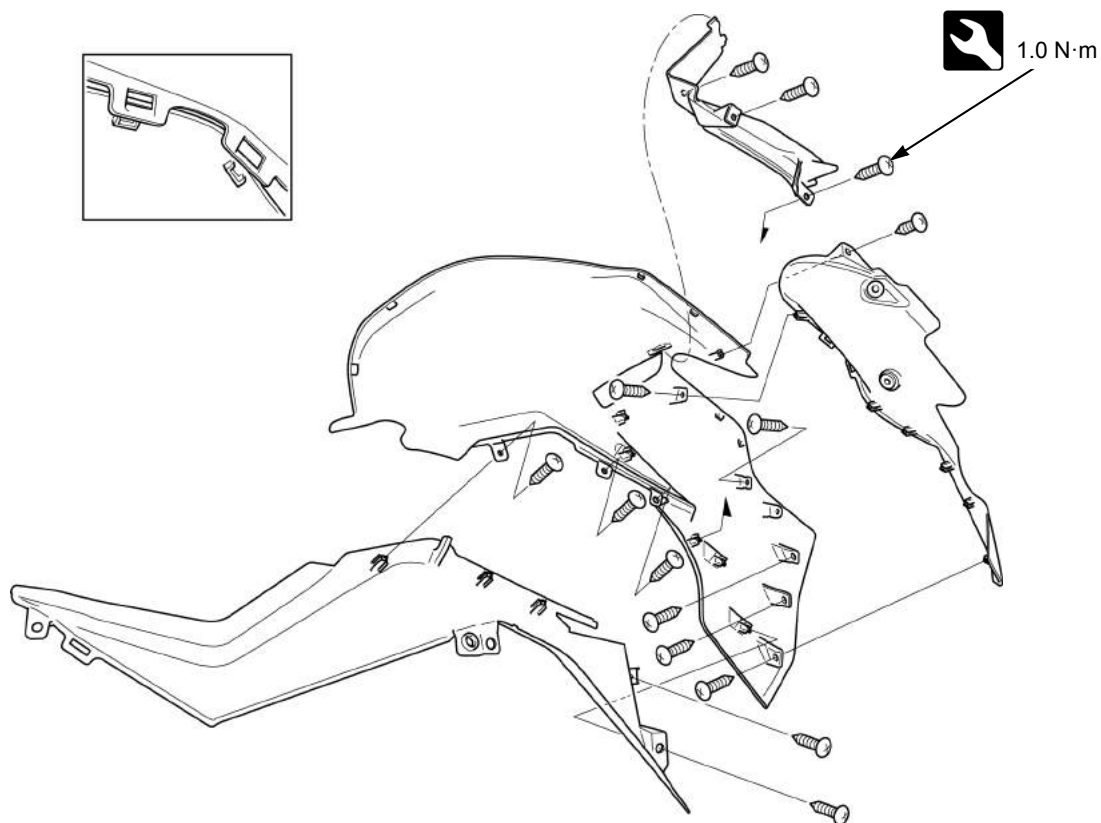




FUEL TANK SHROUD

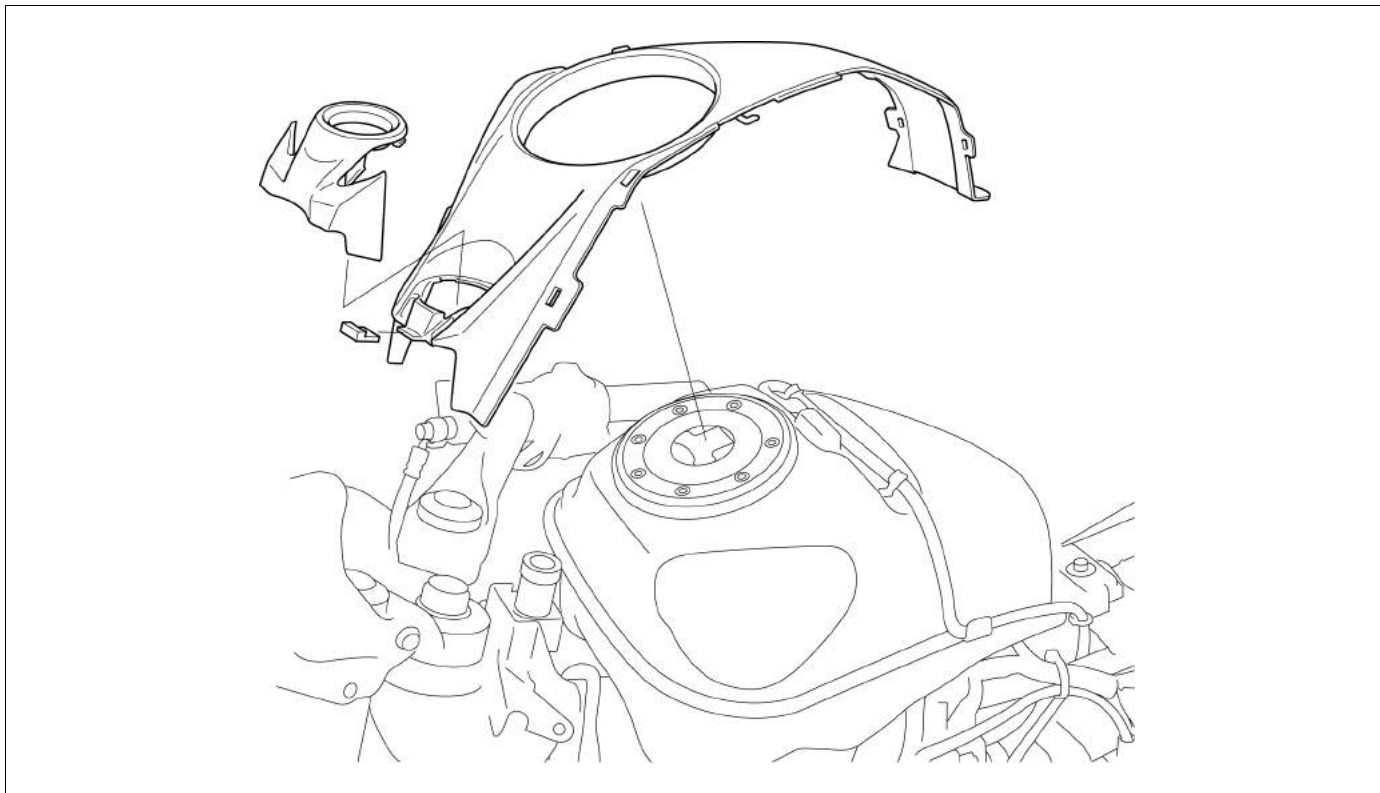


• Rear cowl → 3-5



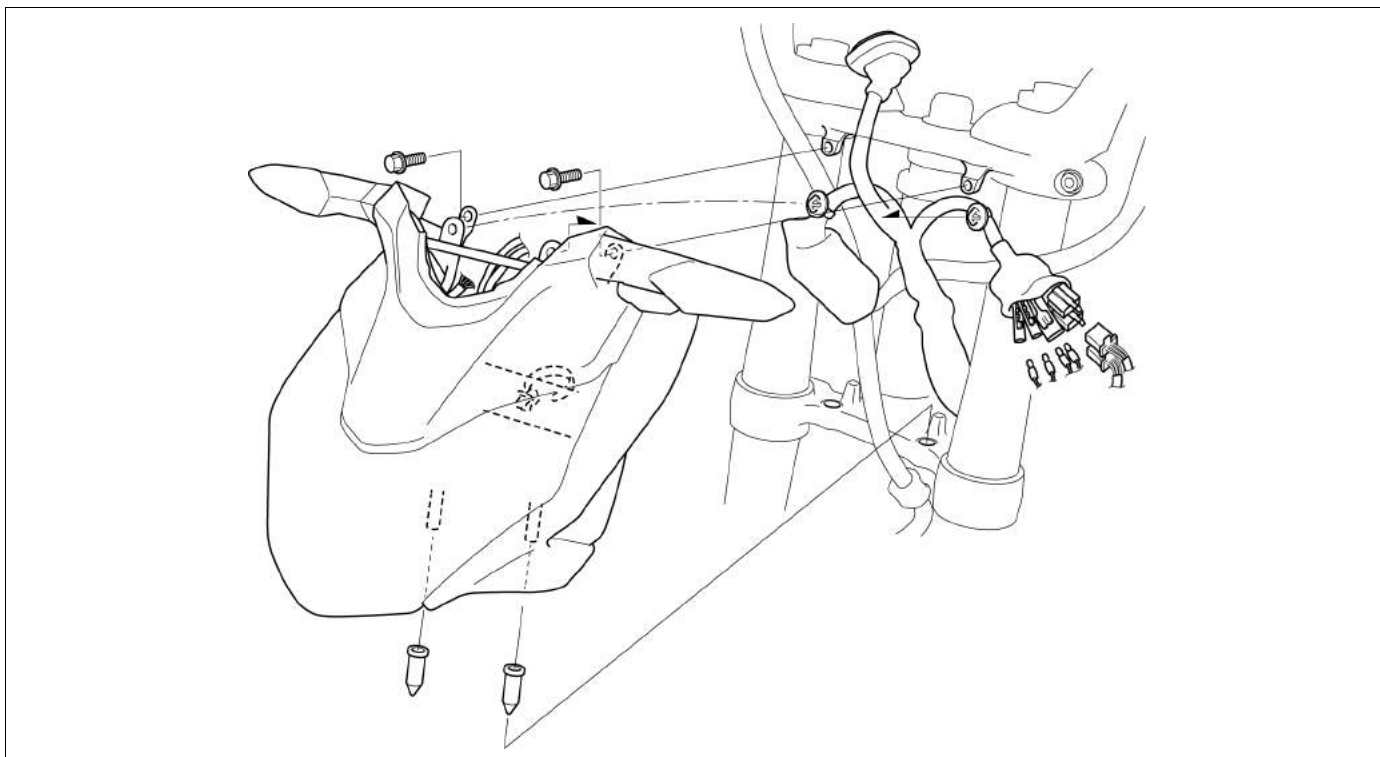


FUEL TANK CENTER COVER



• Fuel tank shroud → 3-6

FRONT VISOR

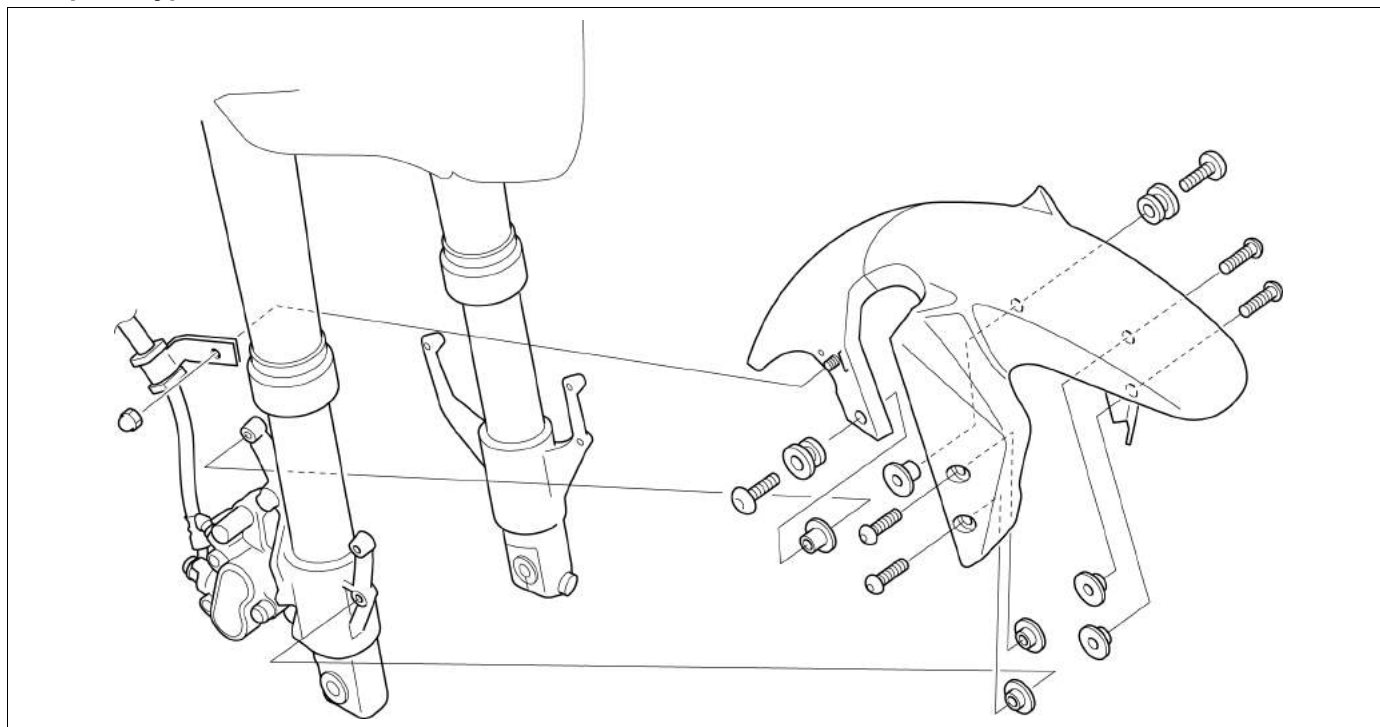


• Speedometer → 4-34



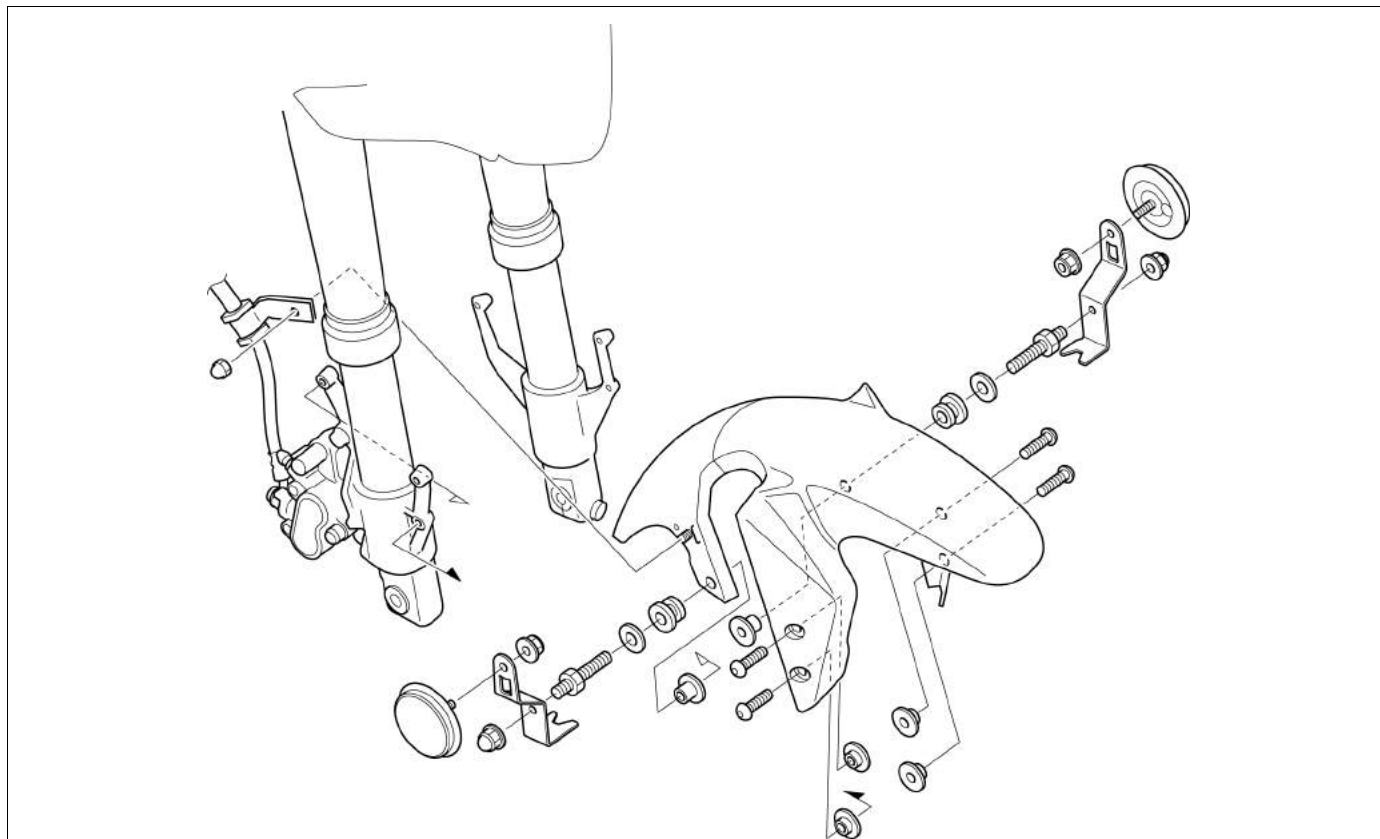
FRONT FENDER

Except CL type



• Front wheel →3-16

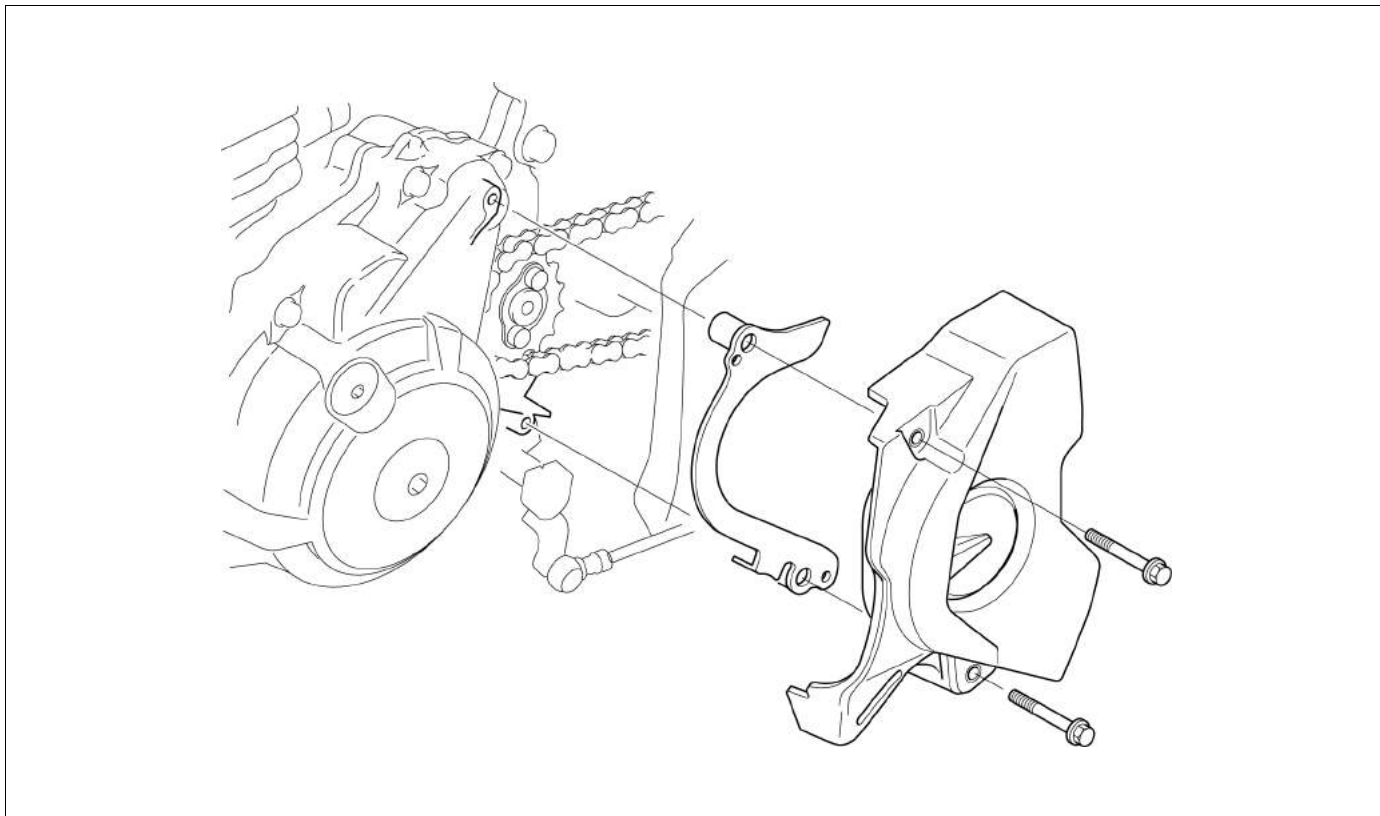
CL type



• Front wheel →3-16



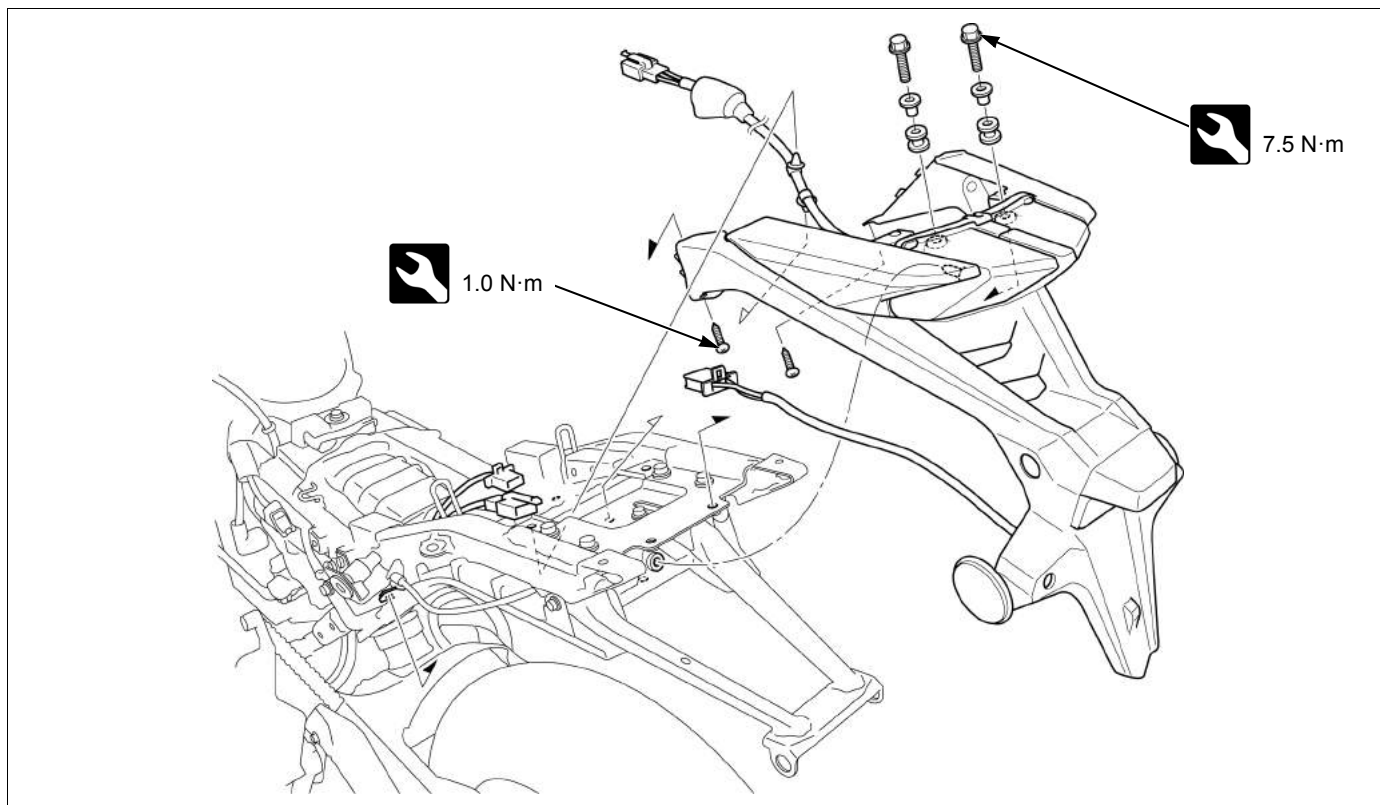
DRIVE SPROCKET COVER



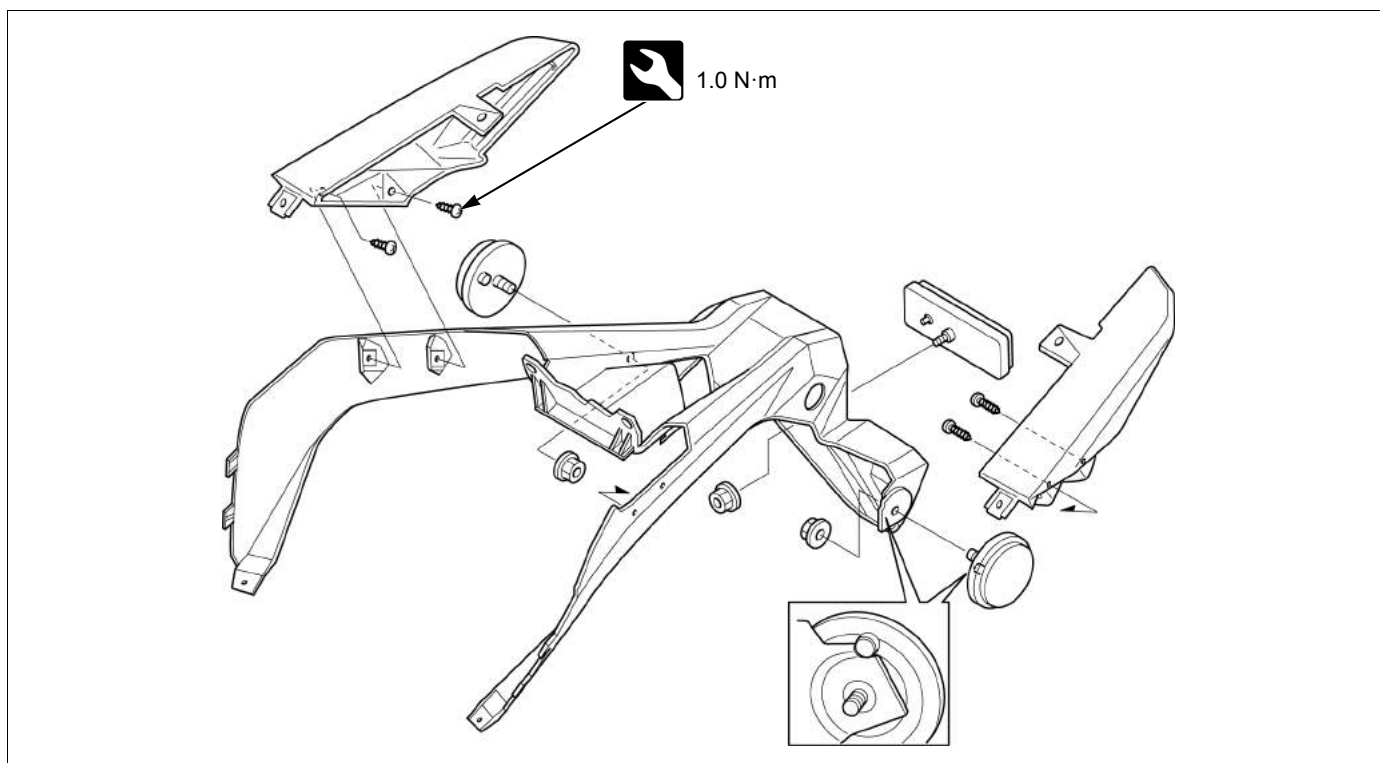
• Left side cover → 3-4



REAR FENDER A



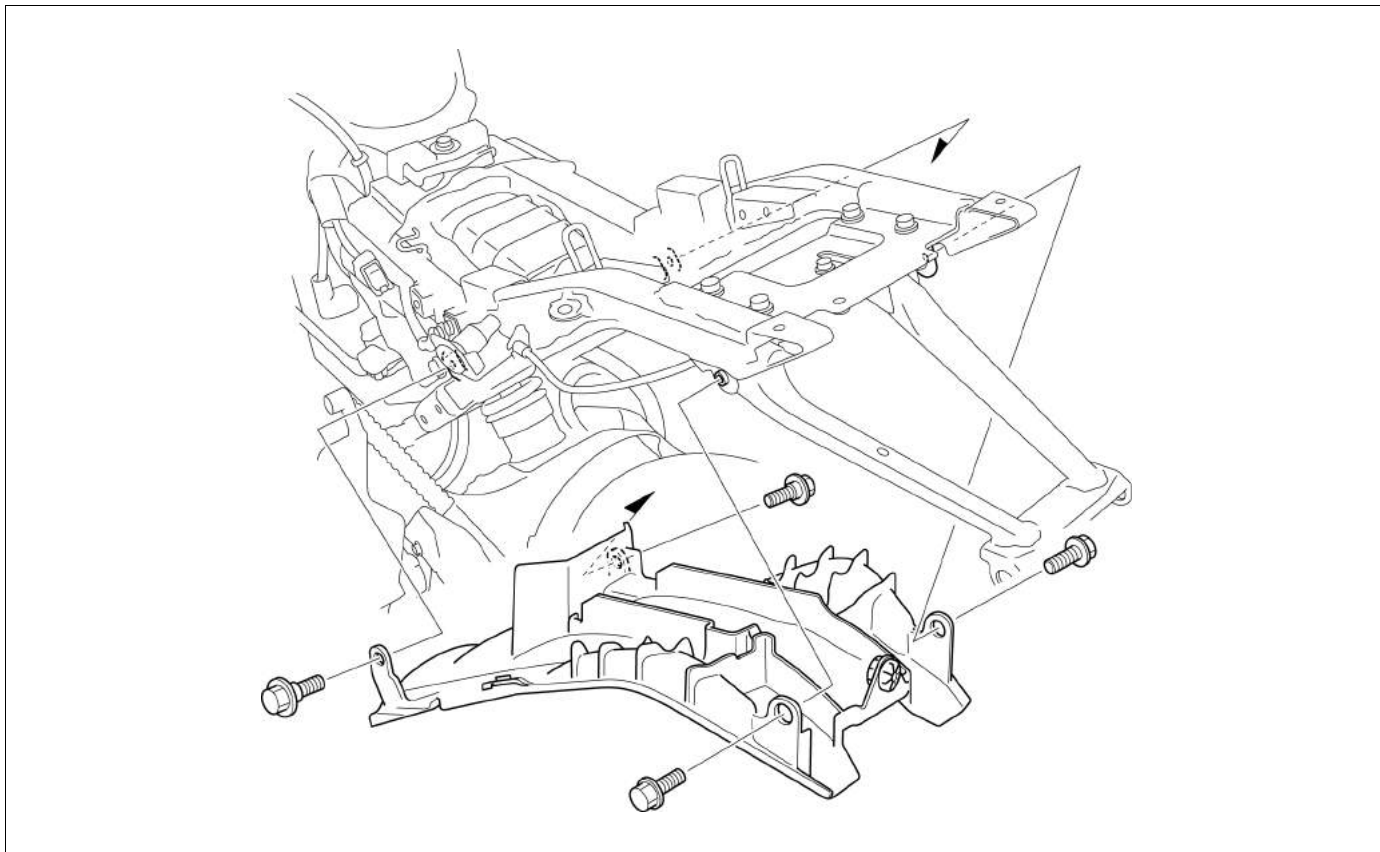
• Rear cowl → 3-5



• Brake/tail light unit → 4-28

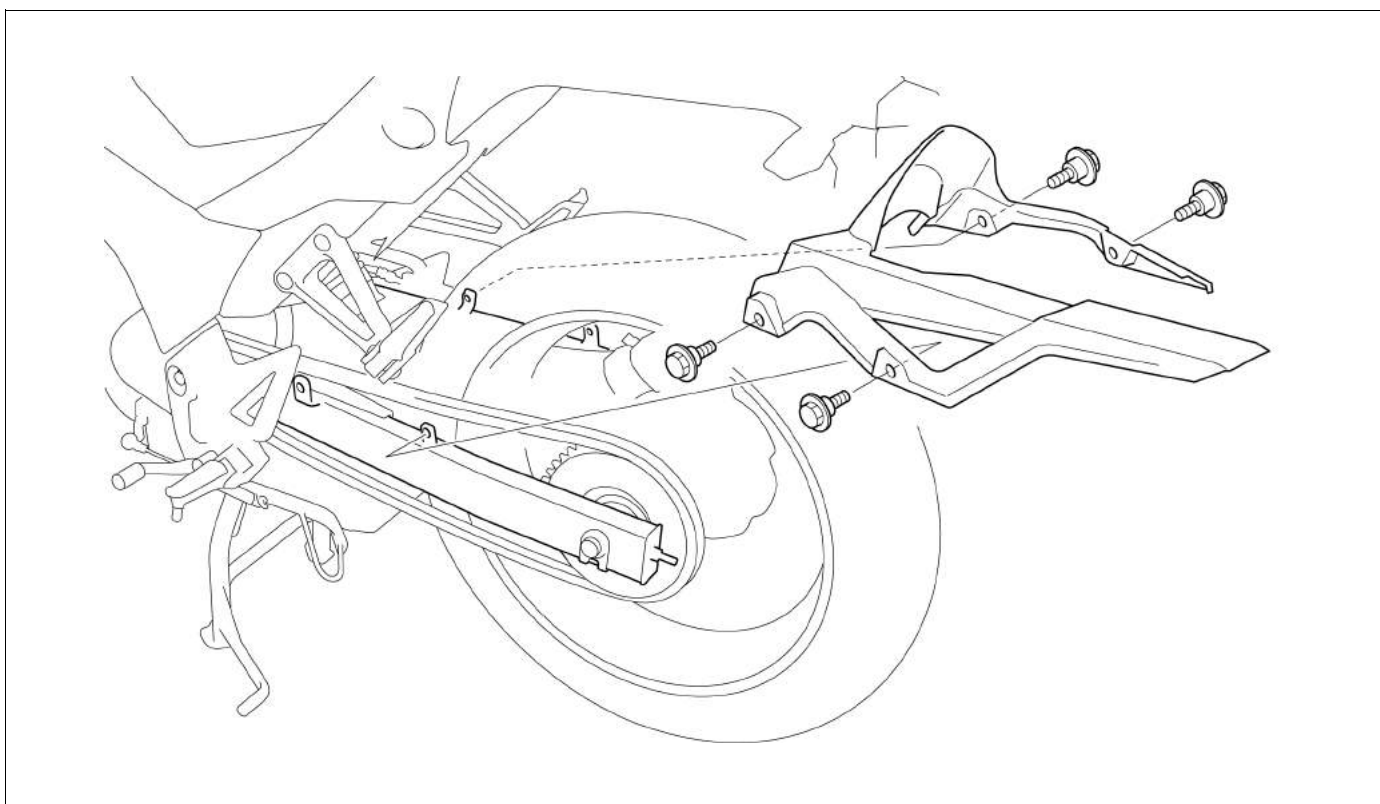


REAR FENDER B



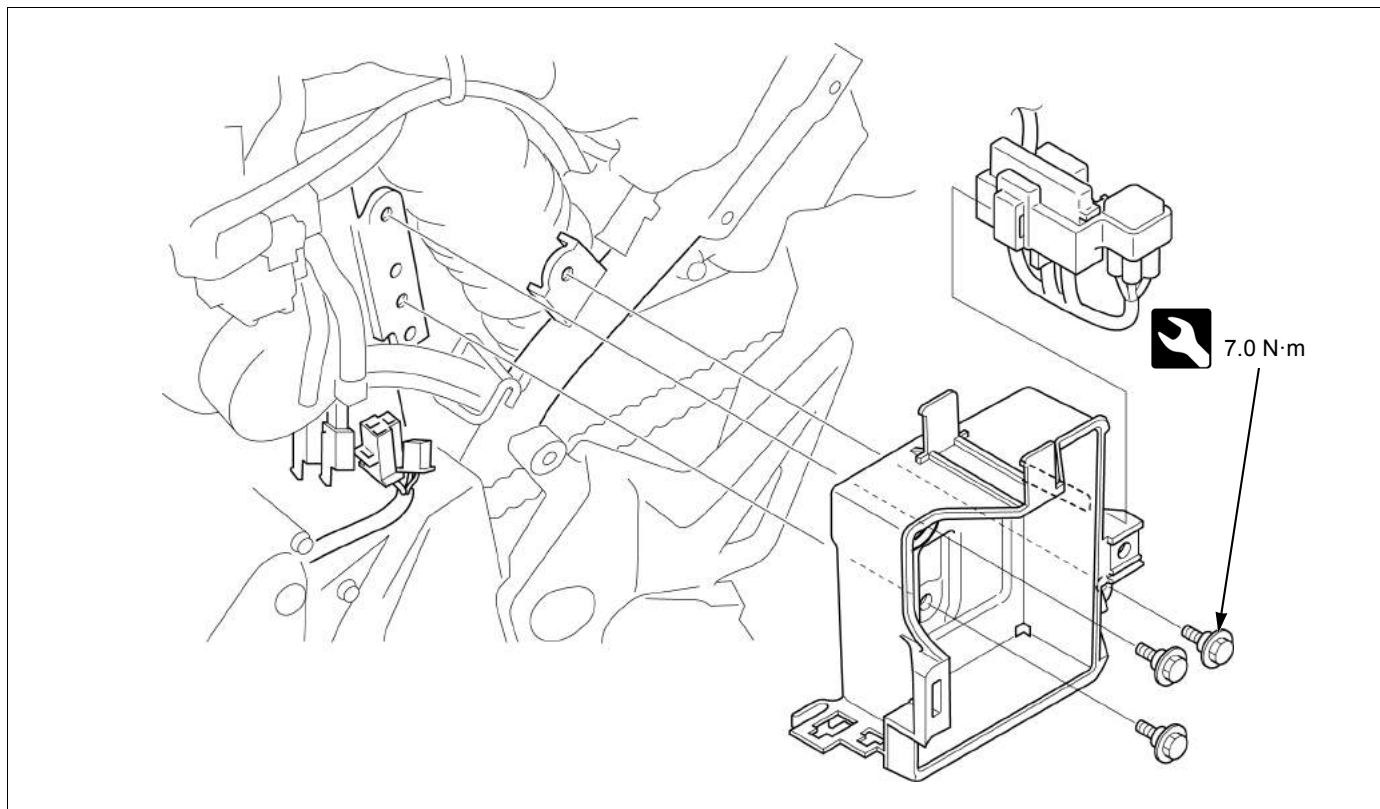
• Rear fender A → 3-10

DRIVE CHAIN COVER



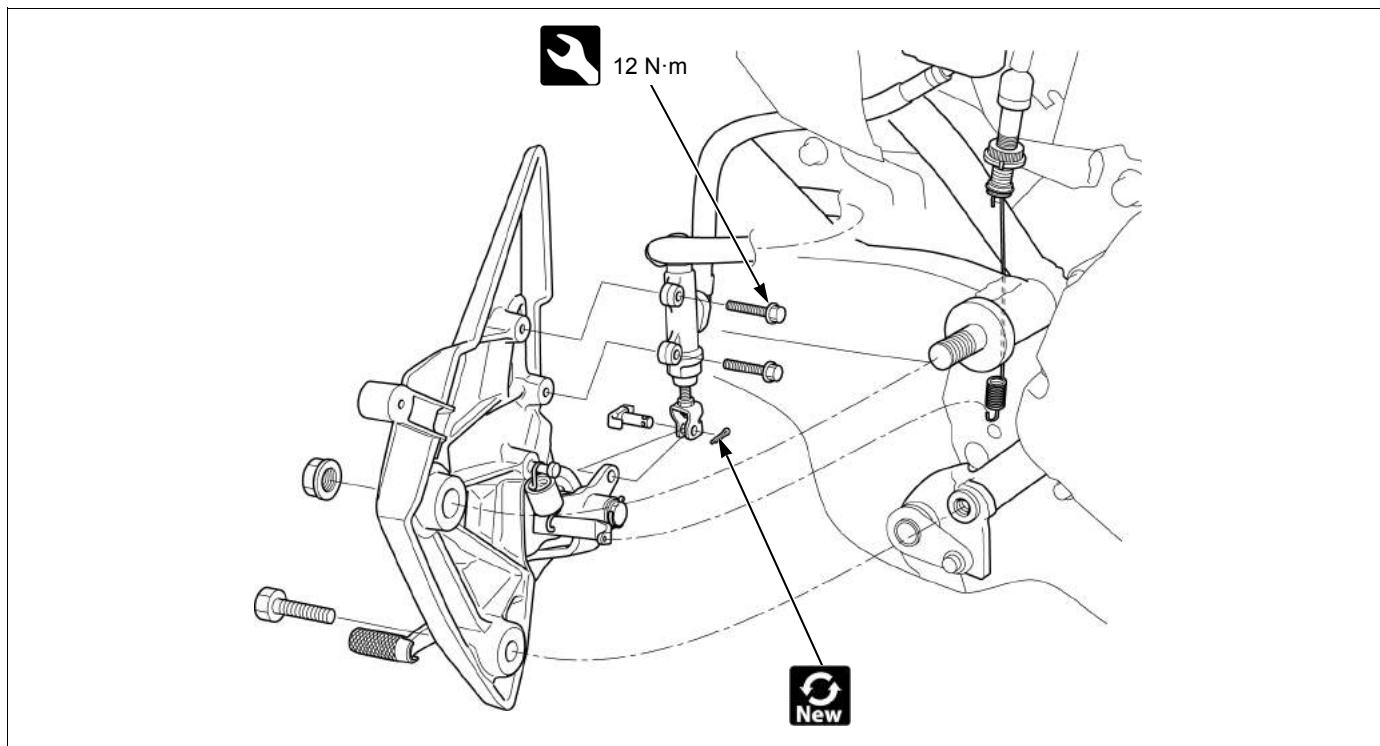


BATTERY BOX



- ECM →4-19
- Battery →4-28

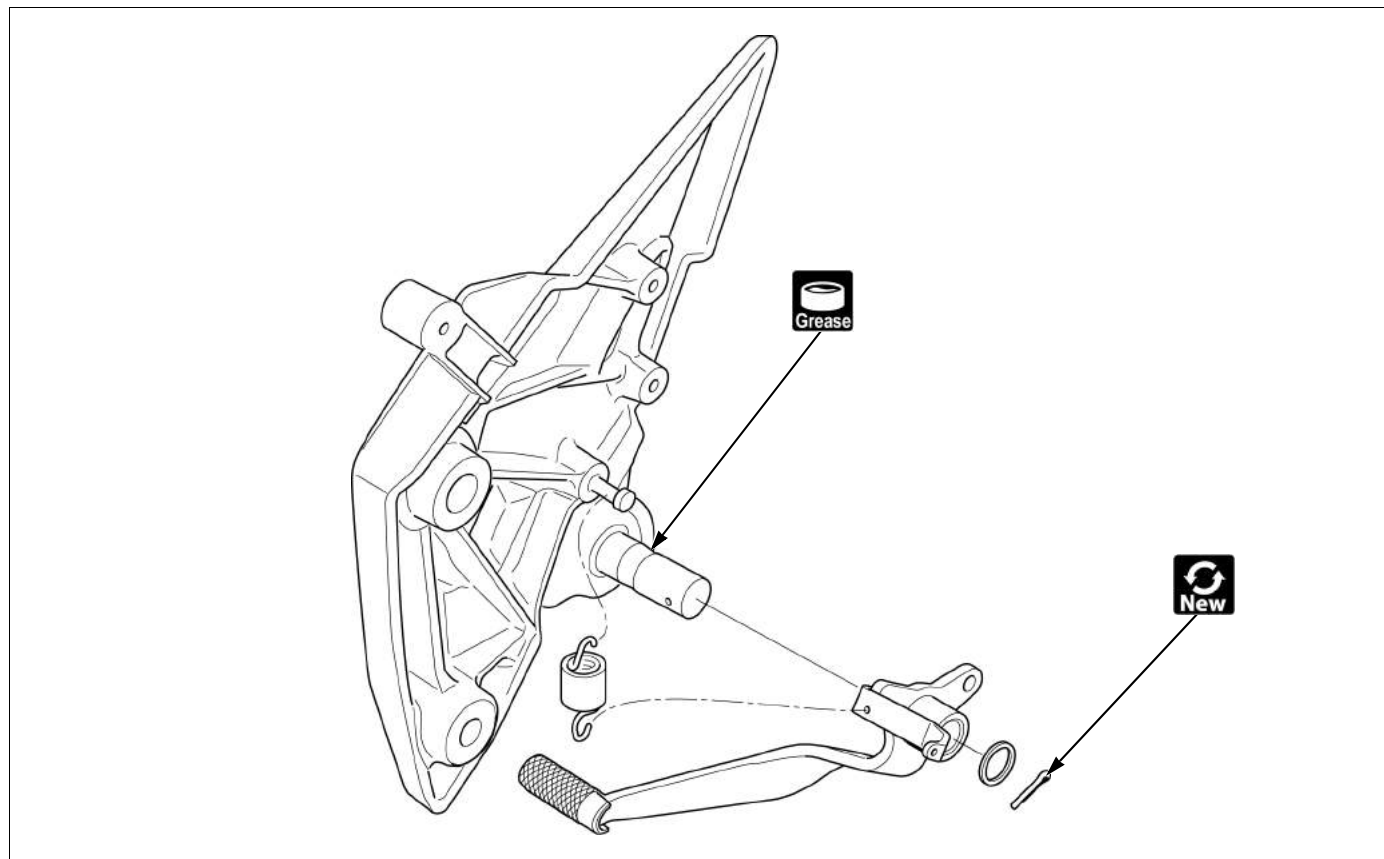
STEP HOLDER



- Side cover →3-4

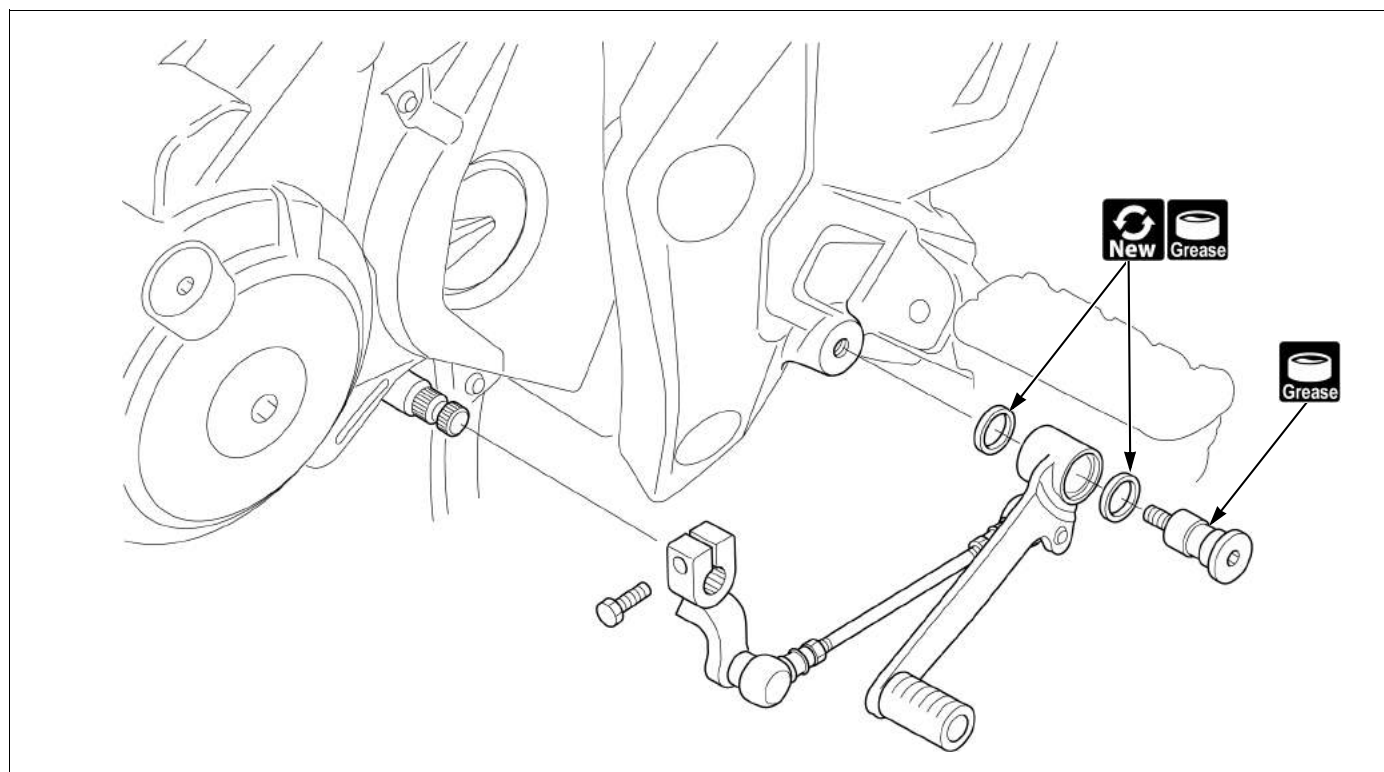


BRAKE PEDAL



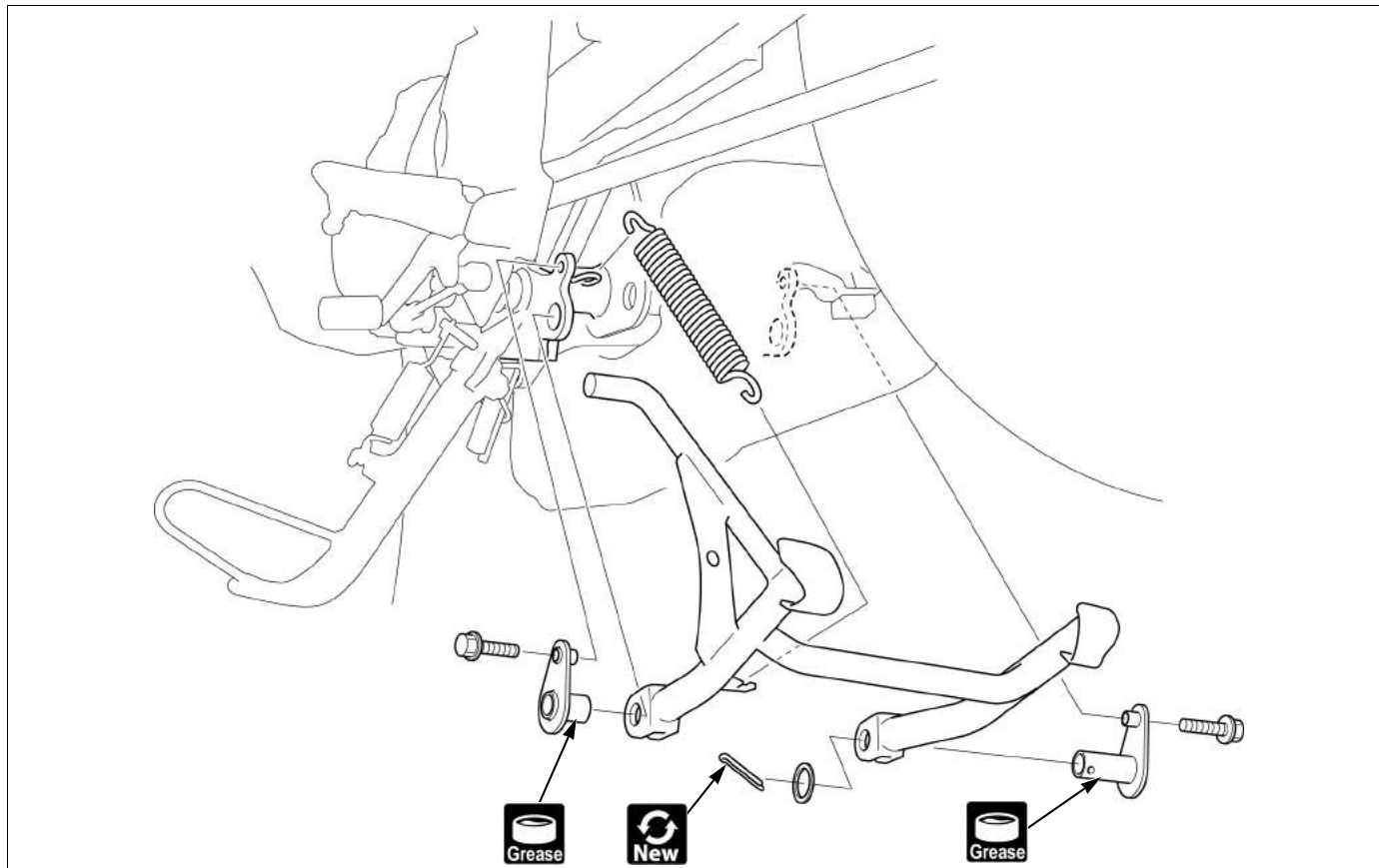
• Step holder → 3-12

GEARSHIFT PEDAL



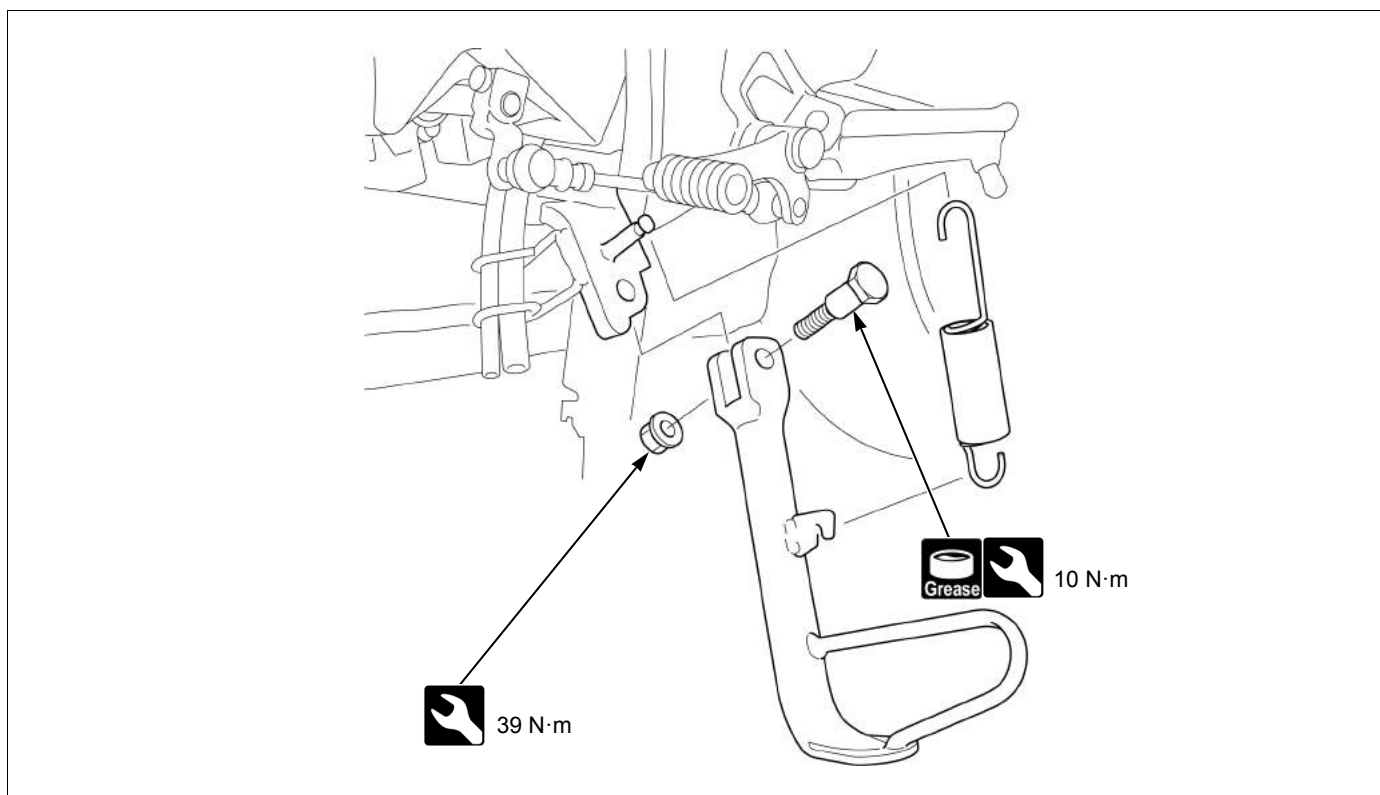


CENTERSTAND



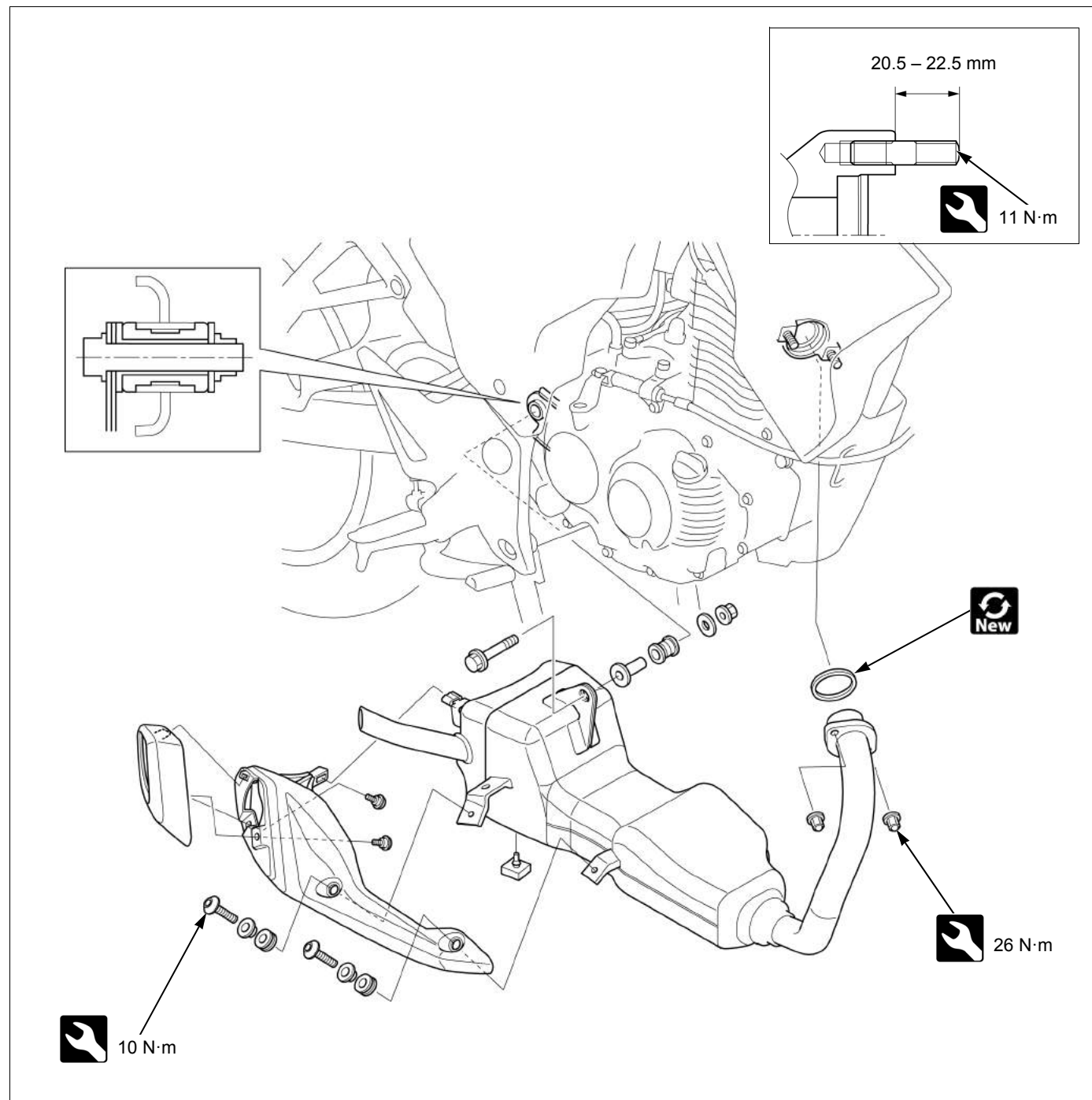
• Muffler cover → 3-15

SIDESTAND



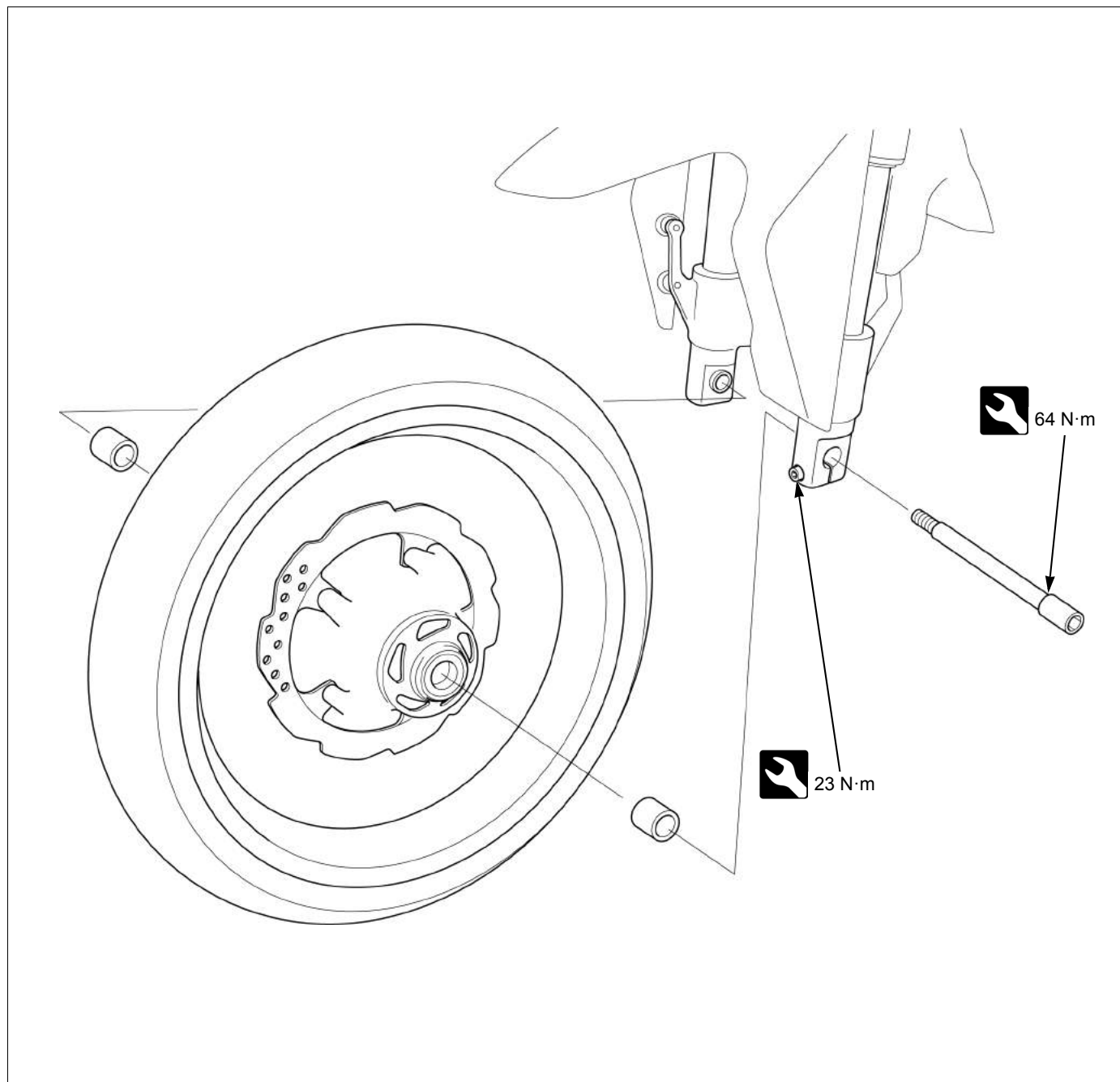


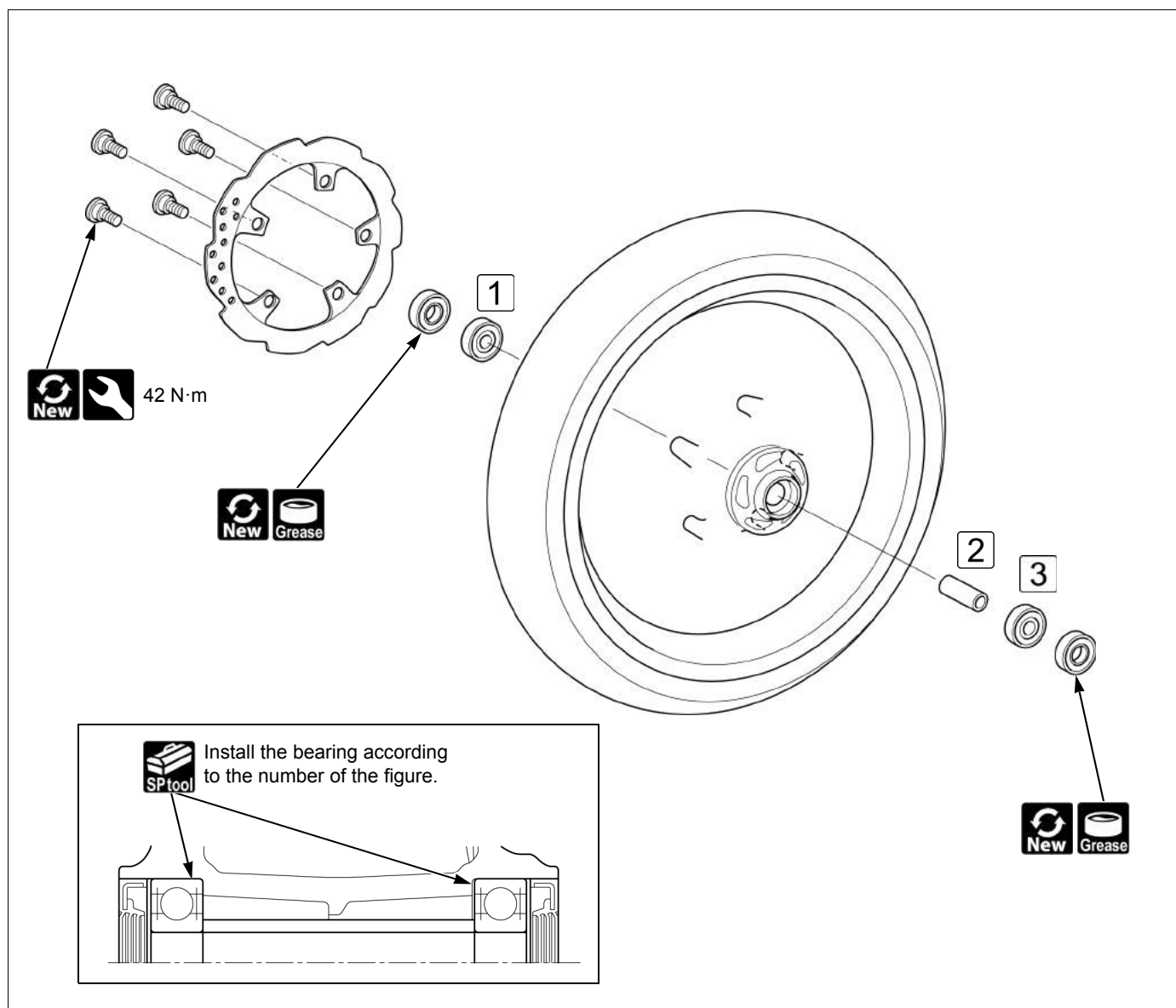
EXHAUST PIPE/MUFFLER





FRONT 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, 15 mm: 07746-0050400

Bearing remover shaft: 07746-0050100



- **1 3** Drive in a new bearing squarely with its marked side facing outside until it is fully seated.

Driver: 07749-0010000

Attachment, 42 x 47 mm: 07746-0010300

Pilot, 15 mm: 07746-0040300

- **2** Install the distance collar.

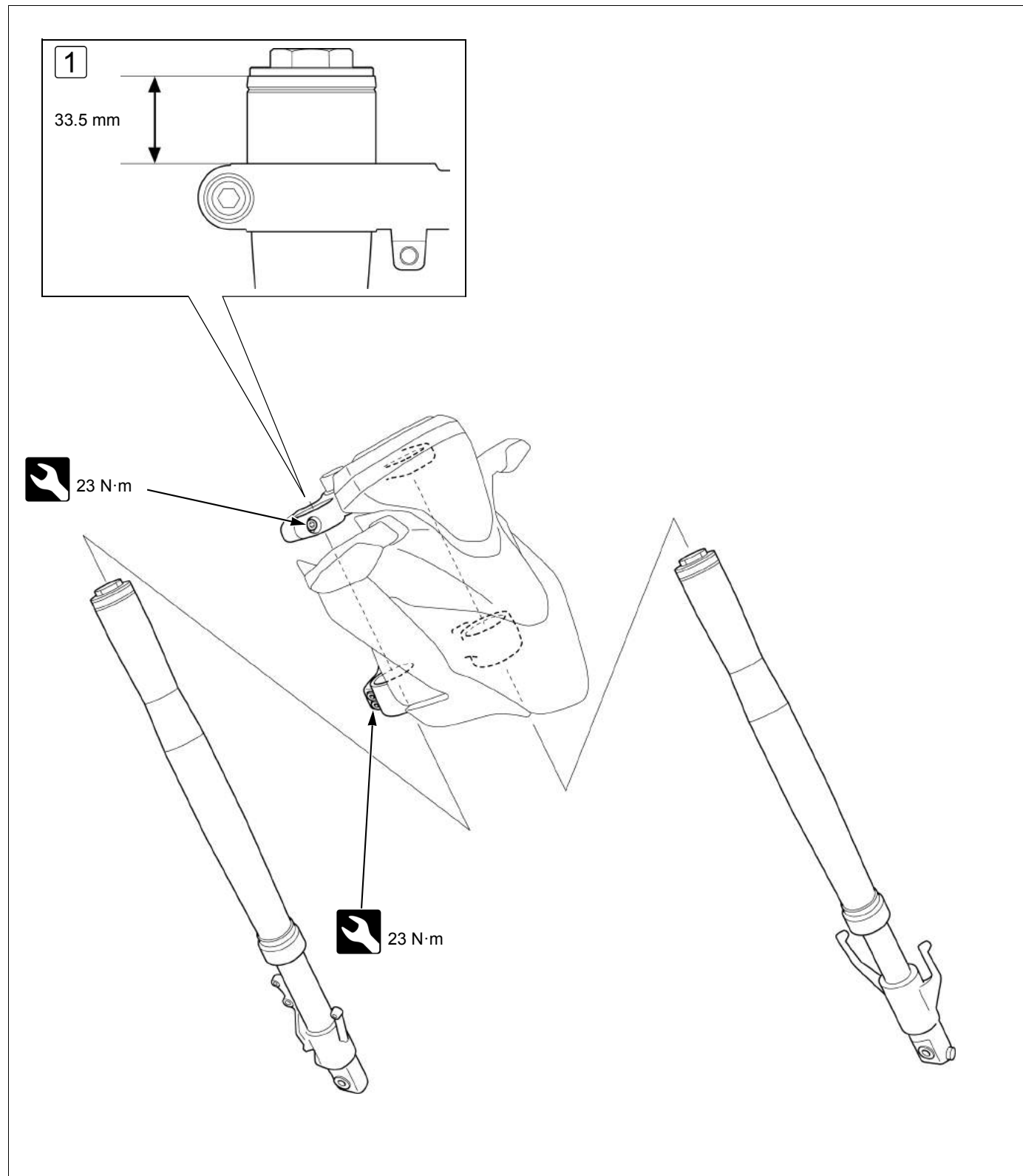
- Wheel disassembly and inspection



Basic



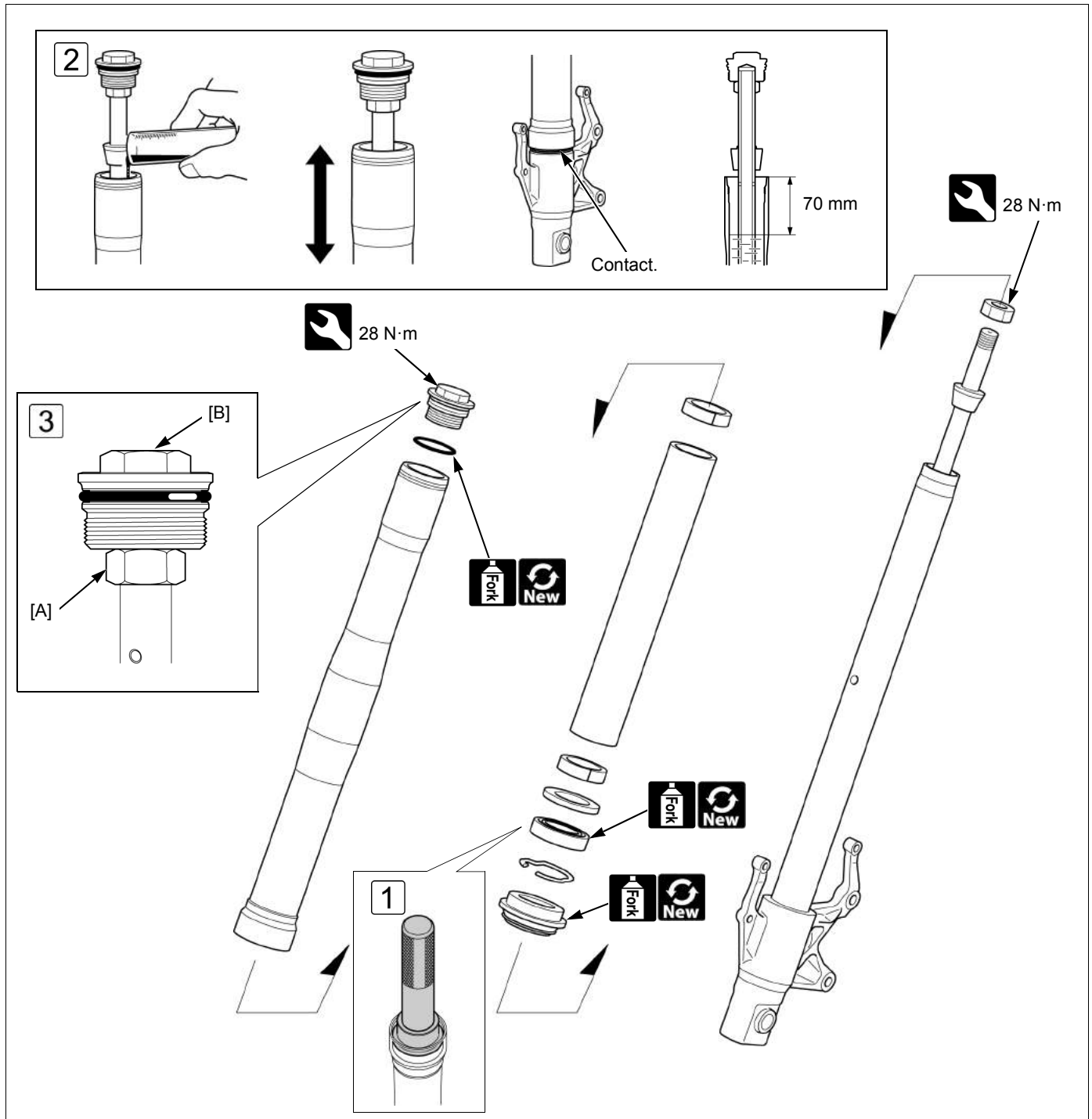
FORK



- Handlebar → 3-20
- Front fender → 3-8
- Brake caliper → 3-28



- [1] Install the front fork so that the length from the top bridge surface is 33.5 mm.



- 1 Drive in a new oil seal squarely until it is fully seated.

Driver: 07749-0010000

Bearing installer: 070MF-MEN0100



- 2 Pour the specified amount of recommended fork fluid into the outer tube.

RECOMMENDED FORK FLUID: MX4#

FORK FLUID CAPACITY: 395 cm³

- Bleed air from the fork pipe by pumping the outer tube.

- Compress the fork pipe fully and measure the fluid level from the top of the outer tube.

FORK FLUID LEVEL: 70 mm



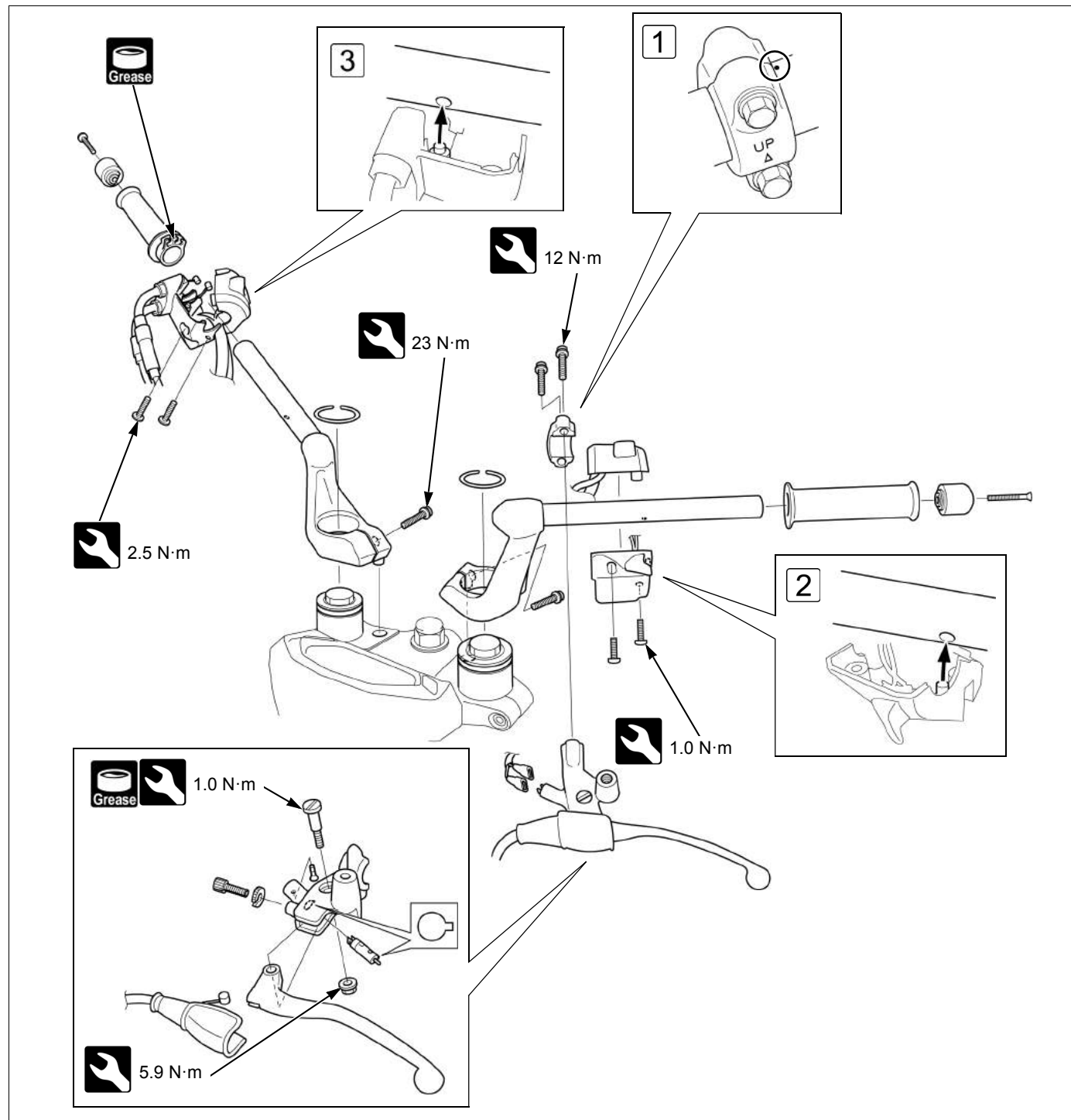
- 3 Hold the fully seated fork rod nut [A] and tighten the fork cap [B].



- Fork disassembly and inspection



HANDLEBAR



- Front brake master cylinder → 3-27
- Rearview mirror → 3-3

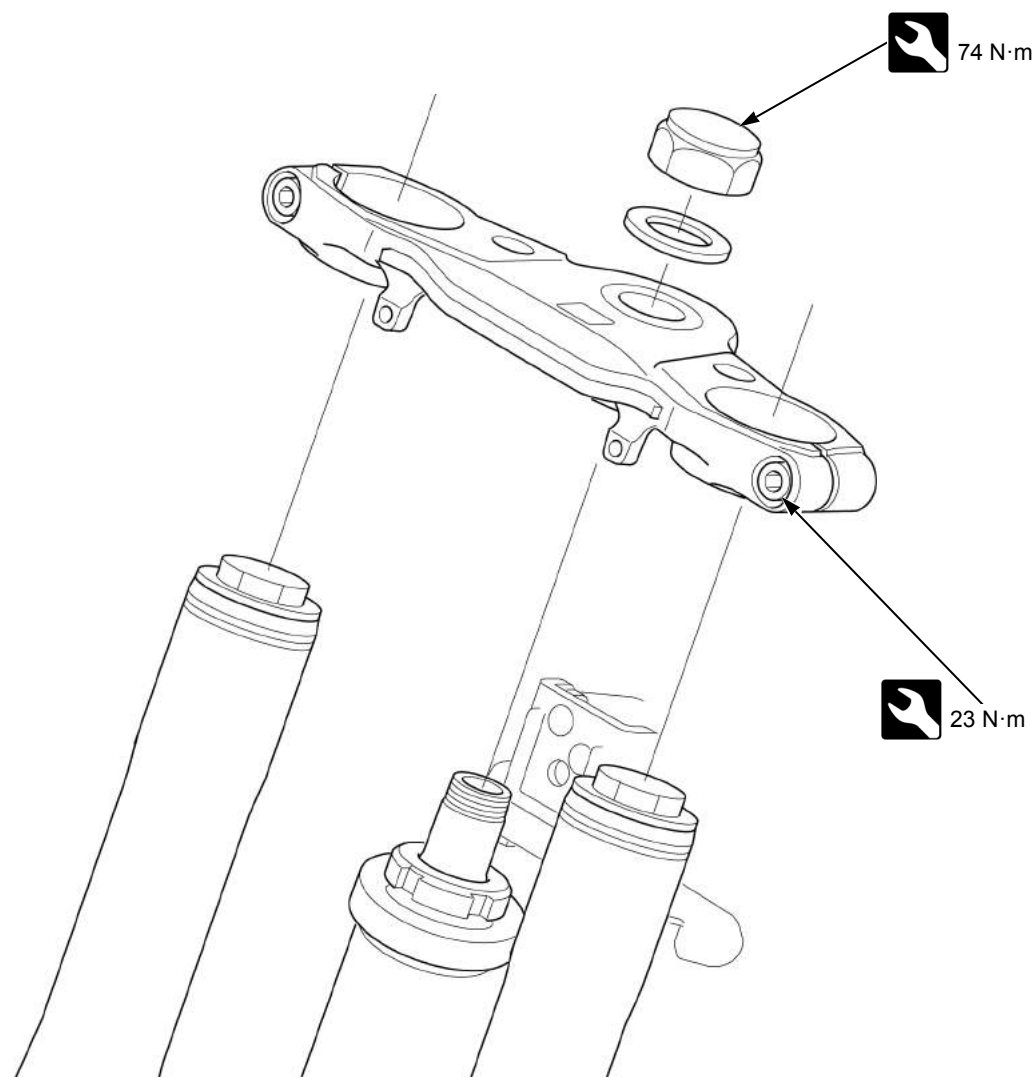


- **1** Install the clutch lever bracket and holder with the "UP" mark facing up. Align the edge of the clutch lever bracket with the punch mark on the handlebar.
- **2** Install the left handlebar switch housing while aligning the locating pin in the housing with the hole in the handlebar.
- **3** Install the throttle pipe housing while aligning its locating pin with the hole on the handlebar.



STEERING STEM

TOP BRIDGE

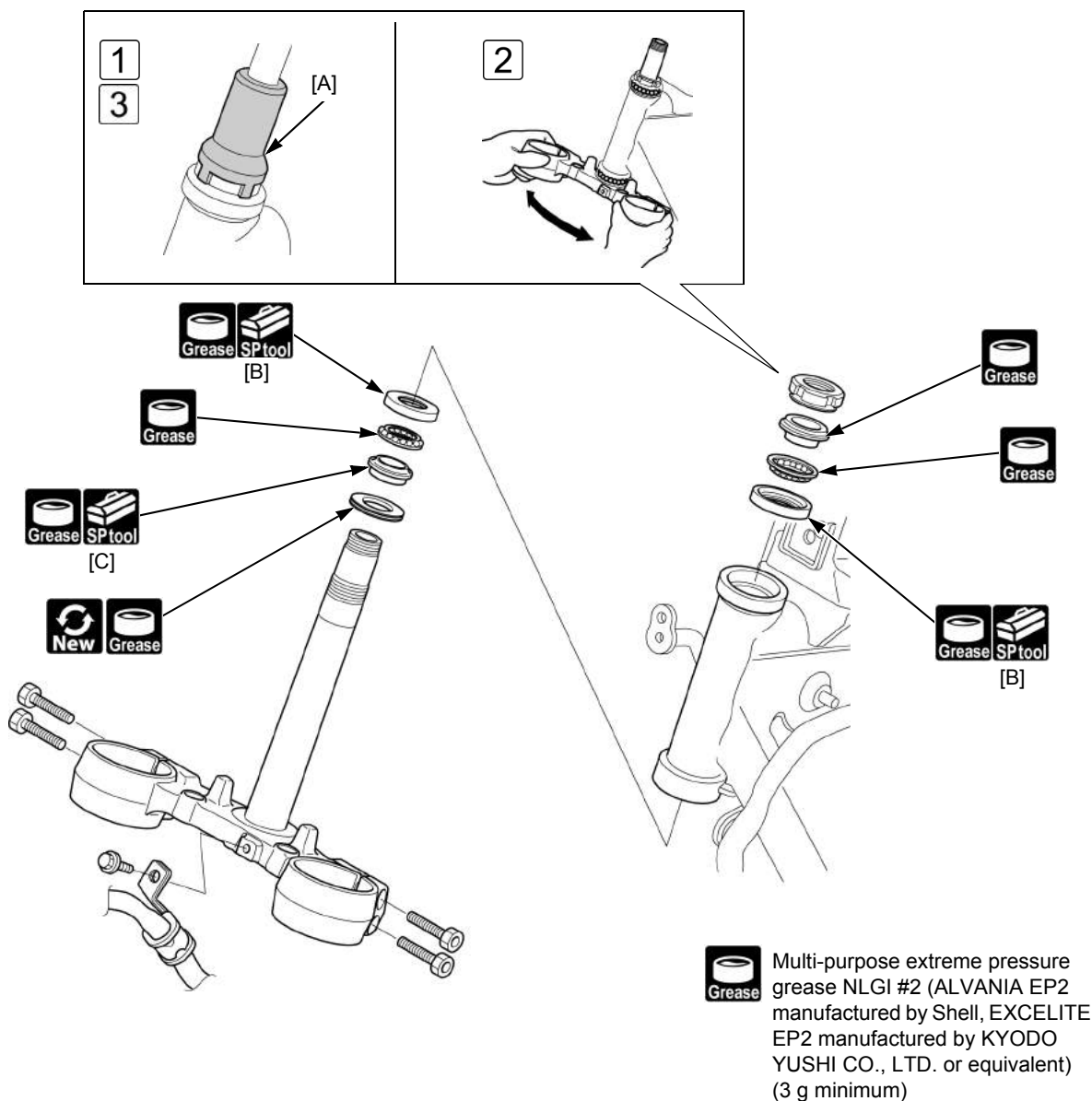


- Handlebar → 3-20
- Front visor → 3-7



FRAME & CHASSIS

BOTTOM BRIDGE



- Fork → 3-18
- STEERING STEM:
[A] Steering stem socket wrench: 07916-3710101

- STEERING STEM BEARING:
[B] Ball race remover shaft: 07GMD-KS40100



- STEERING STEM BEARING:
[C] Steering stem driver: 07946-4300101

- STEERING STEM:
[A] Steering stem socket wrench: 07916-3710101



- [1] Install the steering stem adjusting nut. Hold the steering stem and tighten the steering stem adjusting nut to the initial torque using the special tool.

TORQUE: 24.5 N·m

- [2] Turn the steering stem lock-to-lock several times to seat the bearing. Completely loosen the top thread.

- [3] Tighten the steering stem adjusting nut to the specified torque using the special tool.

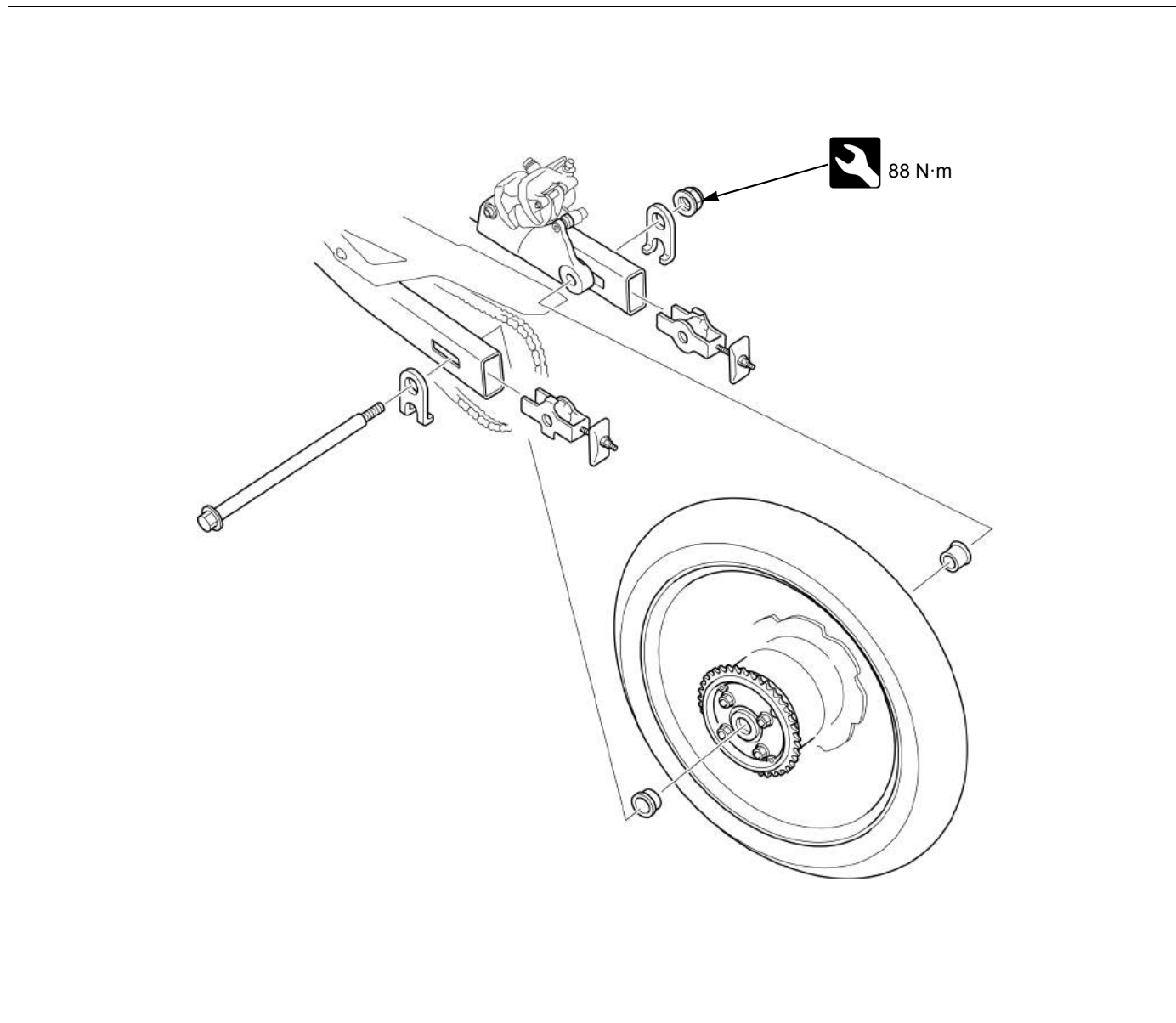
TORQUE: 2.4 N·m

- Steering disassembly/assembly and inspection

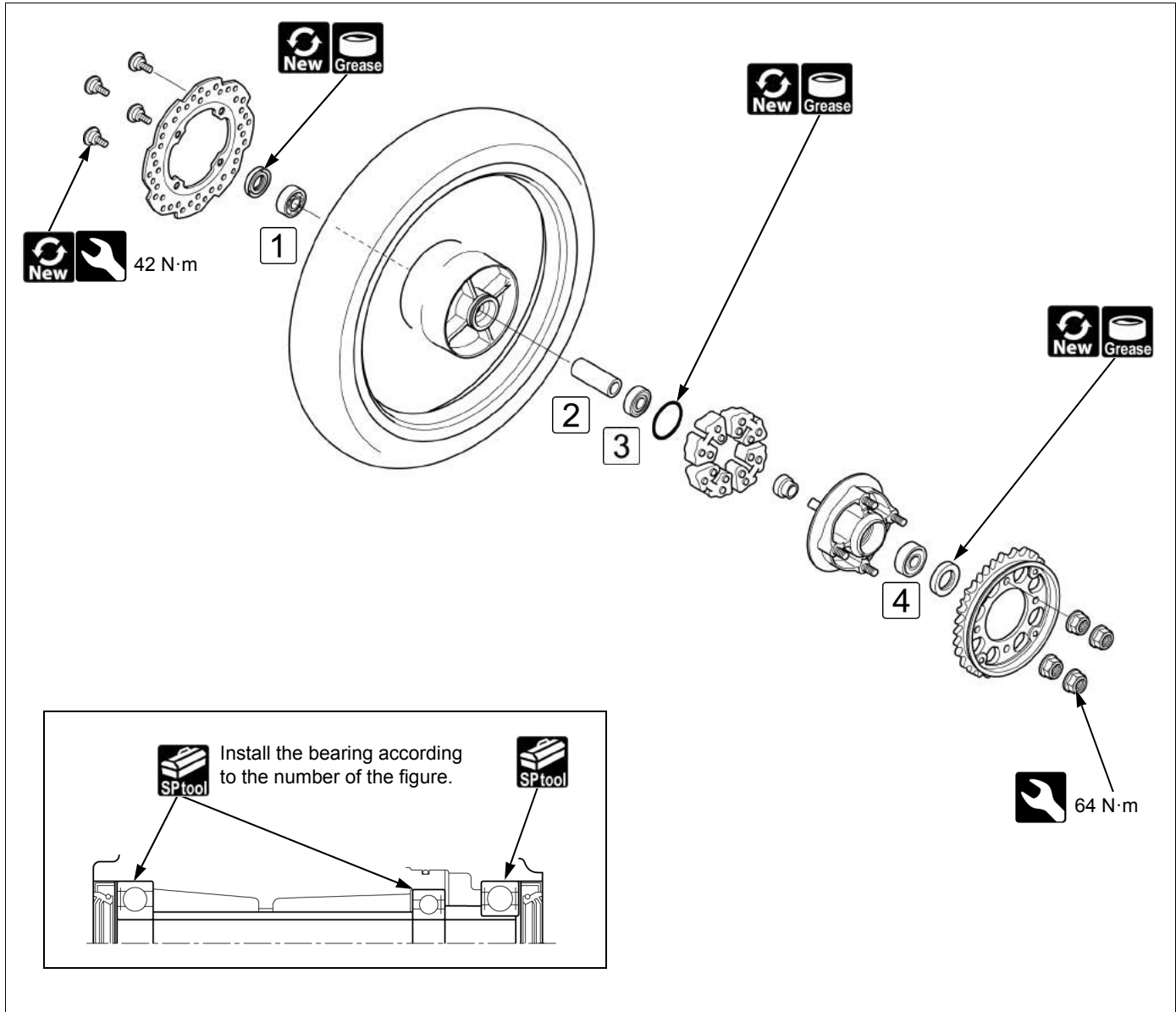




REAR WHEEL



- Wheel inspection

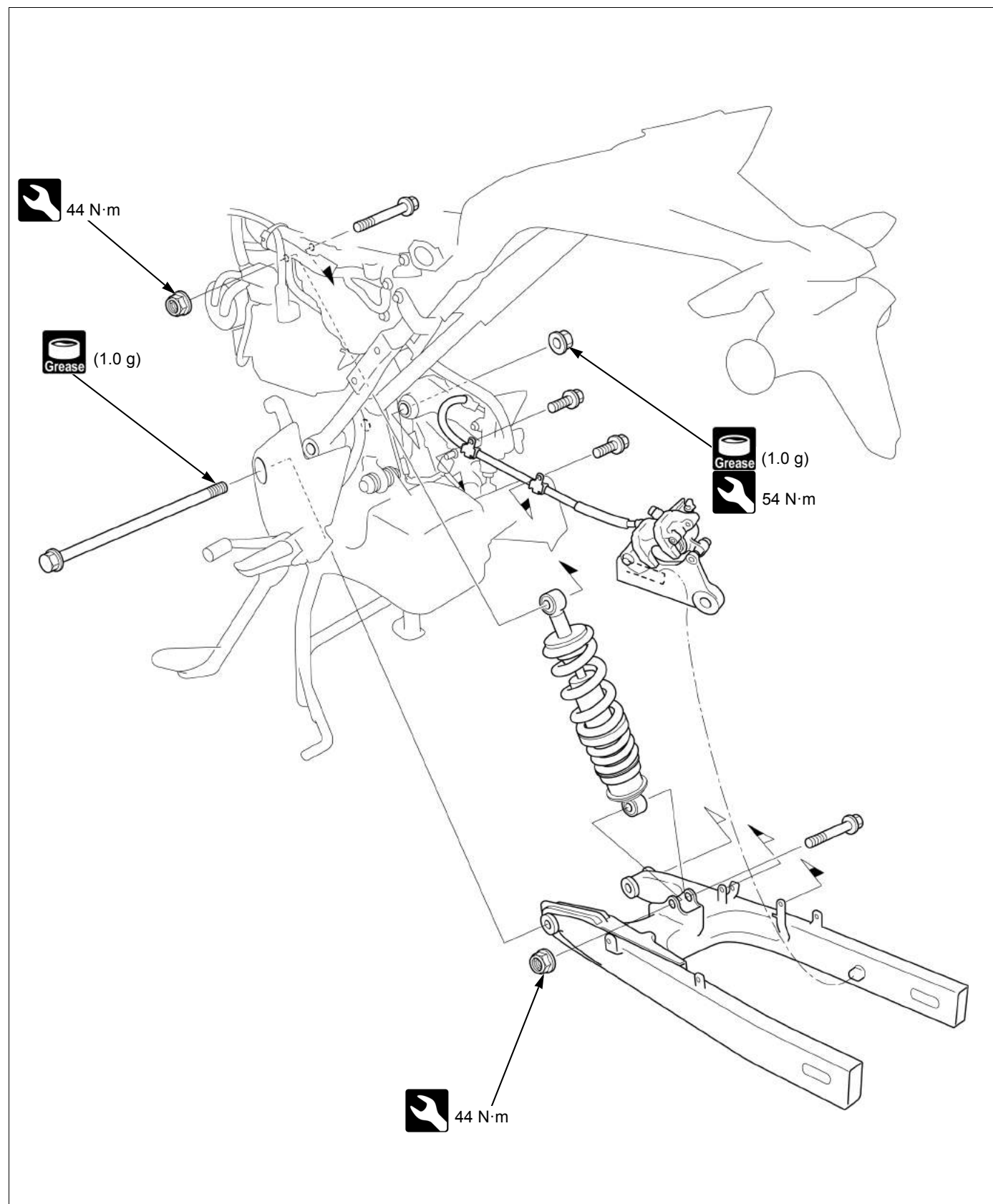


- Install the bearing remover head into the bearing. From the opposite side, install the bearing remover shaft and drive out the bearing from the wheel hub.
Remover head, 17 mm: 07746-0050500
Bearing remover shaft: 07746-0050100
- **[1] [3]** Drive in a new bearing squarely with its sealed side facing outside until it is fully seated.
Driver: 07749-0010000
Attachment, 40 x 42 mm: 07746-0010900
Pilot, 17 mm: 07746-0040400
- **[2]** Install the distance collar.
- **[4]** Drive in a new bearing squarely with its marked side facing outside until it is fully seated.
Driver: 07749-0010000
Attachment, 42 x 47 mm: 07746-0010300
Pilot, 20 mm: 07746-0040500
- Wheel disassembly and inspection





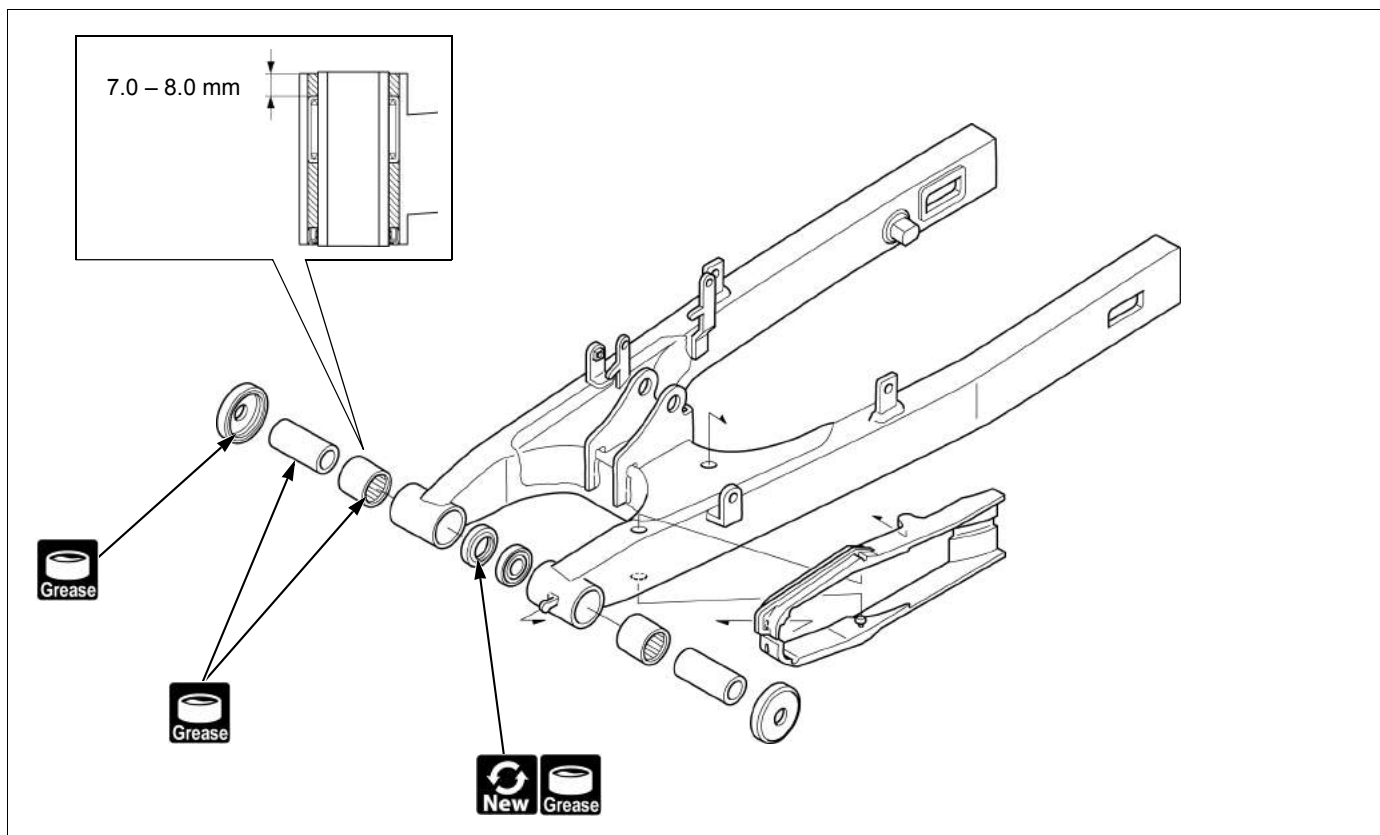
REAR SUSPENSION



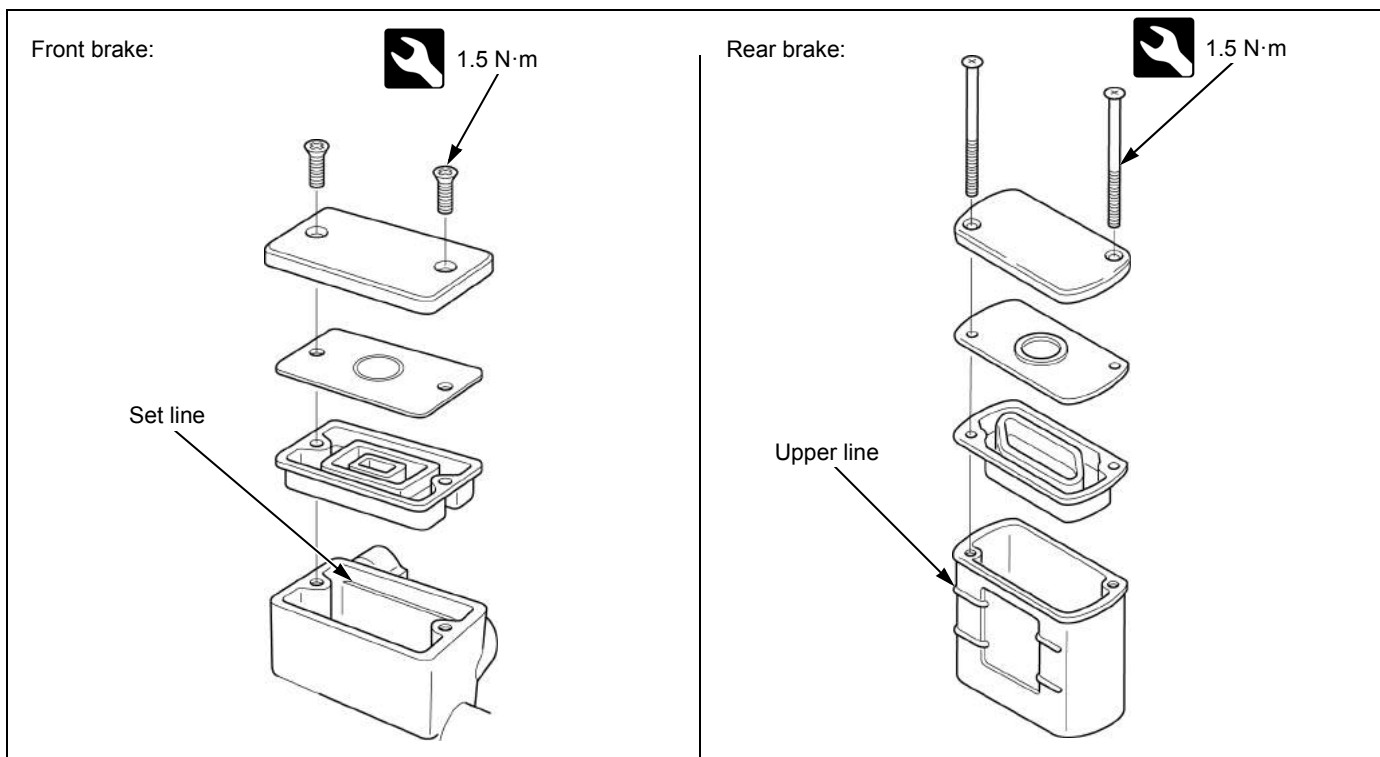
- Rear cowl → 3-5
- Drive chain cover → 3-11
- Rear wheel → 3-23



FRAME & CHASSIS



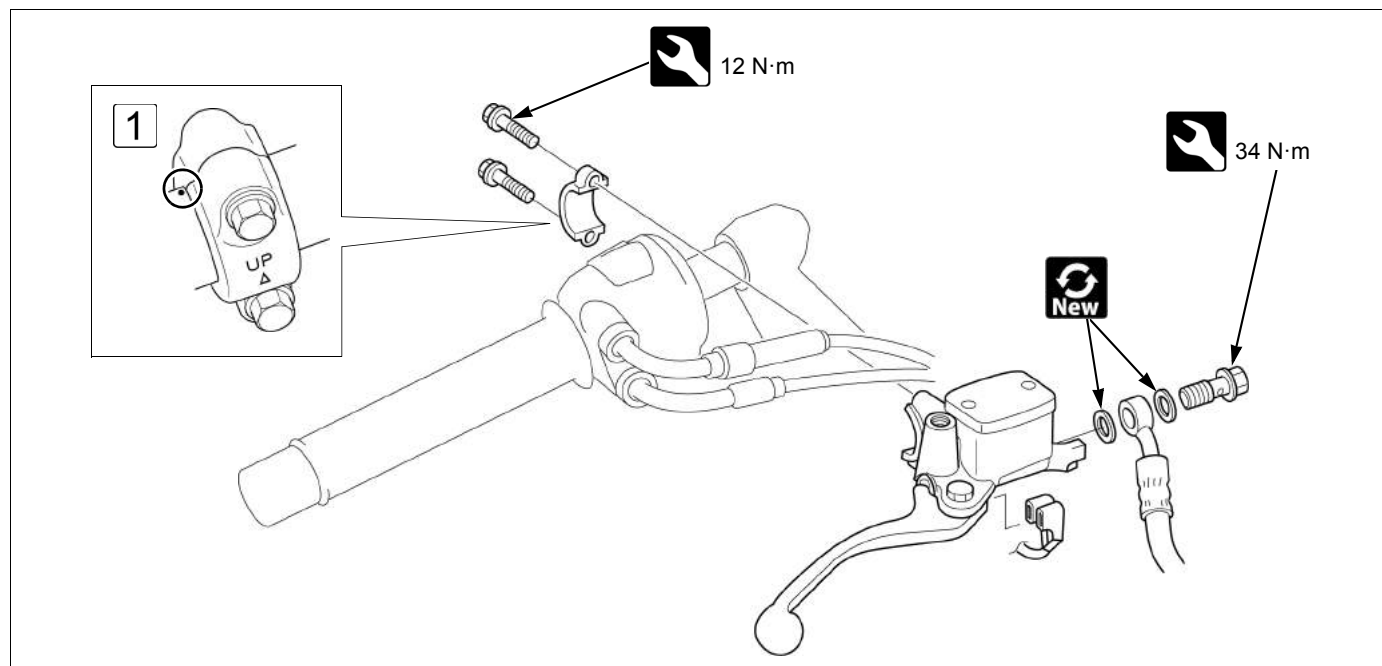
FRONT BRAKE BRAKE FLUID REPLACEMENT



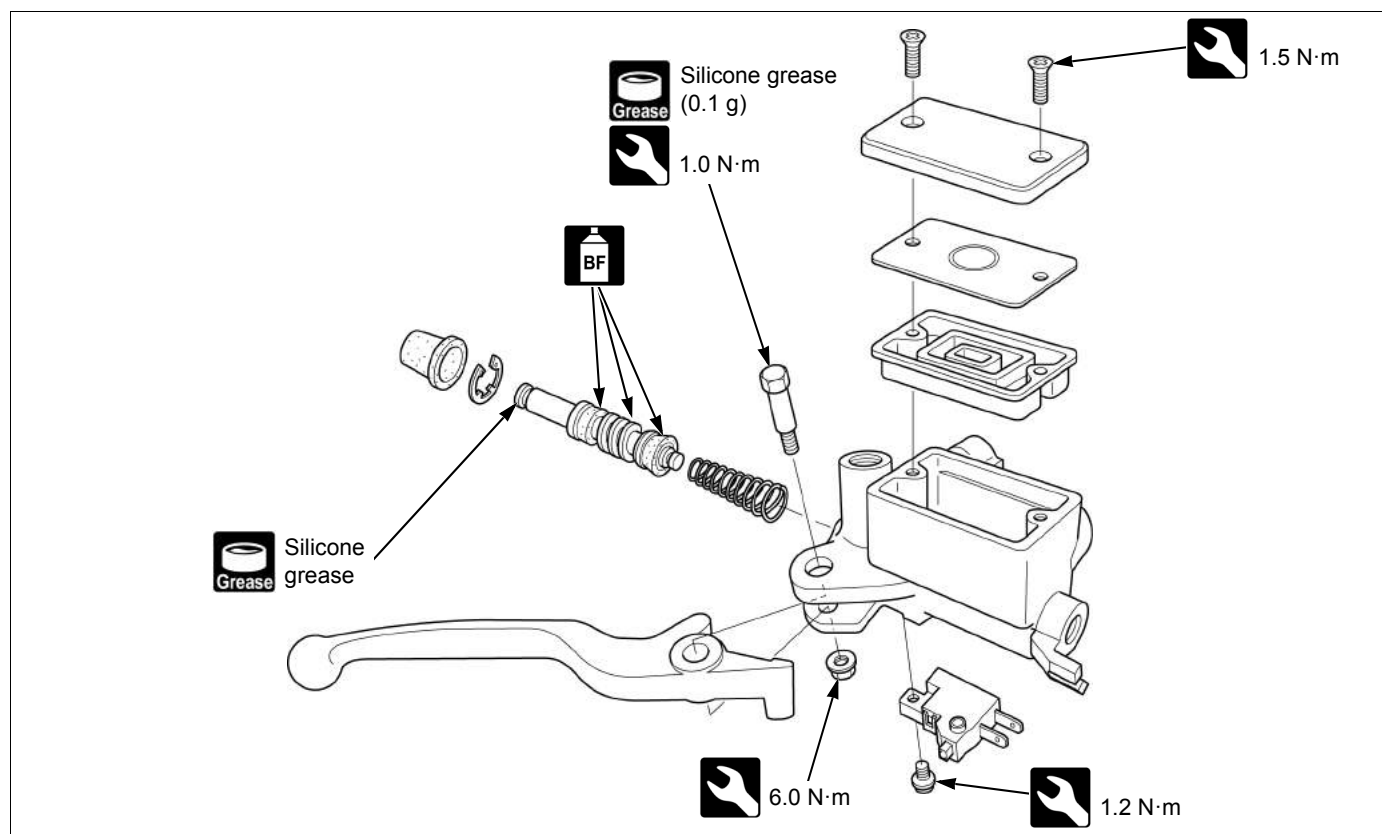
- Add the reservoir with brake fluid from a sealed container to the set line and upper line.
RECOMMENDED BRAKE FLUID: DOT 3 or DOT 4



BRAKE MASTER CYLINDER



- 1 Install the brake master cylinder and holder with the "UP" mark facing up. Align the edge of the master cylinder with the punch mark on the handlebar.



- Remove the snap ring.
Snap ring pliers: 07914-SA50001

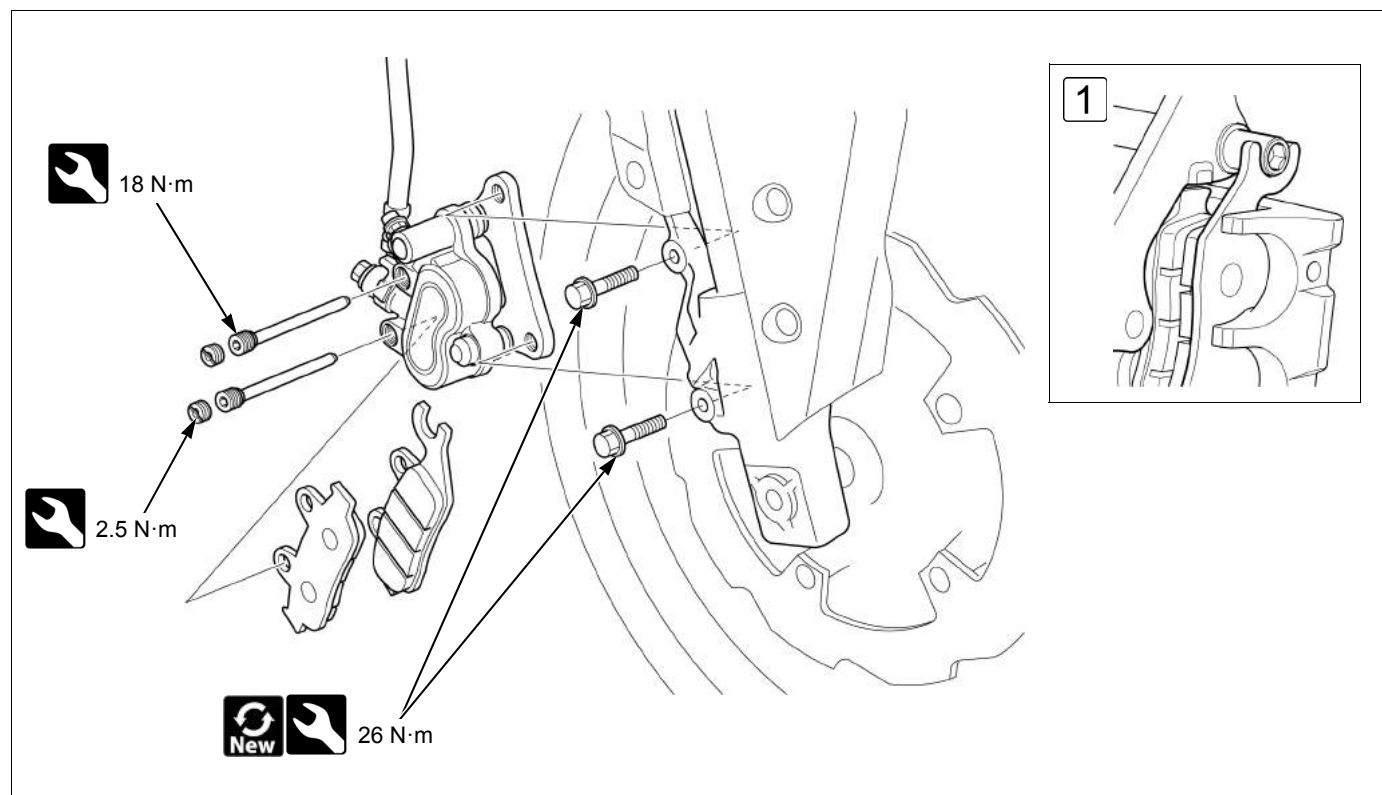


- Master cylinder inspection

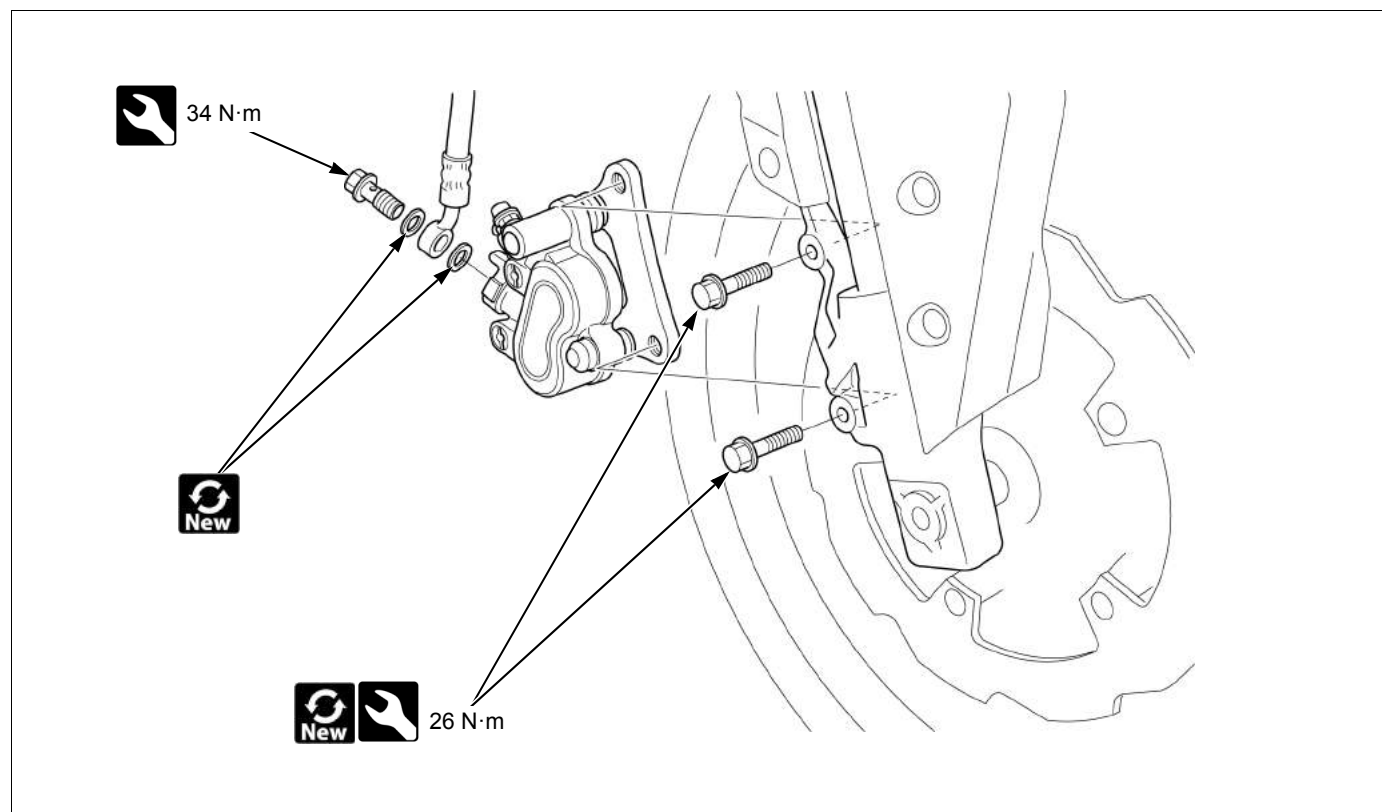


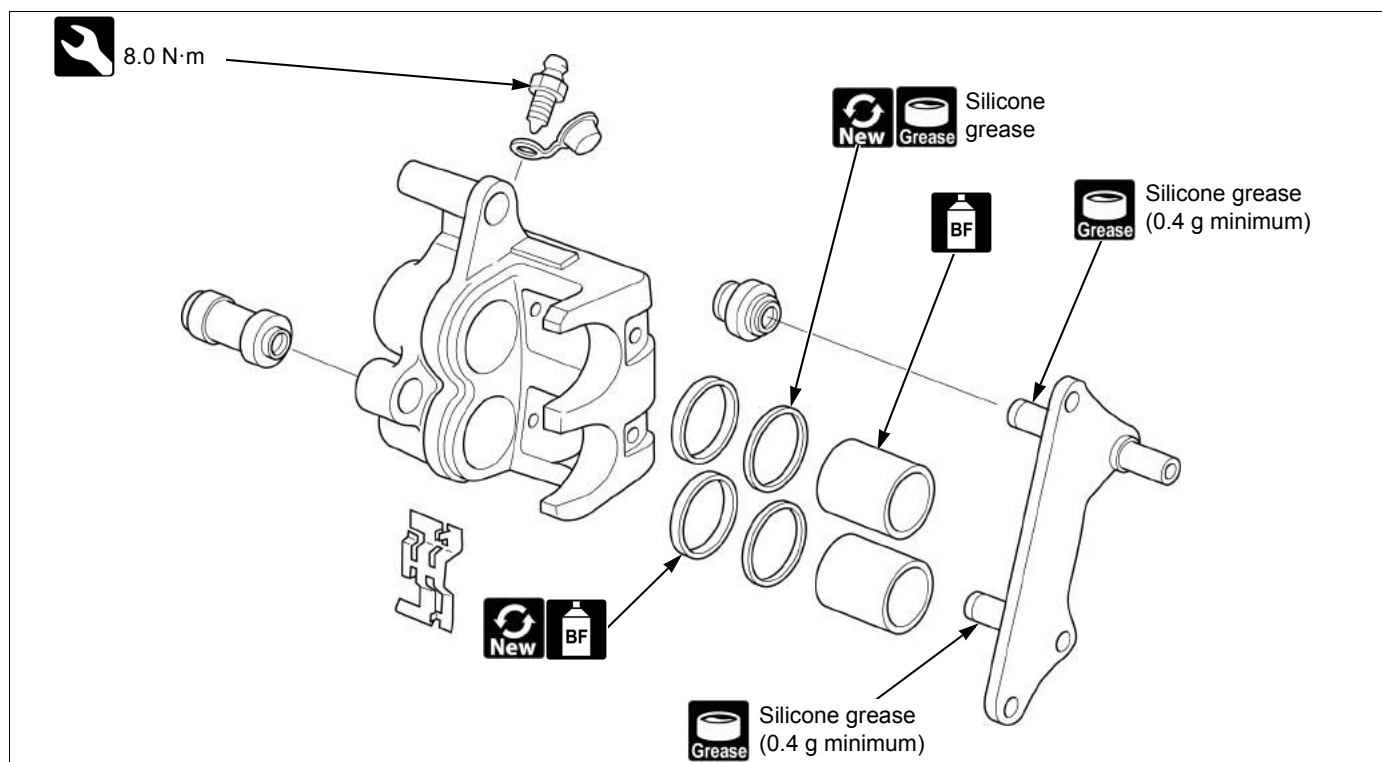
BRAKE CALIPER

BRAKE PAD REPLACEMENT



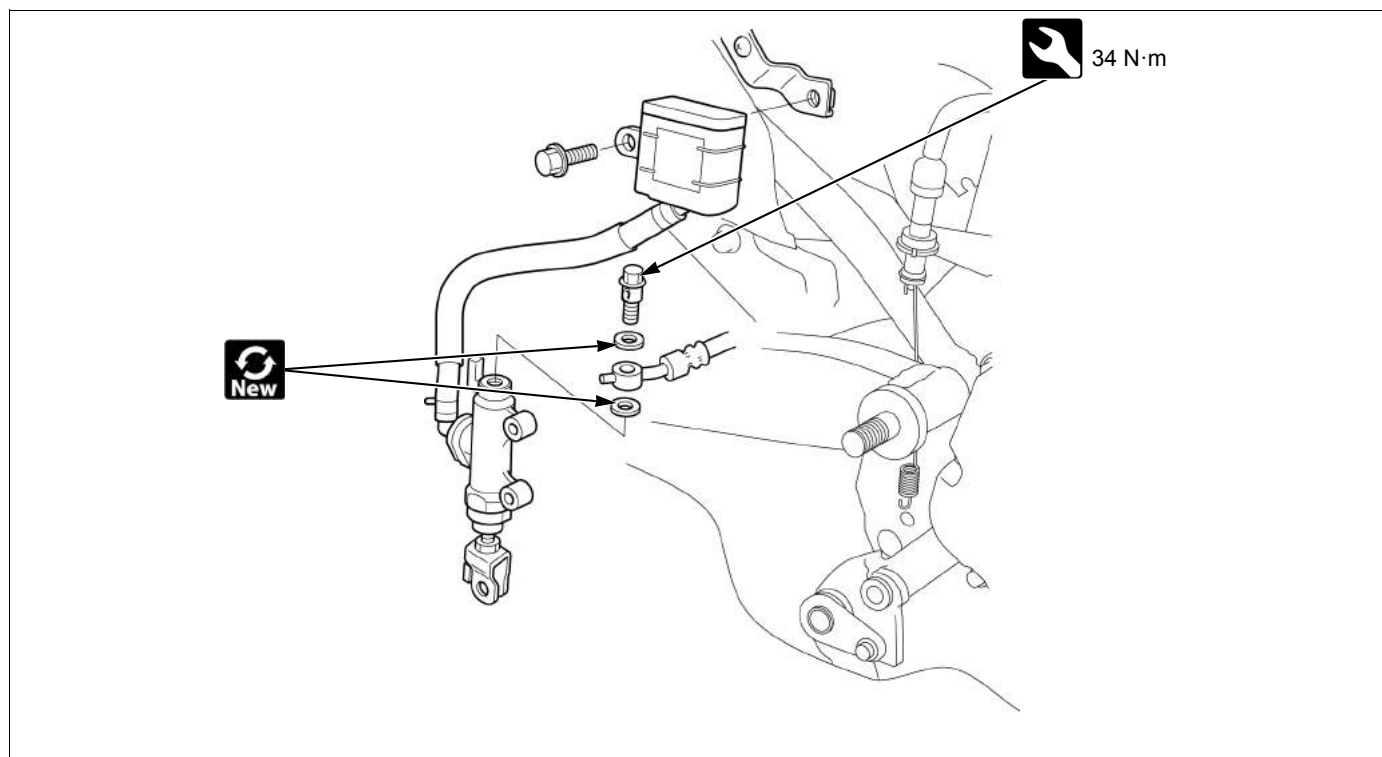
- 1 Install brake pads so that they are set on the brake caliper bracket and bracket pin.



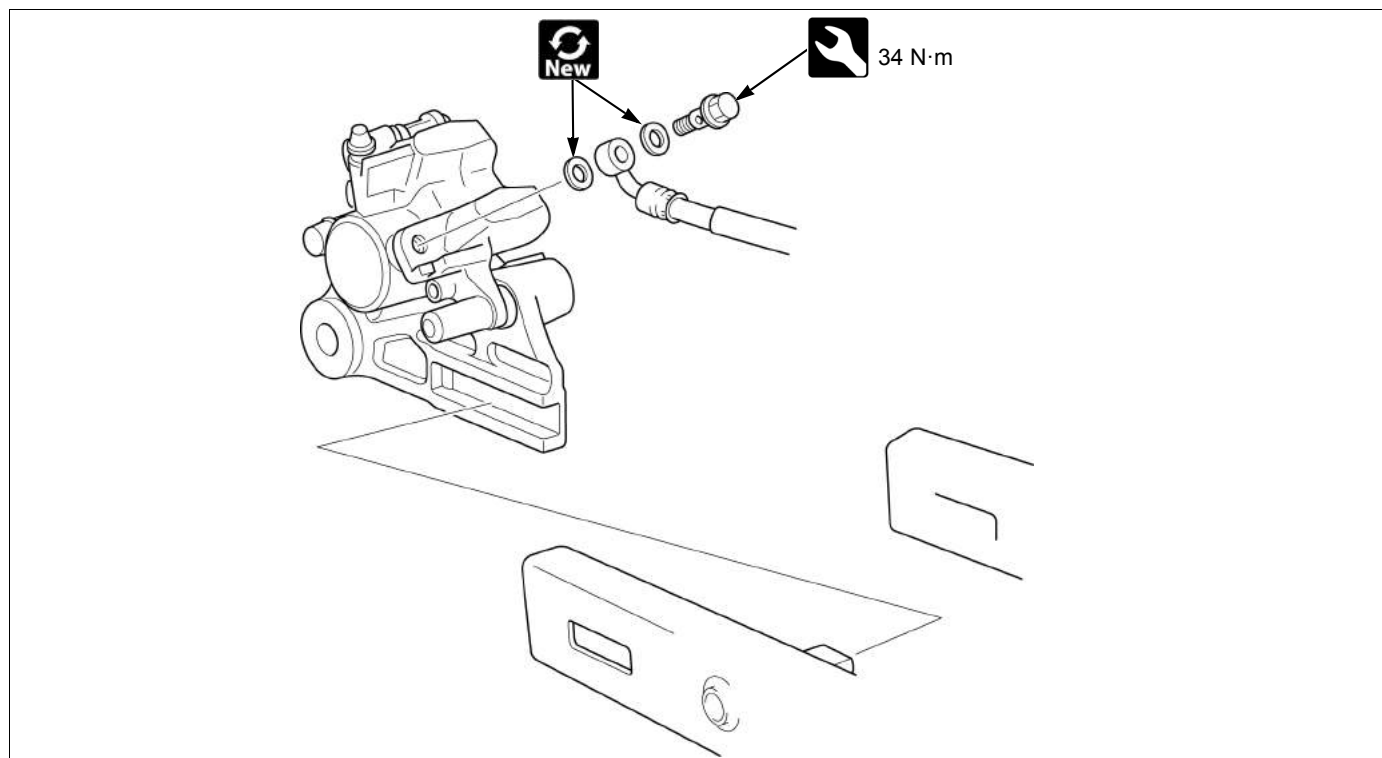


- Brake caliper inspection

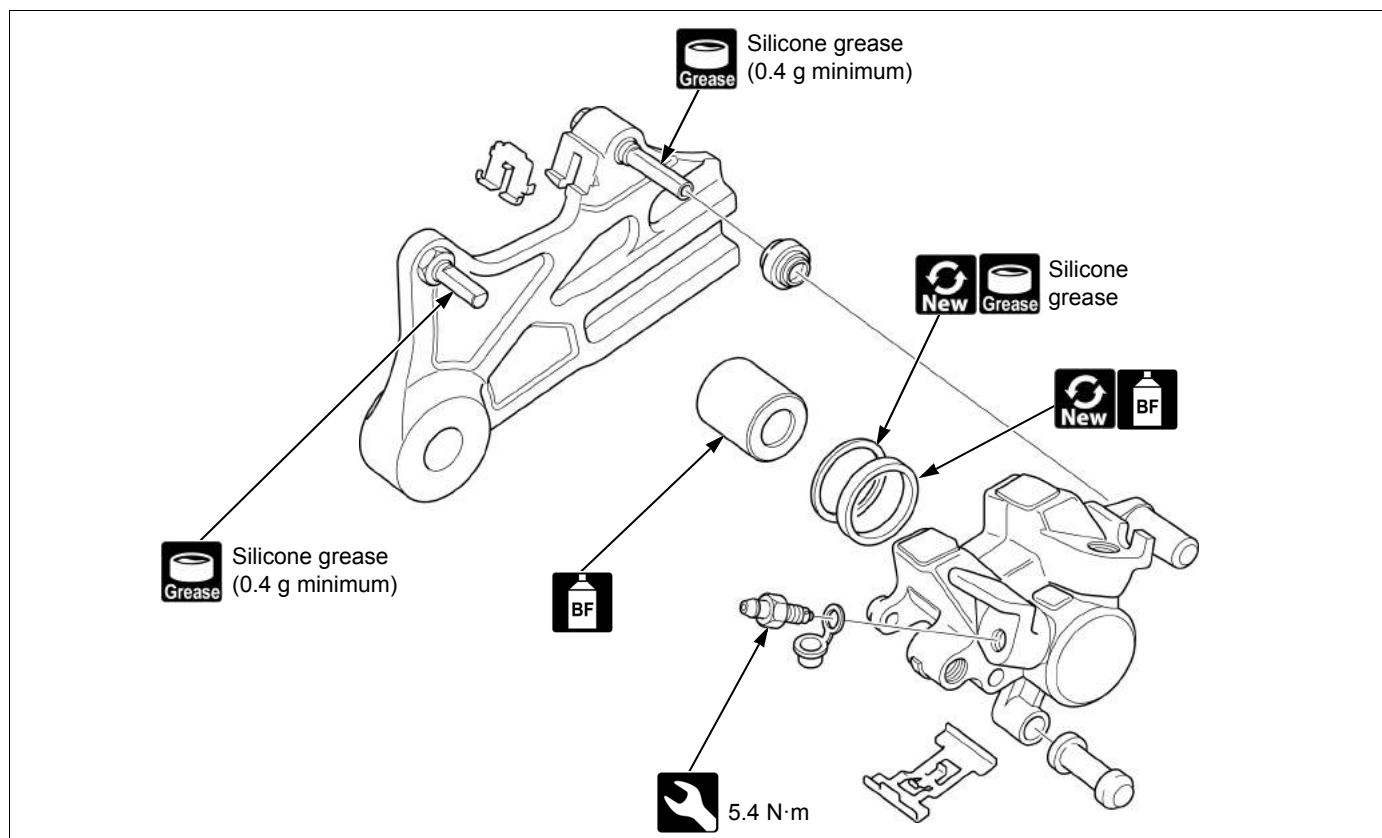
REAR BRAKE BRAKE MASTER CYLINDER



- Step holder → 3-12



• Rear wheel → 3-23

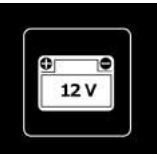


• Brake caliper inspection

MEMO

4. ELECTRICAL SYSTEM

PGM-FI SYSTEM	4-2	LIGHTING SYSTEM	4-28
IGNITION SYSTEM	4-21	SPEEDOMETER	4-34
ELECTRICAL STARTER	4-23	ELECTRICAL COMPONENT	4-38
BATTERY/CHARGING SYSTEM	4-27		





PGM-FI SYSTEM



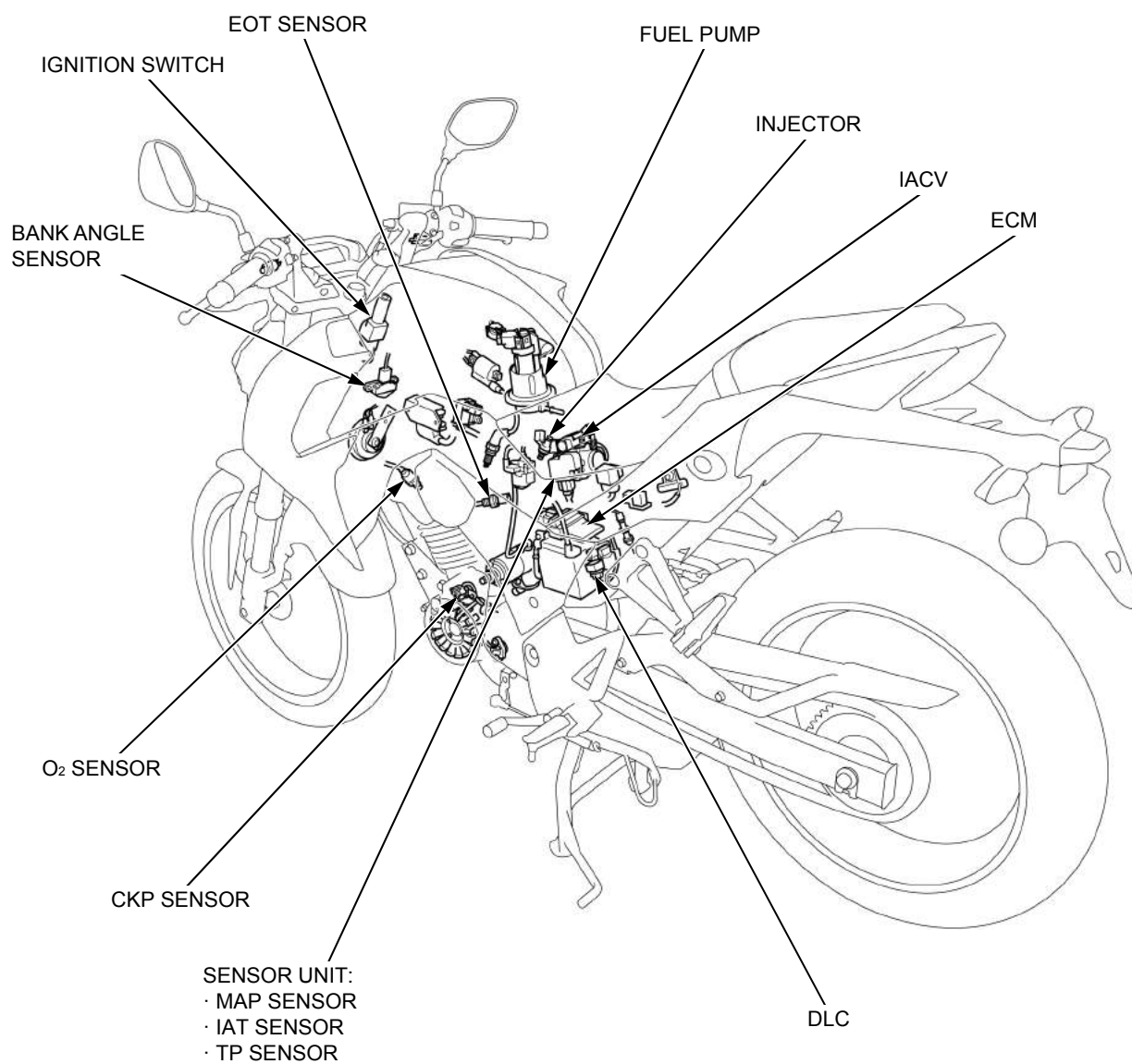
- Refer to "Basic Shop manual" for the following information.
 - PGM-FI technical feature and each sensor function.
 - Symptom troubleshooting for the PGM-FI system.
 - MCS (Motorcycle Communication System) information.

DTC CODE INDEX

DTC	Function Failure	Symptom/Fail-safe function	Page
1-1	MAP sensor malfunction • MAP sensor low voltage	• Engine operates normally	➔4-5
1-2	MAP sensor malfunction • MAP sensor high voltage	• Engine operates normally	➔4-6
7-1	EOT sensor malfunction • EOT sensor low voltage	• Hard start at a low temperature	➔4-7
7-2	EOT sensor malfunction • EOT sensor high voltage	• Hard start at a low temperature	➔4-8
8-1	TP sensor malfunction • TP sensor low voltage	• Poor engine acceleration	➔4-9
8-2	TP sensor malfunction • TP sensor high voltage	• Poor engine acceleration	➔4-10
9-1	IAT sensor malfunction • IAT sensor low voltage	• Engine operates normally	➔4-11
9-2	IAT sensor malfunction • IAT sensor high voltage	• Engine operates normally	➔4-12
12-1	Injector malfunction	• Engine does not start • Injector, fuel pump and ignition coil shut down	➔4-13
21-1	O ₂ sensor malfunction	• Engine operates normally	➔4-14
29-1	IACV malfunction	• Engine stalls, hard to start, rough idling	➔4-15
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	➔4-16
54-1	Bank angle sensor malfunction • Bank angle sensor low voltage	• Engine operates normally • Engine stop function does not operate	➔4-17
54-2	Bank angle sensor malfunction • Bank angle sensor high voltage	• Engine operates normally • Engine stop function does not operate	➔4-18



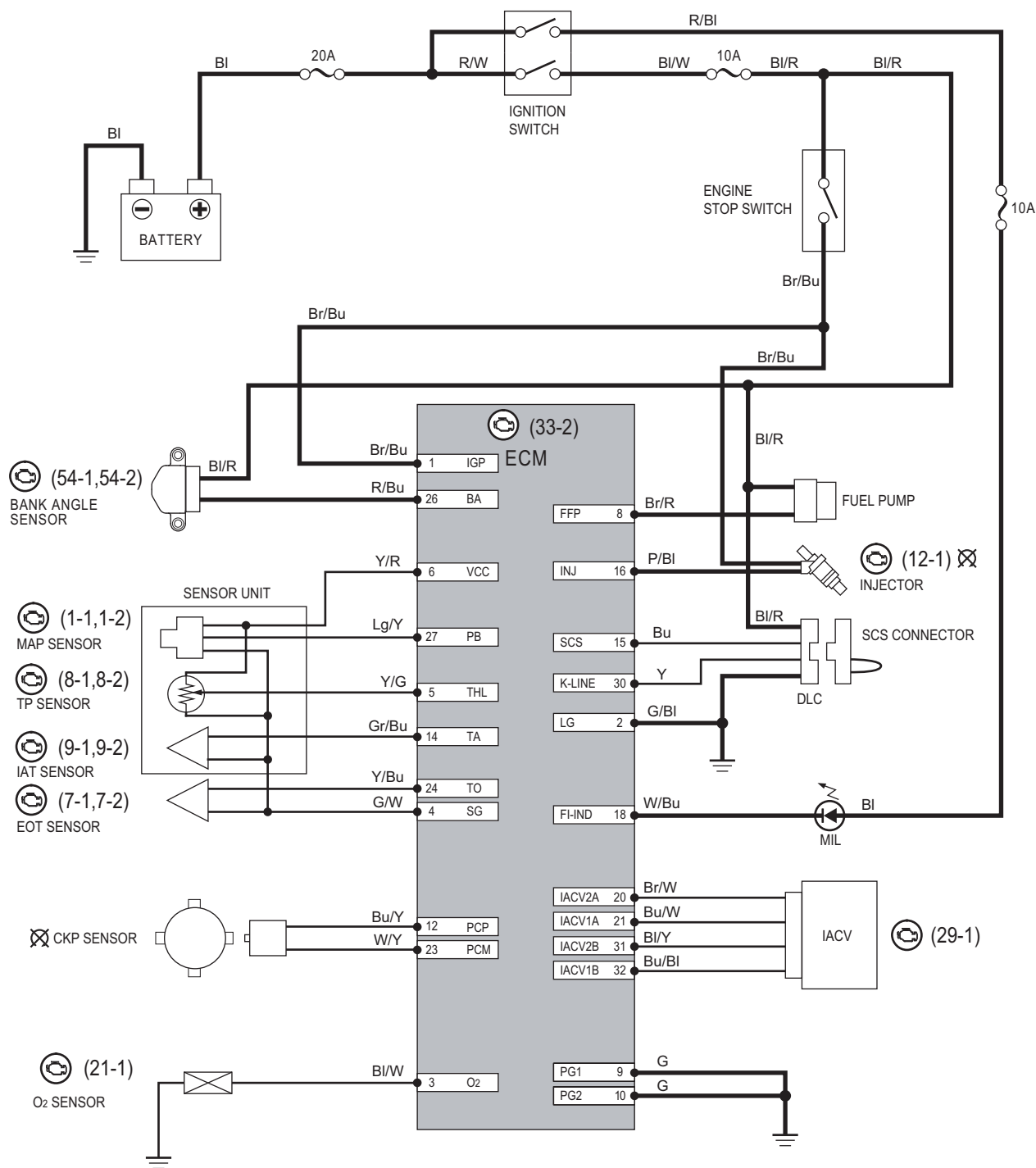
PGM-FI SYSTEM LOCATION





ELECTRICAL SYSTEM

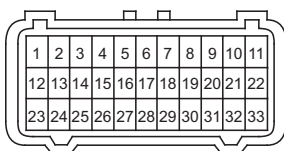
PGM-FI SYSTEM DIAGRAM



() : DTC

⊗ : Engine does not start when detecting DTC

⏏ : Short terminals for reading DTC



ECM 33P CONNECTOR
(ECM side of the male terminals)



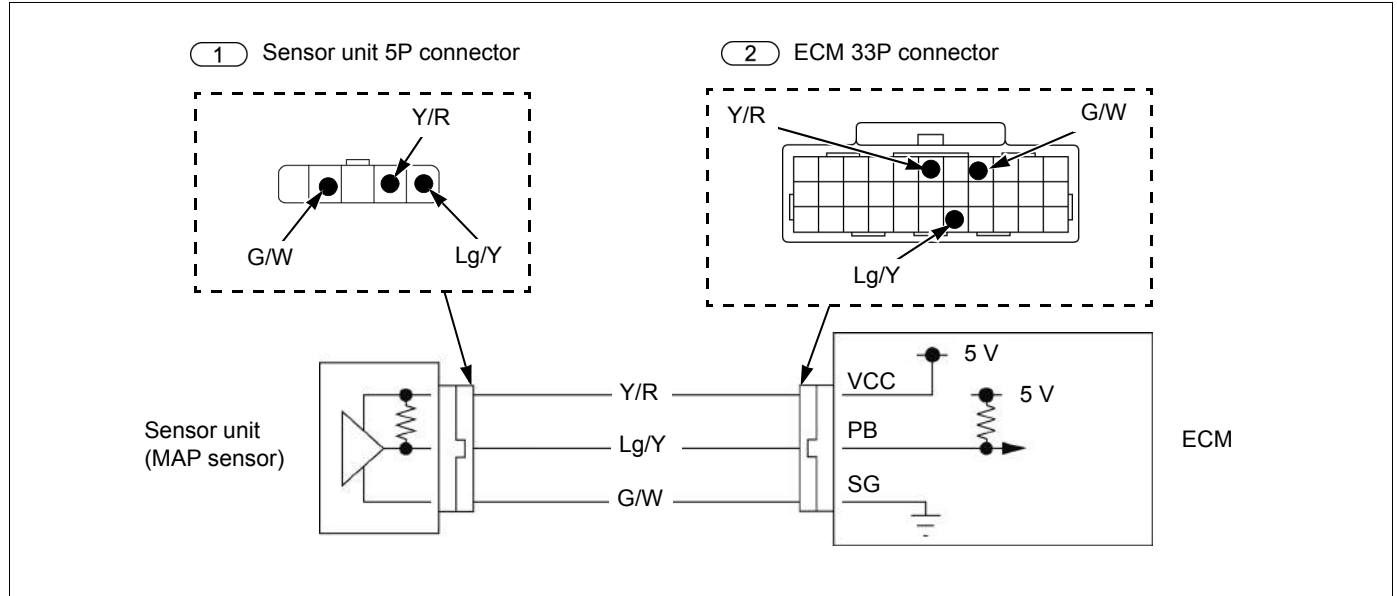
DTC TROUBLESHOOTING

DTC 1-1 (MAP SENSOR LOW VOLTAGE)



- Fuel tank shroud → 3-6

MAP Sensor Diagram



1. MAP Sensor System Inspection

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

Yes ▼

No
►

- Intermittent failure
- Loose or poor contact at the connector

2. Sensor unit Power Input Voltage Inspection



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

Yes ▼

No
►

- Open or short circuit in Y/R wire
- If there is no open or short circuit, replace the ECM with a new one → 4-19, and recheck.

3. MAP Sensor Output Voltage Inspection



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

No ▼

Yes
►

- Replace the sensor unit (MAP sensor) with a new one → 2-8, and recheck.

4. MAP Sensor Output Line Inspection

- Check a short circuit in Lg/Y wire.
- If there is no short circuit, replace the ECM with a new one → 4-19, and recheck.



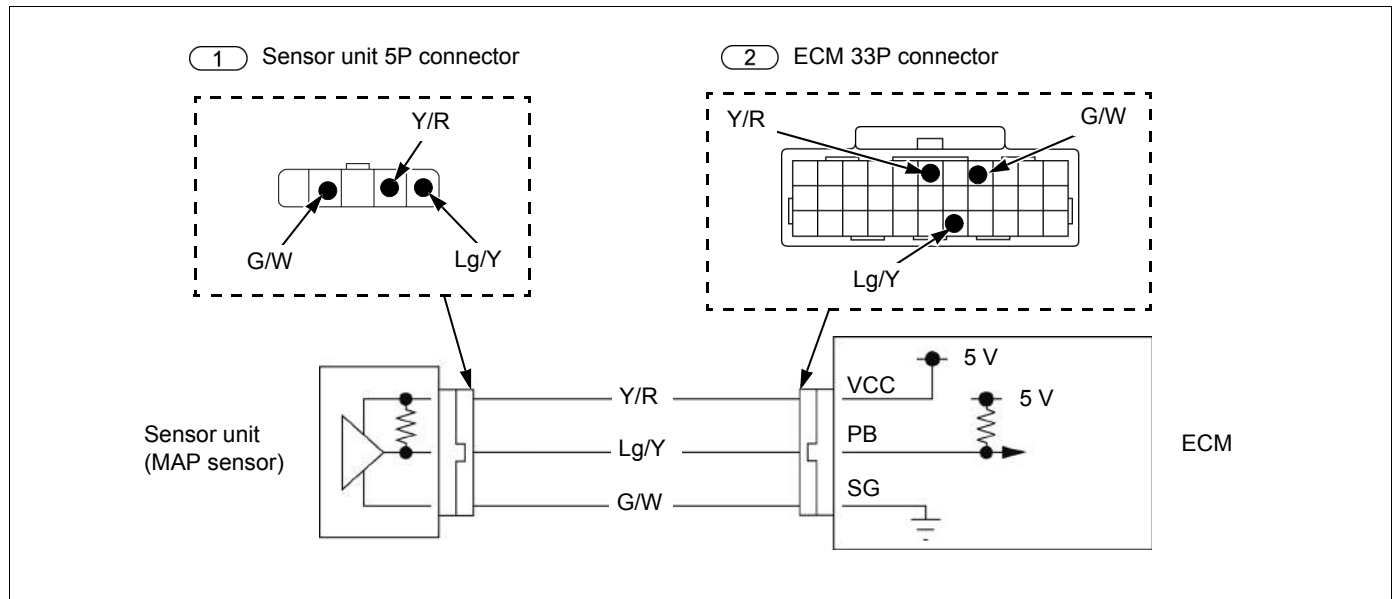
ELECTRICAL SYSTEM

DTC 1-2 (MAP SENSOR HIGH VOLTAGE)



- Fuel tank shroud → 3-6

MAP Sensor Diagram



1. MAP Sensor System Inspection

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

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 MCS.
- Is the voltage about 0 V indicated?

Yes

- Replace the sensor unit (MAP sensor) with a new one → 2-8, and recheck.

No ▼

3. MAP Sensor Output Line Inspection

- Check an open circuit in Lg/Y and G/W wire.
- If there is no open circuit, replace the ECM with a new one → 4-19, and recheck.

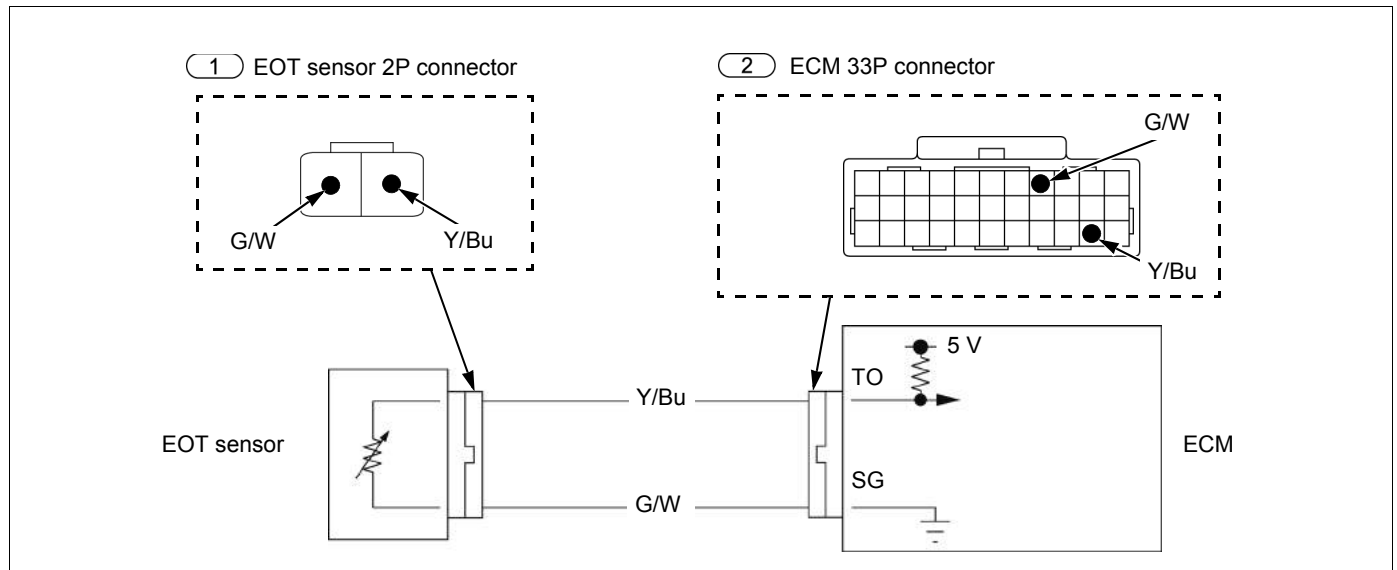


DTC 7-1 (EOT SENSOR LOW VOLTAGE)



- Fuel tank shroud → 3-6

EOT Sensor Diagram



1. EOT Sensor System Inspection

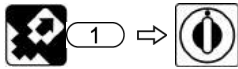
- Check the EOT sensor voltage with MCS.
- Is the voltage about 0 V indicated?

No
►

- Intermittent failure
- Loose or poor contact at the connector

Yes ▼

2. EOT Sensor Inspection



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

No
►

- Replace the EOT sensor with a new one → 4-19, and recheck.

Yes ▼

3. EOT 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 → 4-19, and recheck.



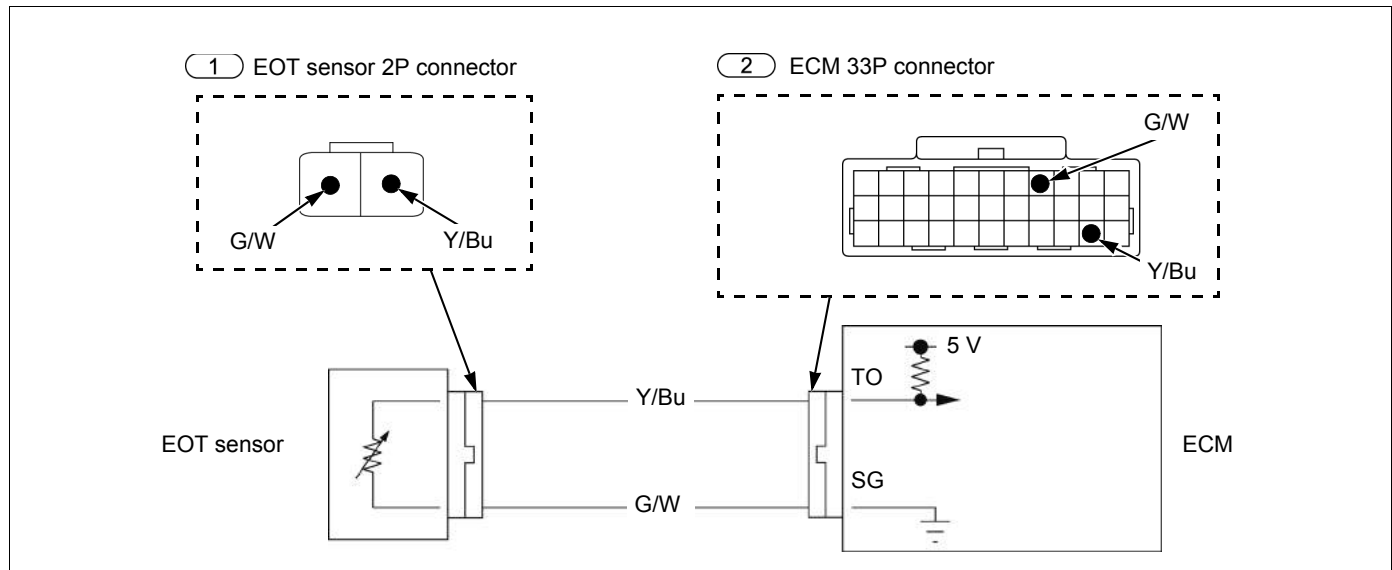
ELECTRICAL SYSTEM

DTC 7-2 (EOT SENSOR HIGH VOLTAGE)



- Fuel tank shroud →3-6

EOT Sensor Diagram



1. EOT Sensor System Inspection

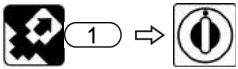
- Check the EOT sensor voltage with MCS.
- Is the voltage about 5 V indicated?

No
►

- Intermittent failure
- Loose or poor contact at the connector

Yes ▼

2. EOT Sensor Inspection



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

Yes
►

- Replace the EOT sensor with a new one →4-19, and recheck.

No ▼

3. EOT Sensor Output Line Inspection

- Check an open circuit in Y/Bu and G/W wire.
- If there is no open circuit, replace the ECM with a new one →4-19, and recheck.

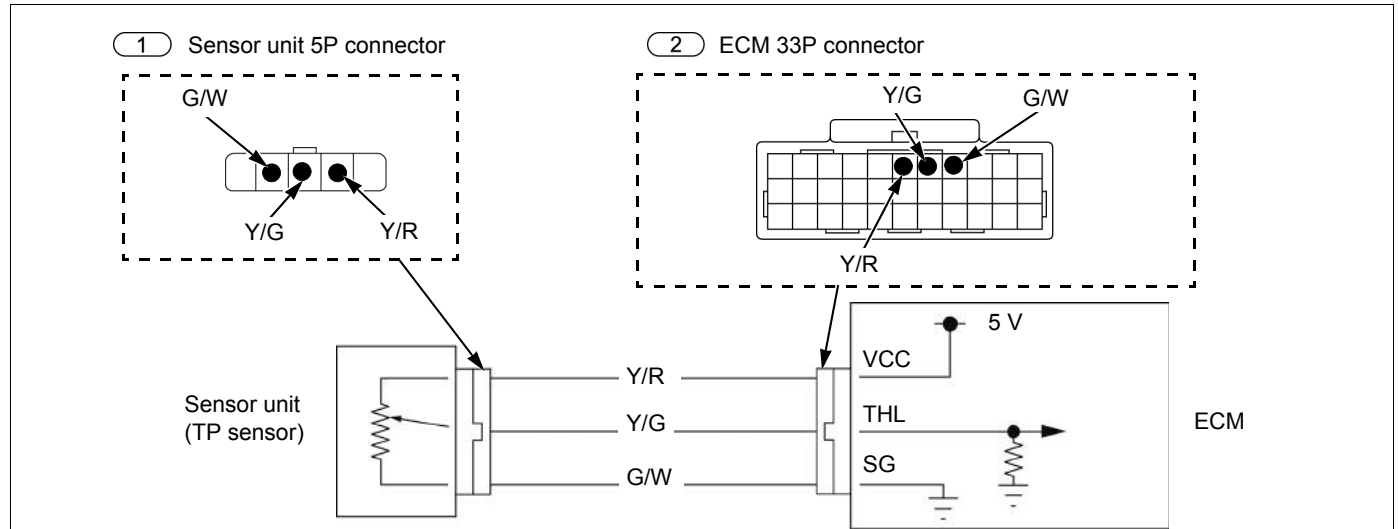


DTC 8-1 (TP SENSOR LOW VOLTAGE)



- Fuel tank shroud → 3-6

TP Sensor Diagram



1. TP Sensor System Inspection

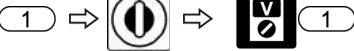
- Check the TP sensor voltage with MCS.
- Is the voltage about 0 V indicated?

No
►

- Intermittent failure
- Loose or poor contact at the connector

Yes ▼

2. Sensor unit Power Input Voltage Inspection



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

No
►

- Open or short circuit in Y/R wire
- If there is no open or short circuit, replace the ECM with a new one → 4-19, and recheck.

Yes ▼

3. TP Sensor Output Line Inspection

- Check a open or short circuit in Y/G wire.
- Is there open or short circuit?

Yes
►

- Faulty Y/G wire

No ▼

4. TP Sensor Inspection

- Replace the sensor unit (TP sensor) with a new one → 2-8
- Erase the DTC's.
- Check the TP sensor with MCS.
- If DTC 8-1 is indicated, replace the ECM with a new one → 4-19, and recheck.



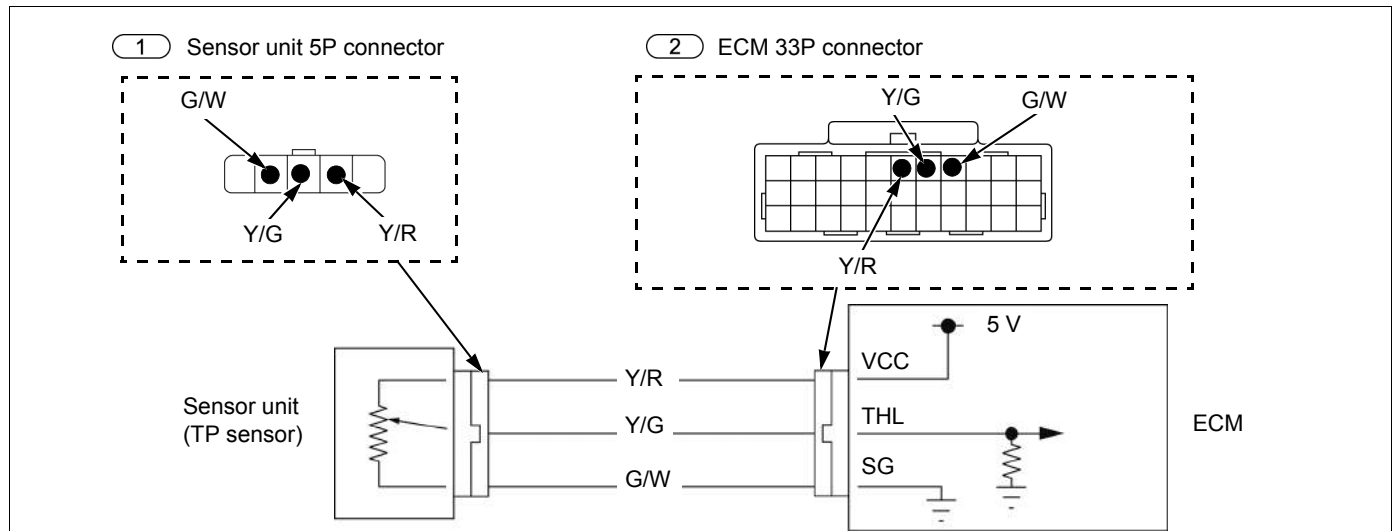
ELECTRICAL SYSTEM

DTC 8-2 (TP SENSOR HIGH VOLTAGE)



- Fuel tank shroud →3-6

TP Sensor Diagram



1. TP Sensor System Inspection

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

No
▶

- Check the TP sensor voltage with MCS.
- Operate the throttle from fully closed to fully opened.
- If the voltage is not increase continuously, replace the sensor unit (TP sensor) with a new one →2-8, and recheck.

Yes ▼

2. TP Sensor Ground Line Inspection

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

No
▶

- Faulty G/W wire

Yes ▼

3. TP Sensor Inspection

- Replace the sensor unit (TP sensor) with a new one →2-8
- Erase the DTC's.
- Check the TP sensor with MCS.
- If DTC 8-2 is indicated, replace the ECM with a new one →4-19, and recheck.

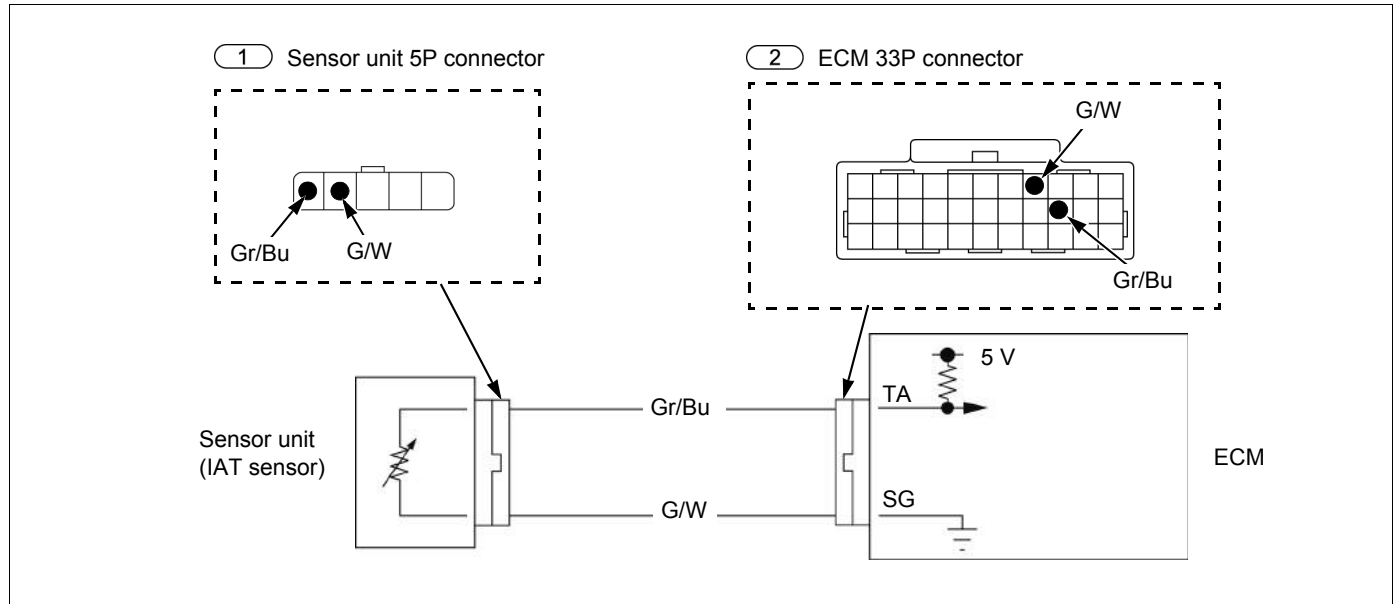


DTC 9-1 (IAT SENSOR LOW VOLTAGE)



- Fuel tank shroud → 3-6

IAT Sensor Diagram



1. IAT Sensor System Inspection

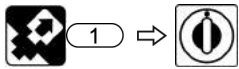
- Check the IAT sensor voltage with MCS.
- Is the voltage about 0 V indicated?

Yes ▼

No
►

- Intermittent failure
- Loose or poor contact at the connector

2. IAT Sensor Inspection



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

Yes ▼

No
►

- Replace the sensor unit (IAT sensor) with a new one → 2-8, and recheck.

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 → 4-19, and recheck.



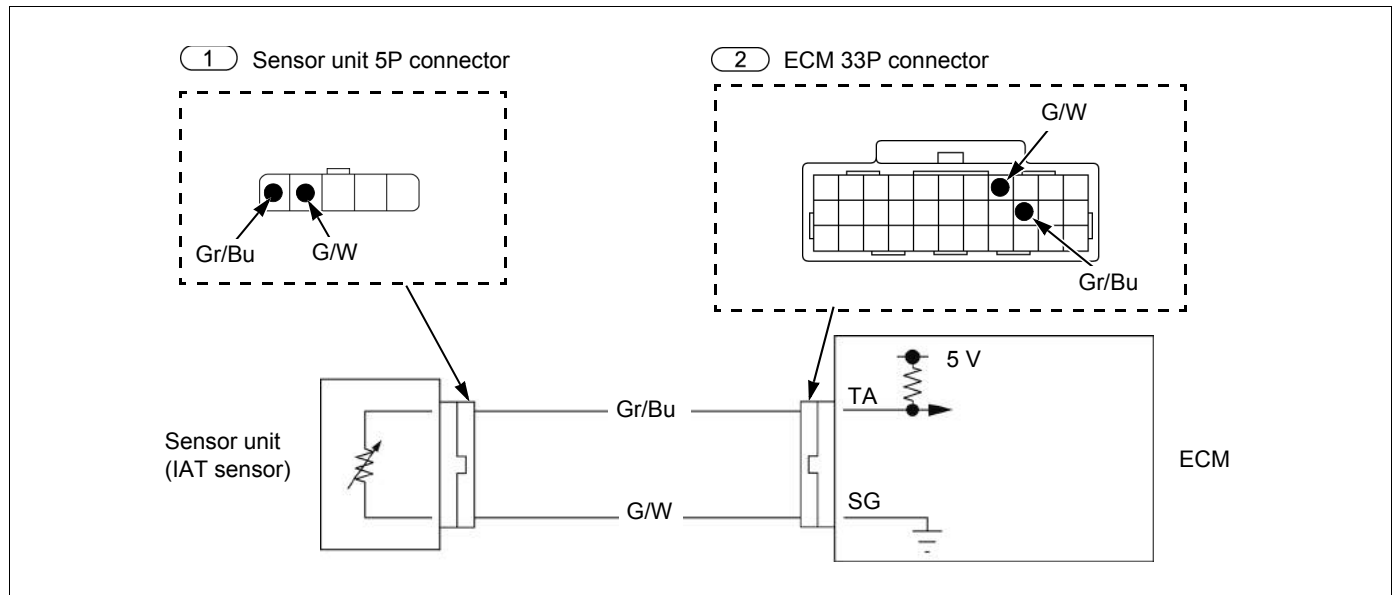
ELECTRICAL SYSTEM

DTC 9-2 (IAT SENSOR HIGH VOLTAGE)



- Fuel tank shroud → 3-6

IAT Sensor Diagram



1. IAT Sensor System Inspection

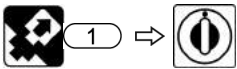
- Check the IAT sensor voltage with MCS.
- Is the voltage about 5 V indicated?

No
▶

- Intermittent failure
- Loose or poor contact at the connector

Yes ▼

2. IAT sensor Inspection



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

Yes
▶

- Replace the sensor unit (IAT sensor) with a new one → 2-8, and recheck.

No ▼

3. IAT Sensor Voltage Input Line Inspection

- Check an open circuit in Gr/Bu and G/W wire.
- If there is no open circuit, replace the ECM with a new one → 4-19, and recheck.

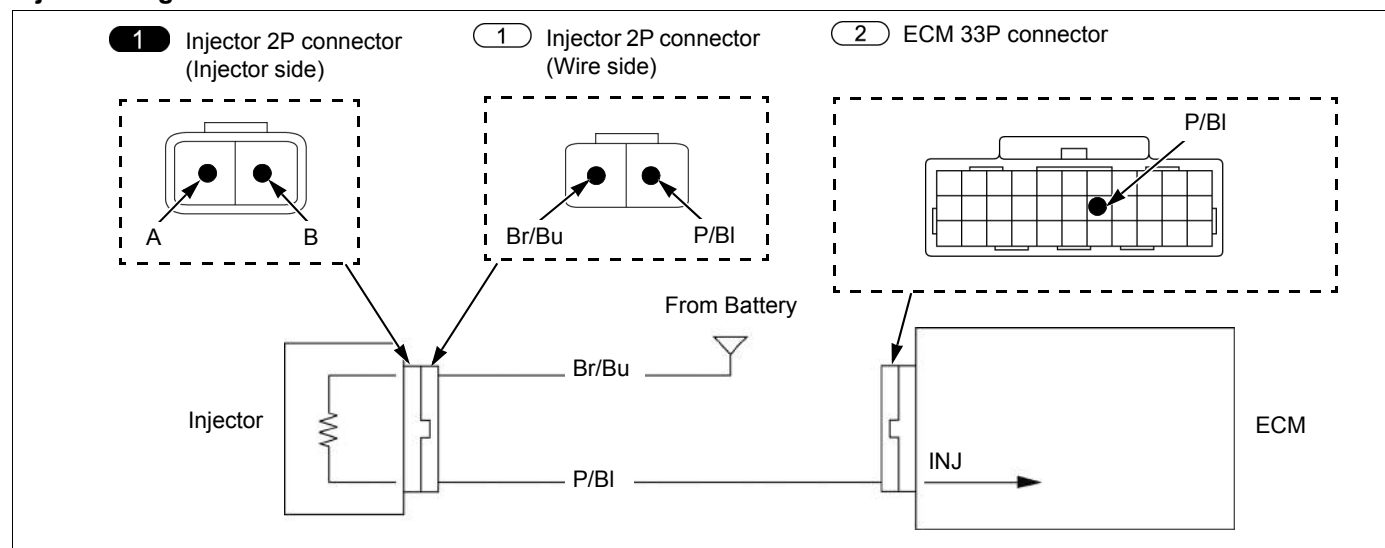


DTC 12-1 (INJECTOR)



- Fuel tank shroud → 3-6

Injector Diagram



1. Fuel Injector System Inspection

- Check the fuel injector with MCS.
- Is the DTC 12-1 is indicated?

No
►

- Intermittent failure
- Loose or poor contact at the connector

Yes ▼

2. Fuel Injector Input Voltage Inspection



1



1

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

No
►

- Open circuit in Br/Bu wire

Yes ▼

3. Fuel Injector Signal Line Inspection

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

Yes
►

- Faulty P/W wire

No ▼

4. Fuel Injector Resistance inspection



1

- Connection: A – B
- Is the resistance within 11 – 13 Ω (24 °C)?

No
►

- Faulty fuel injector

Yes ▼

- Replace the ECM with a new one → 4-19, and re-check.



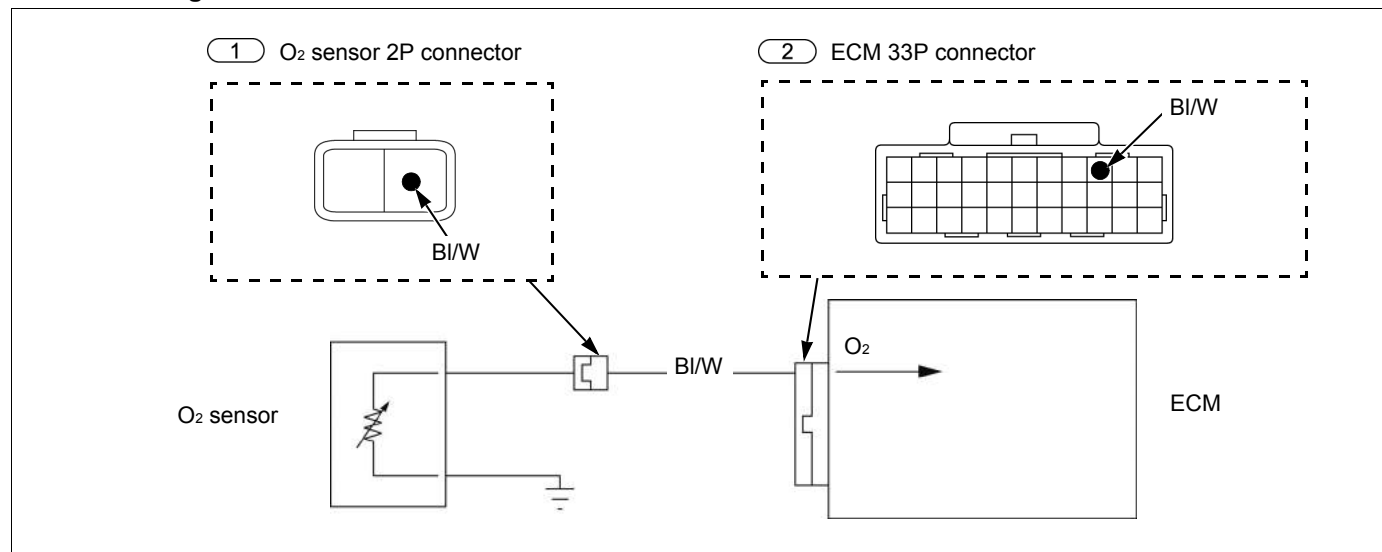
ELECTRICAL SYSTEM

DTC 21-1 (O₂ SENSOR)



- Fuel tank shroud →3-6

O₂ Sensor Diagram



1. O₂ Sensor System Inspection

- Test-ride the vehicle and check the O₂ sensor with MCS.
- Is the DTC 21-1 is indicated?

No
▶

- Intermittent failure
- Loose or poor contact at the connector

Yes ▼

2. O₂ Sensor Circuit Inspection

- Check an open or short circuit in BI/W wire.
- Is there open or short circuit?

Yes
▶

- Faulty BI/W wire

No ▼

3. O₂ Sensor Inspection

- Replace the O₂ sensor with a new one. →4-20
- Erase the DTC's.
- Test-ride the vehicle and check the O₂ sensor with MCS.
- If DTC 21-1 is indicated, replace the ECM with a new one →4-19, and recheck.

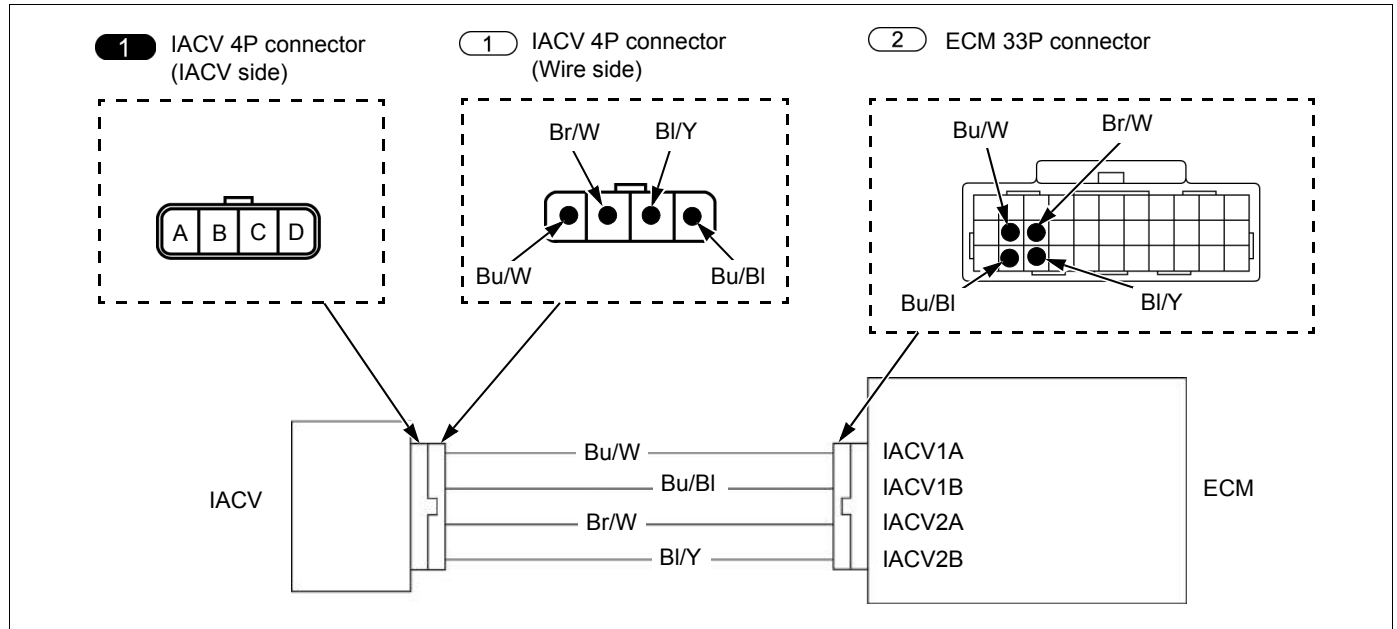


DTC 29-1 (IACV)



- Fuel tank shroud → 3-6

IACV Diagram



1. IACV System Inspection

- Check the IACV with MCS.
- Is the DTC 29-1 indicated?

No
▶

- Intermittent failure
- Loose or poor contact at the connector

Yes ▼

2. IACV Circuit Inspection

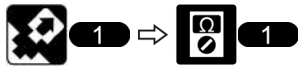
- Check a open or short circuit in Bu/W, Br/W, BI/Y and Bu/BI wires.
- Is there open or short circuit?

Yes
▶

- Faulty Bu/W, Br/W, BI/Y or Bu/BI wire

No ▼

3. IACV Resistance Inspection



- Connection: A – D, B – C
- Is the resistance within 110 – 150 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 → 4-19, and re-check.



ELECTRICAL SYSTEM

DTC 33-2 (EEPROM)

1. EEPROM System Inspection

- Check the EEPROM with MCS.
- Is the DTC 33-2 is indicated?

Yes ▼

- Replace the ECM with a new one. →4-19, and re-check.

No
▶

- Intermittent failure
- Loose or poor contact at the connector

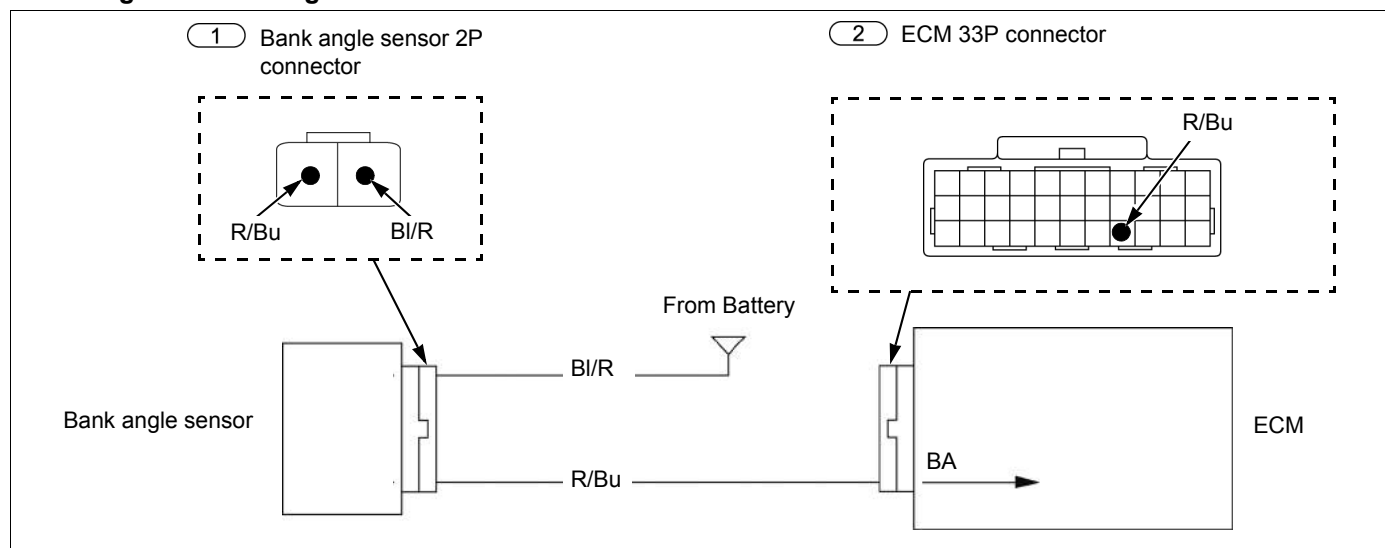


DTC 54-1 (BANK ANGLE SENSOR LOW VOLTAGE)



- Fuel tank shroud → 3-6

Bank Angle Sensor Diagram



1. Bank Angle Sensor System Inspection

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

No
►

- Intermittent failure
- Loose or poor contact at the connector

Yes ▼

2. Bank Angle Sensor Power Input Voltage Inspection



- Connection: BI/R (+) – Ground (–)
- Does the battery voltage exist?

No
►

- Faulty BI/R wire

Yes ▼

3. Bank Angle Sensor Output Line Inspection

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

Yes
►

- Faulty R/Bu wire

No ▼

4. Bank Angle Sensor Inspection

- Replace the bank angle sensor with a new one.
→ 4-20
- Erase the DTC's.
- Check the bank angle sensor with MCS.
- If DTC 54-1 is indicated, replace the ECM with a new one → 4-19, and recheck.



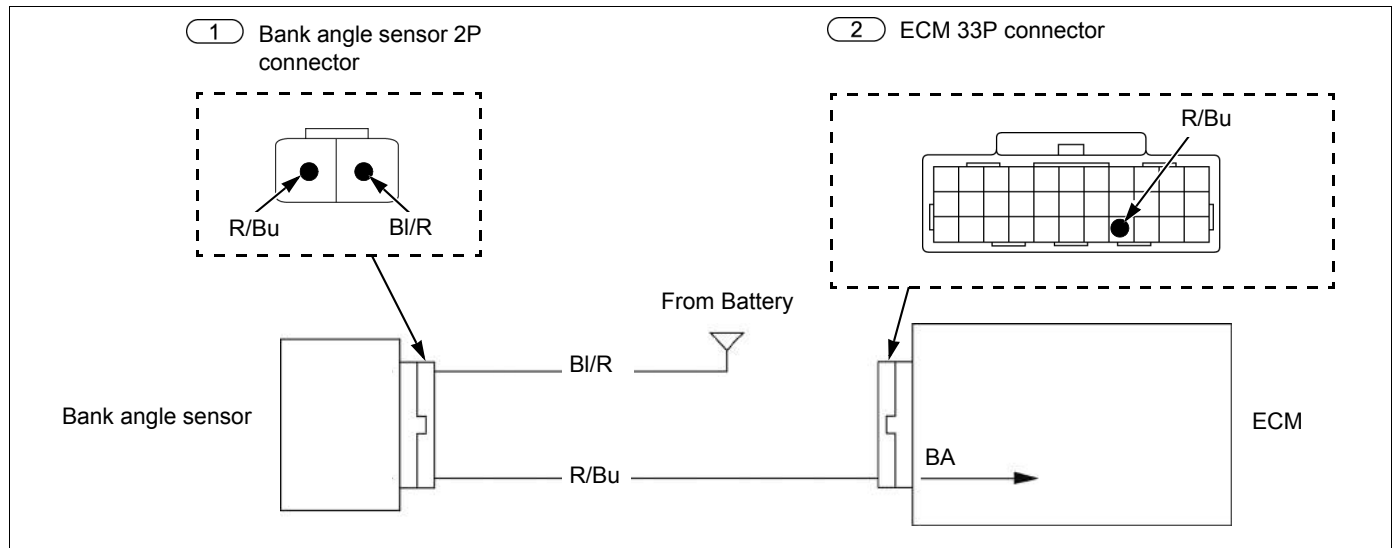
ELECTRICAL SYSTEM

DTC 54-2 (BANK ANGLE SENSOR HIGH VOLTAGE)



- Bank angle sensor (Connector is connected.) →4-20

Bank Angle Sensor Diagram



1. Bank Angle Sensor System Inspection

- Check the bank angle sensor voltage with MCS.
- Incline the bank angle sensor.
- Is the voltage decrease?

Yes
▶

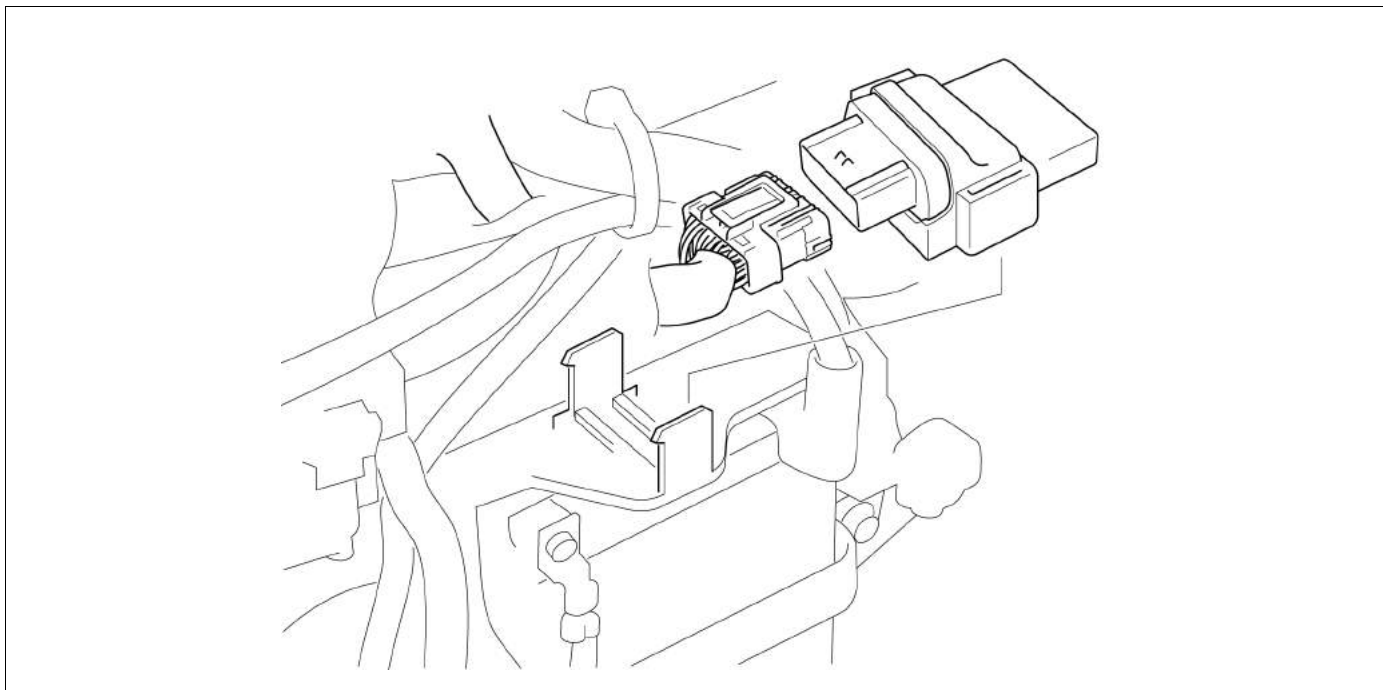
- Replace the ECM with a new one →4-19, and recheck.

No ▼

- Replace the bank angle sensor with a new one →4-20, and recheck.



ECM

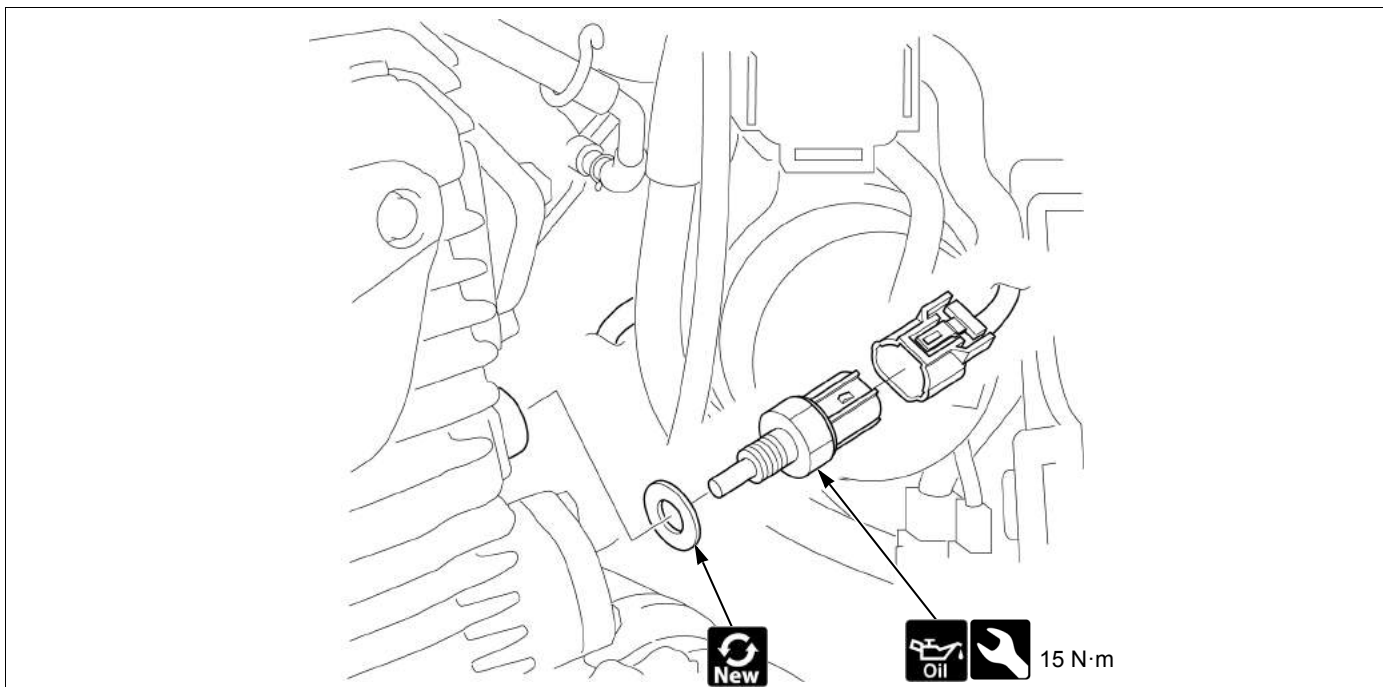


- Fuel tank shroud →3-6



- ECM power circuit and ground circuit inspection

EOT SENSOR



- Side cover →3-4

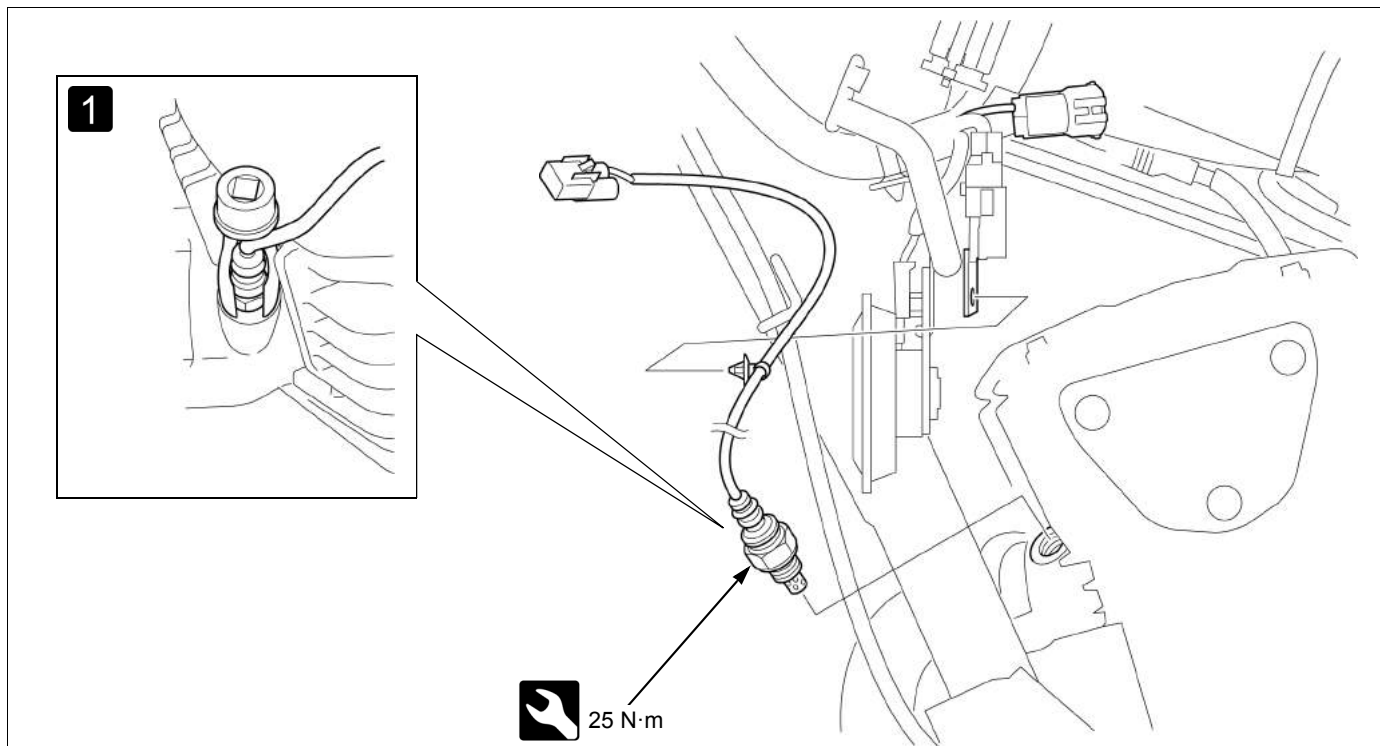


- Engine oil →2-14

- EOT sensor inspection

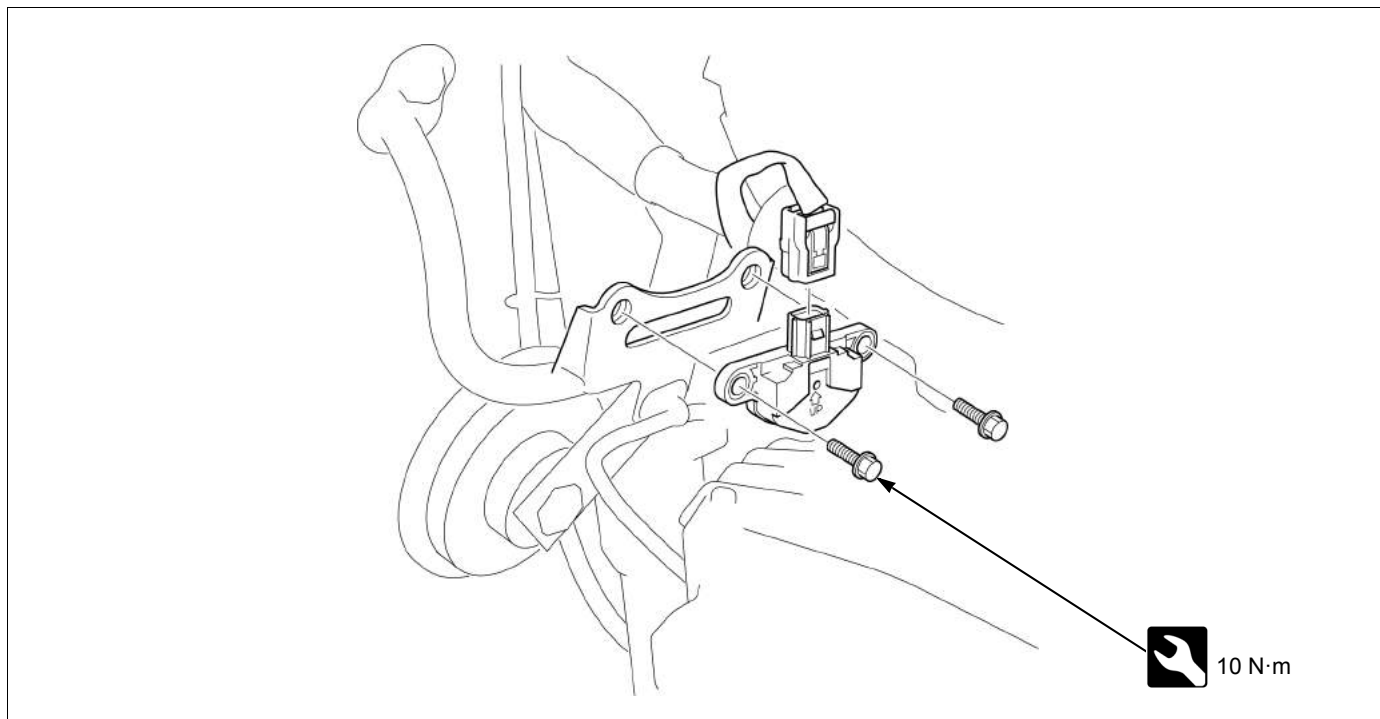


O₂ SENSOR



- Fuel tank shroud → 3-6
 - **1** Remove the O₂ sensor.
- Flare nut socket: FRXM17 (Snap on) or equivalent

BANK ANGLE SENSOR



- Fuel tank shroud → 3-6

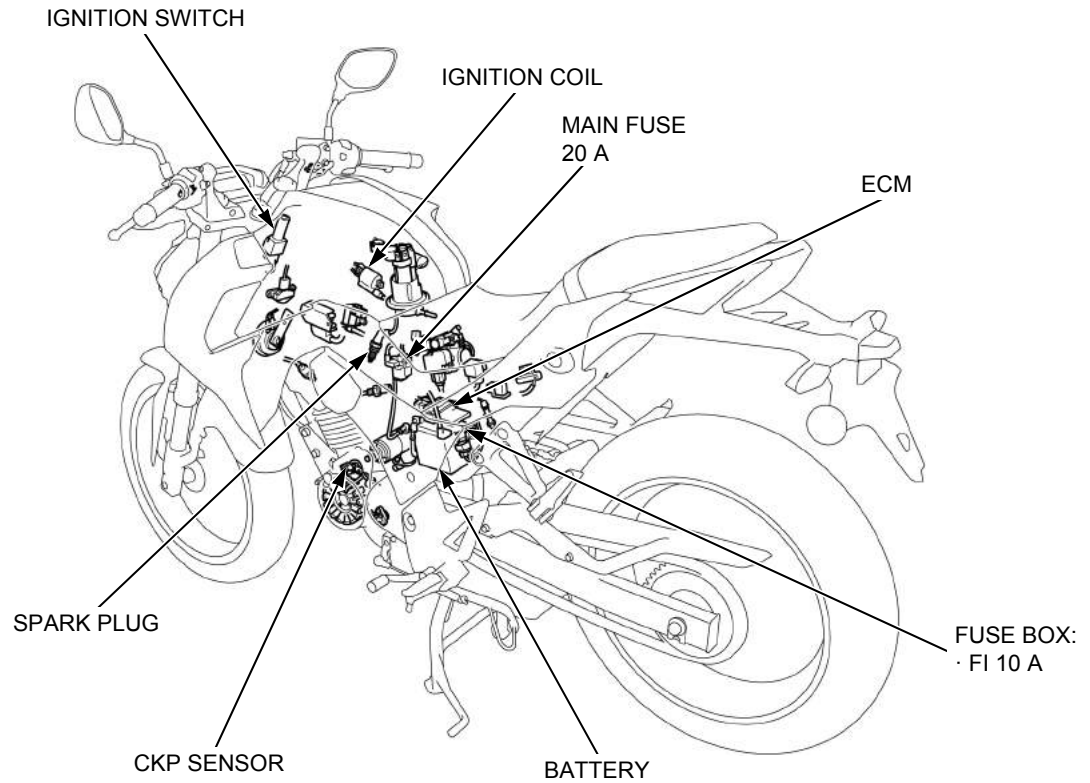


- Bank angle sensor inspection

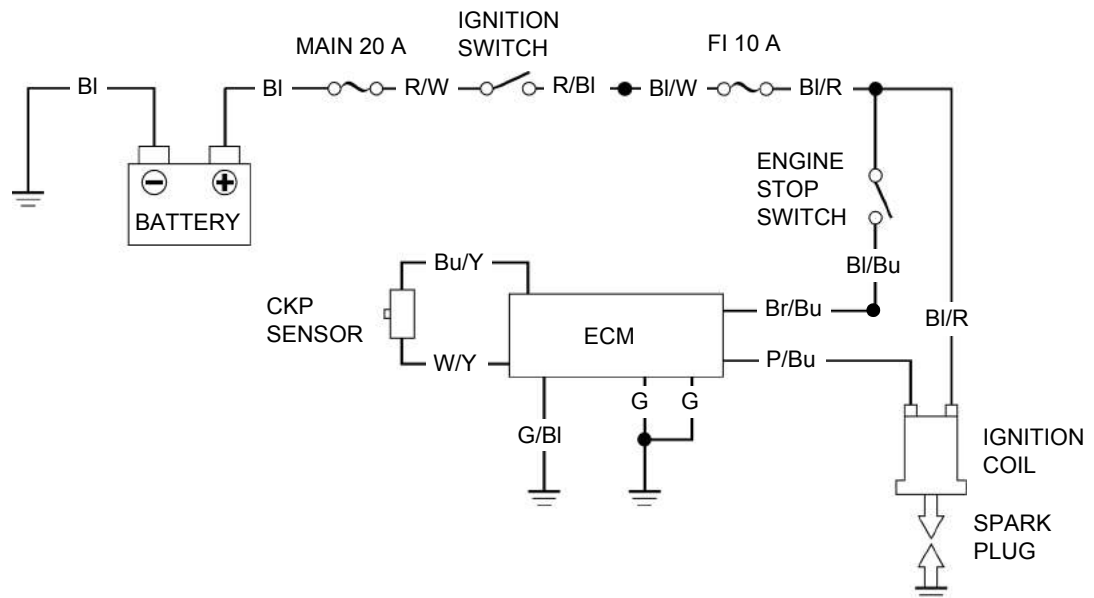


IGNITION SYSTEM

IGNITION SYSTEM LOCATION

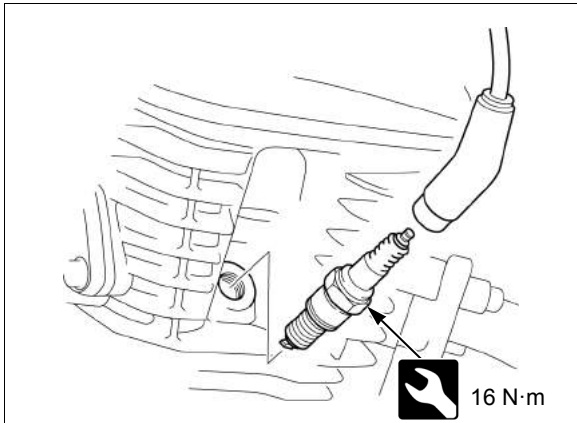


IGNITION SYSTEM DIAGRAM





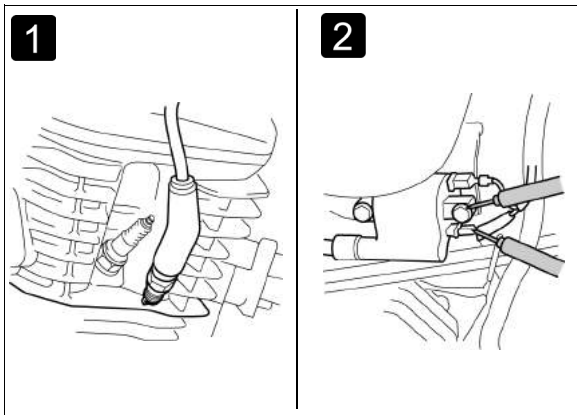
SPARK PLUG REPLACEMENT



- Spark plug inspection.
- Discard the spark plug in accordance with the maintenance schedule. → 1-23

INSPECTION

IGNITION COIL PRIMARY PEAK VOLTAGE

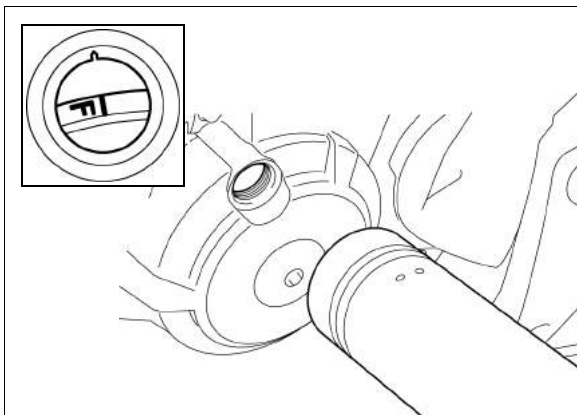


- Refer to "Basic Shop Manual" for the detail information of ignition coil primary peak voltage inspection.
- Support the vehicle with its centerstand on a level surface.
- Fuel tank shroud → 3-6
- Disconnect the spark plug cap from the spark plug.
- **1** Connect a known-good spark plug to the spark plug cap and ground it to the cylinder head as done in a spark test.
- **2** With the ignition coil primary wires connected, connect the peak voltage adaptor probes to the ignition coil primary terminal and ground.
CONNECTION: P/Bu (+) – Ground (–)

• Check the initial voltage at this time.
STANDARD VOLTAGE: Battery voltage

- Shift the transmission in neutral, and then crank the engine with the starter and measure the ignition coil primary peak voltage.
PEAK VOLTAGE: 100 V minimum

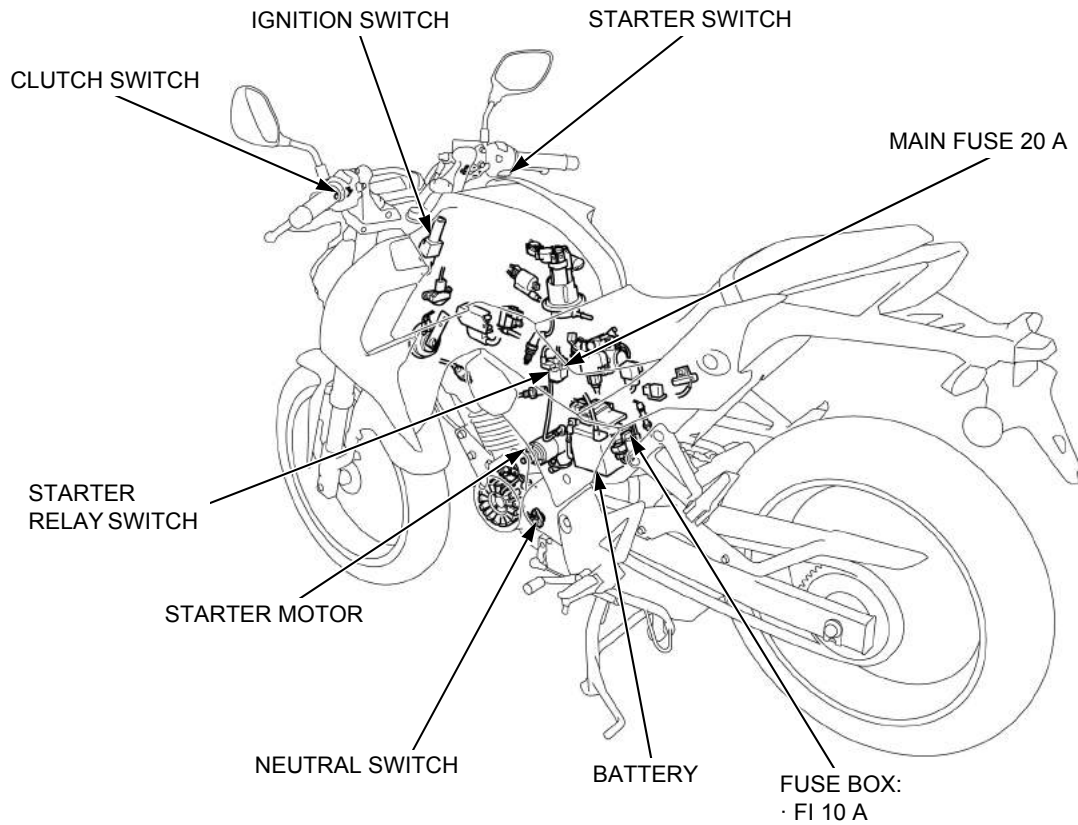
IGNITION TIMING



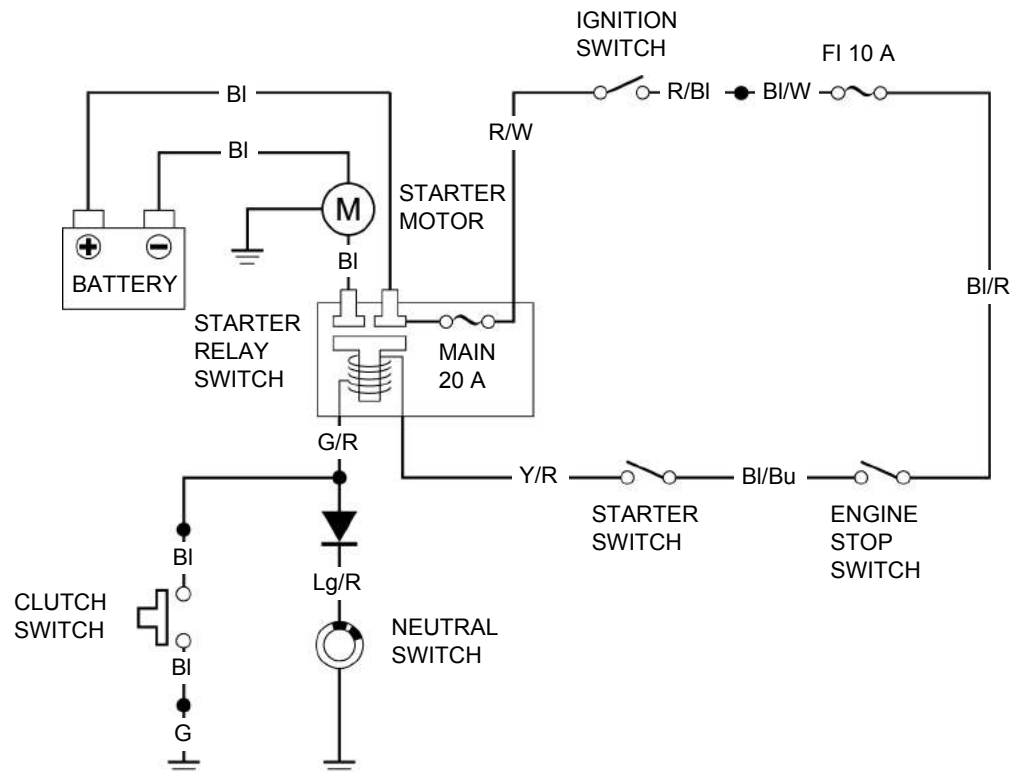
- Warm the engine up to normal operating temperature.
- Connect the timing light to the spark plug wire.
- Start the engine and let it idle
IDLE SPEED: 1,500 ± 100 rpm
- The ignition timing is correct if the "F" mark on the flywheel aligns with the index mark on the left crankcase cover.

ELECTRICAL STARTER

ELECTRICAL STARTER SYSTEM LOCATION



ELECTRICAL STARTER SYSTEM DIAGRAM





ELECTRICAL SYSTEM

ELECTRICAL STARTER TROUBLESHOOTING

STARTER MOTOR DOES NOT TURN

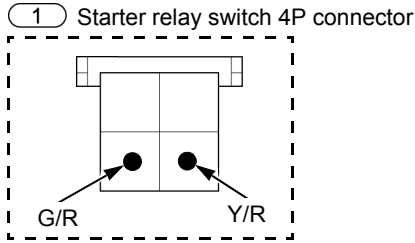


- Fuel tank shroud → 3-6



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

Connector Diagram



1. Starter Relay Coil Input Circuit Inspection



1

- Connection: Y/R (+) – Ground (–)
(Connector connected)
- Push and hold the starter button.
- Does the battery voltage exist?

No
▶

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

Yes ▼

2. Starter Relay Coil Ground Circuit Inspection



1



1

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

No
▶

- Inspect the following.
 - Diode
 - Clutch switch
 - Neutral switch
 - Starter relay coil ground related circuit

Yes ▼

3. Starter Relay Inspection

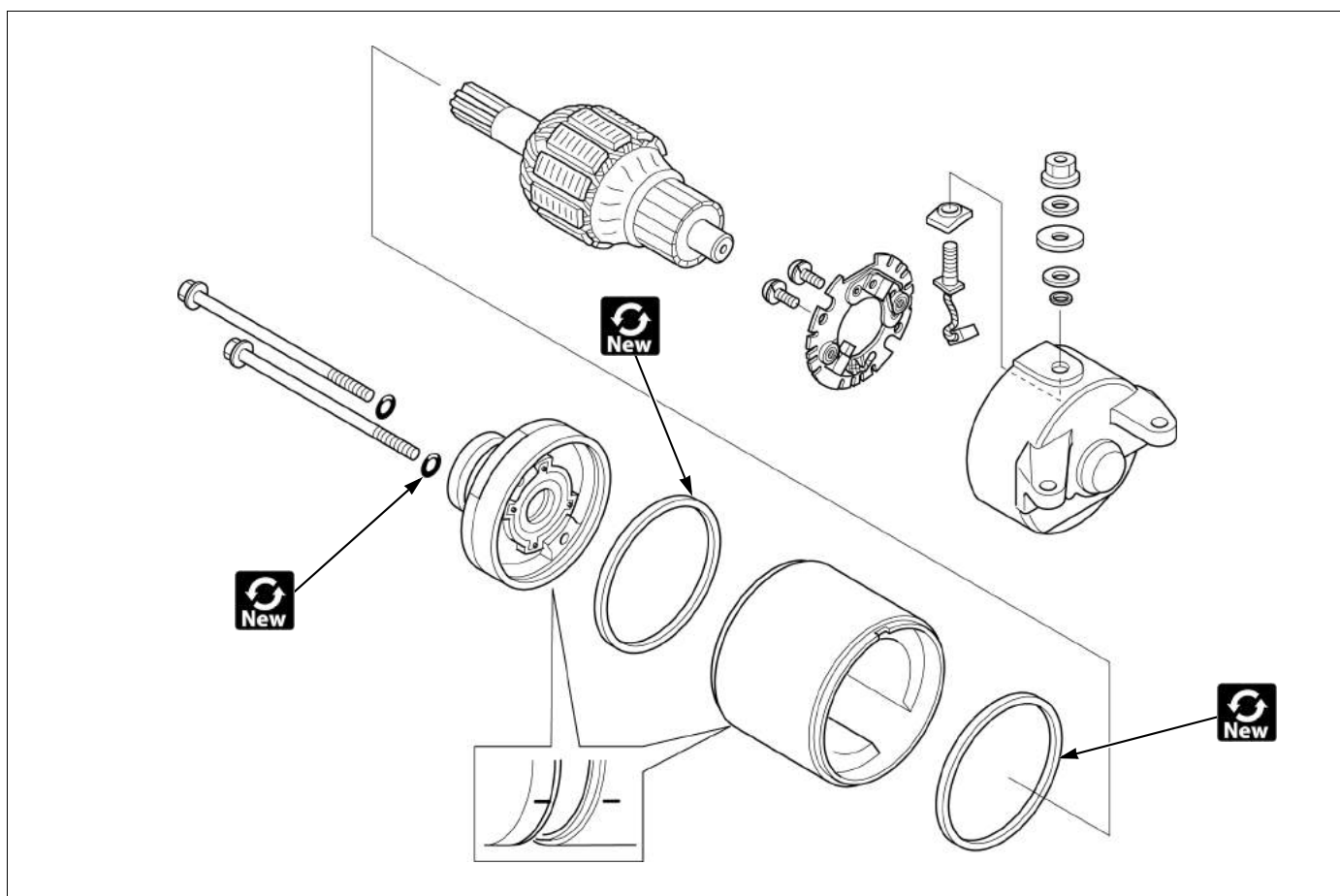
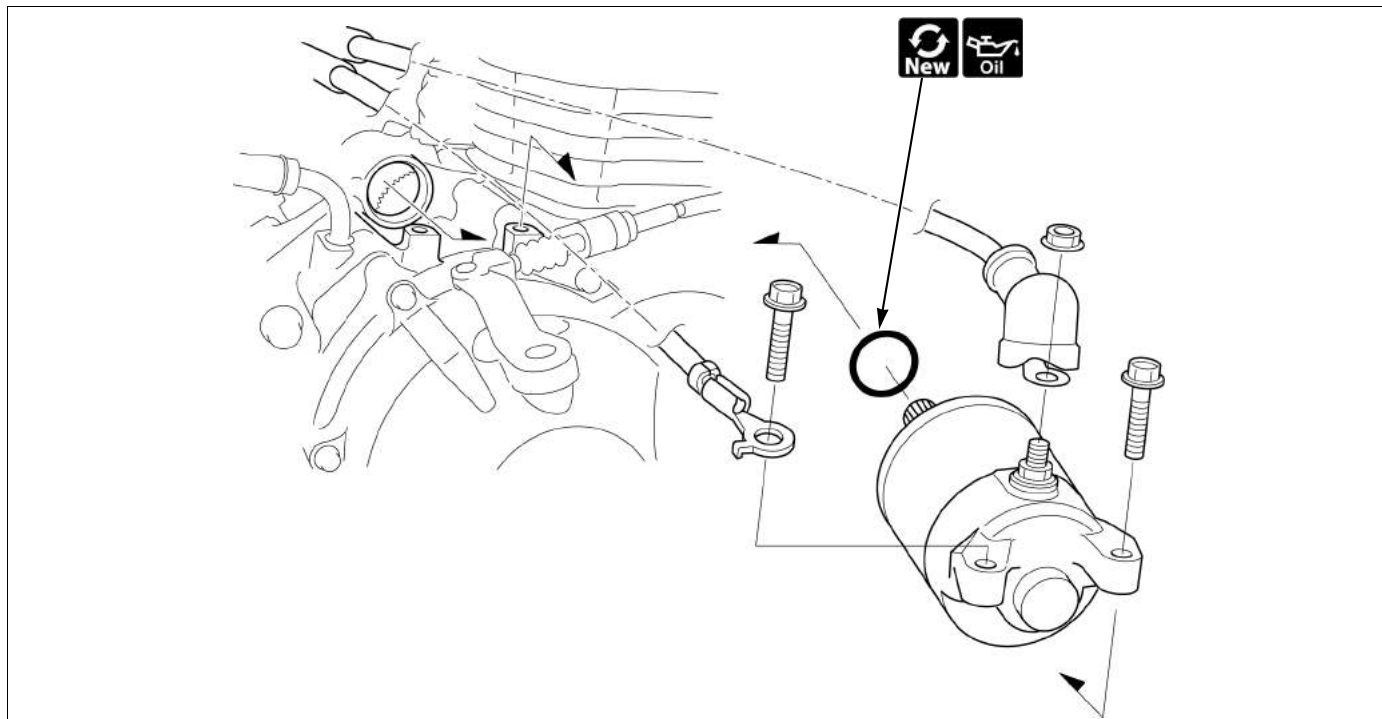
- Replace the starter relay with a new one, and recheck.
- Does the starter motor turn?

Yes
▶

- Faulty original starter relay

No ▼

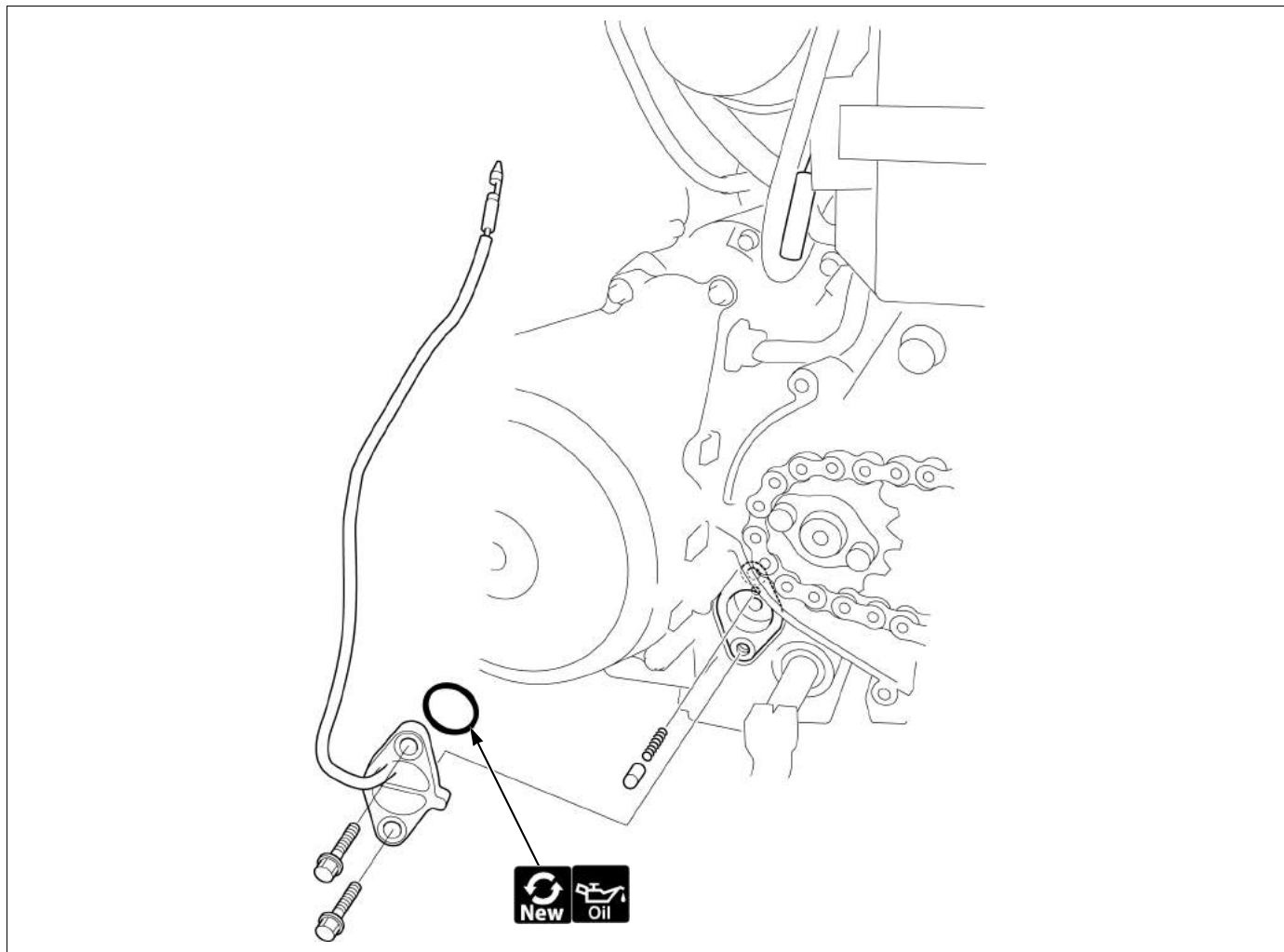
- Check a short or open circuit in starter motor cable.
- If there is no faulty circuit, replace the starter motor with a new one, and recheck.

STARTER MOTOR

• Electric starter inspection



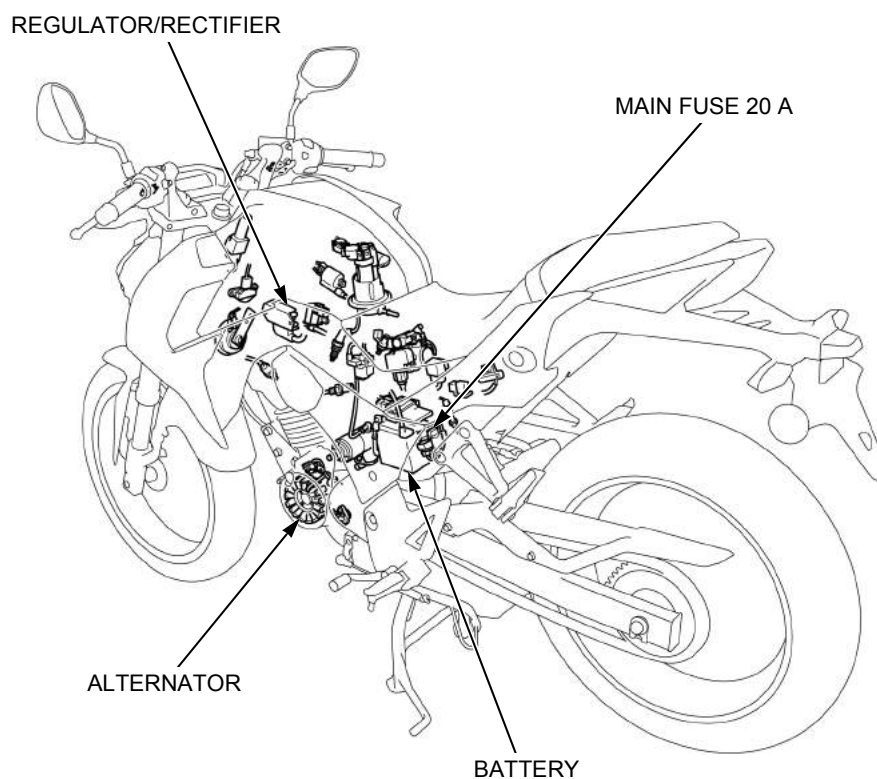
NEUTRAL SWITCH



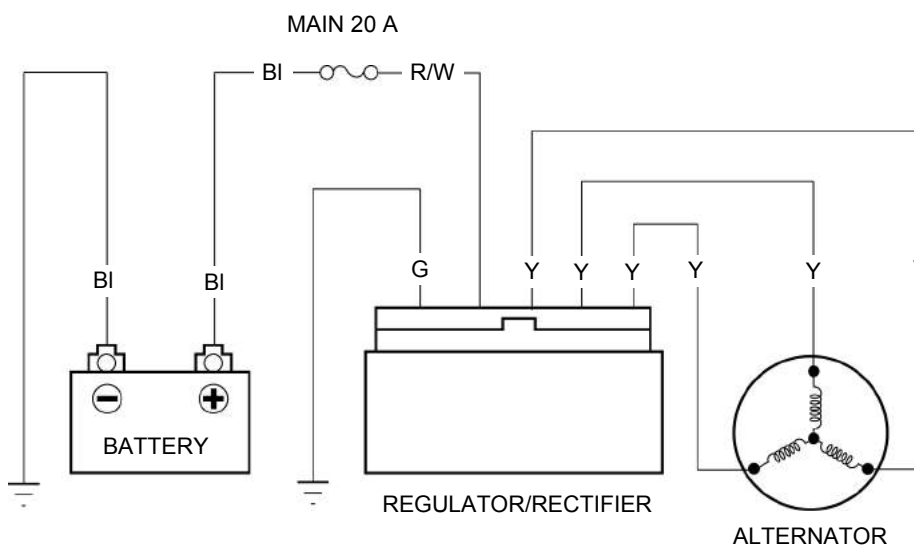
- Drive sprocket cover →3-9
- Engine oil →2-14

BATTERY/CHARGING SYSTEM

BATTERY/CHARGING SYSTEM LOCATION



BATTERY/CHARGING SYSTEM DIAGRAM

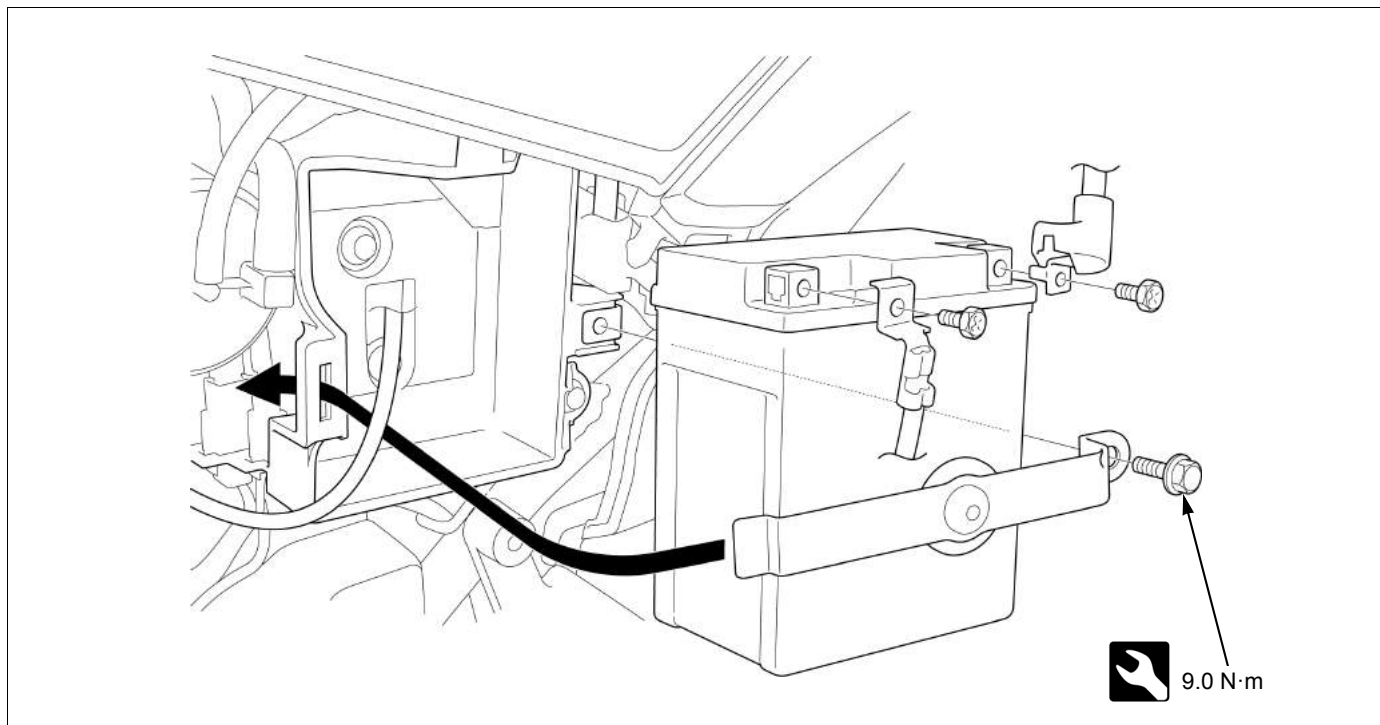


- Battery/charging system information, troubleshooting and inspection



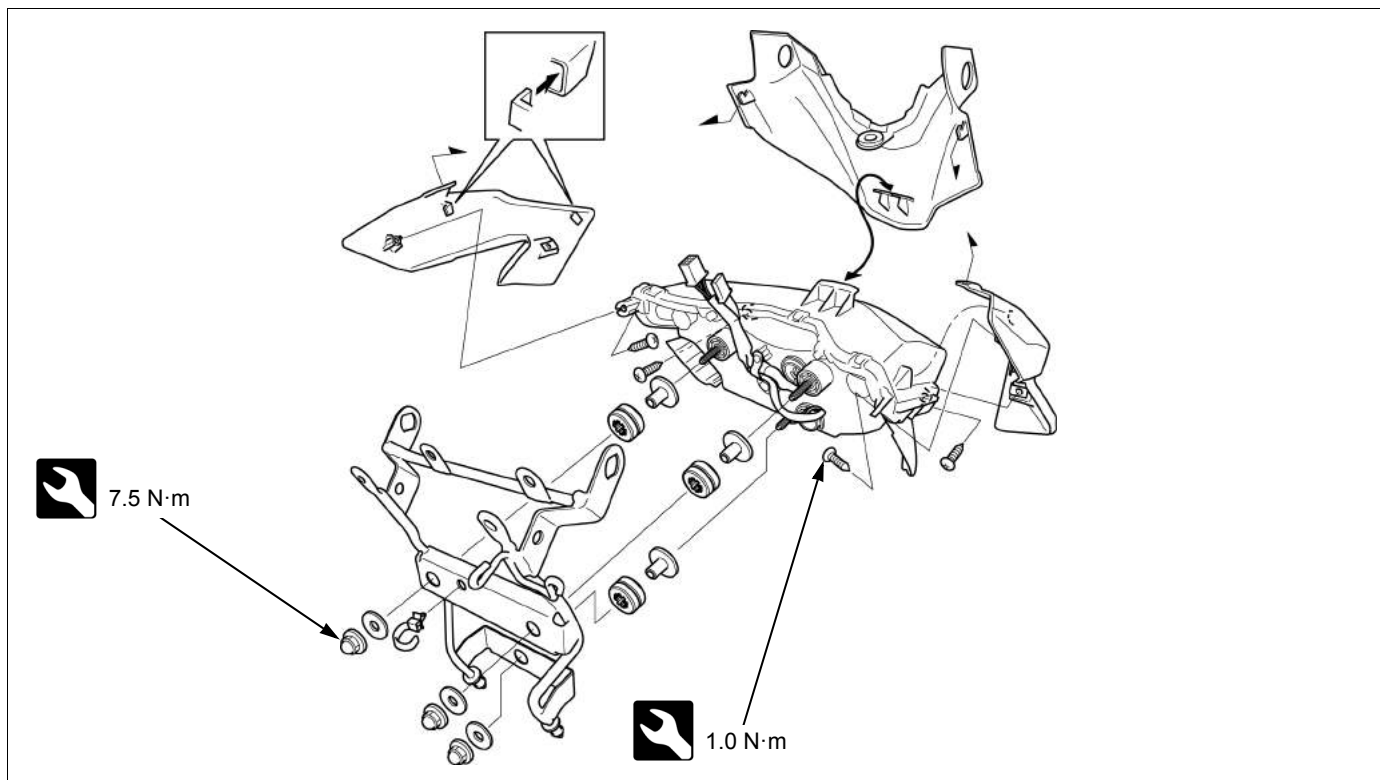
ELECTRICAL SYSTEM

BATTERY



- Left side cover →3-4

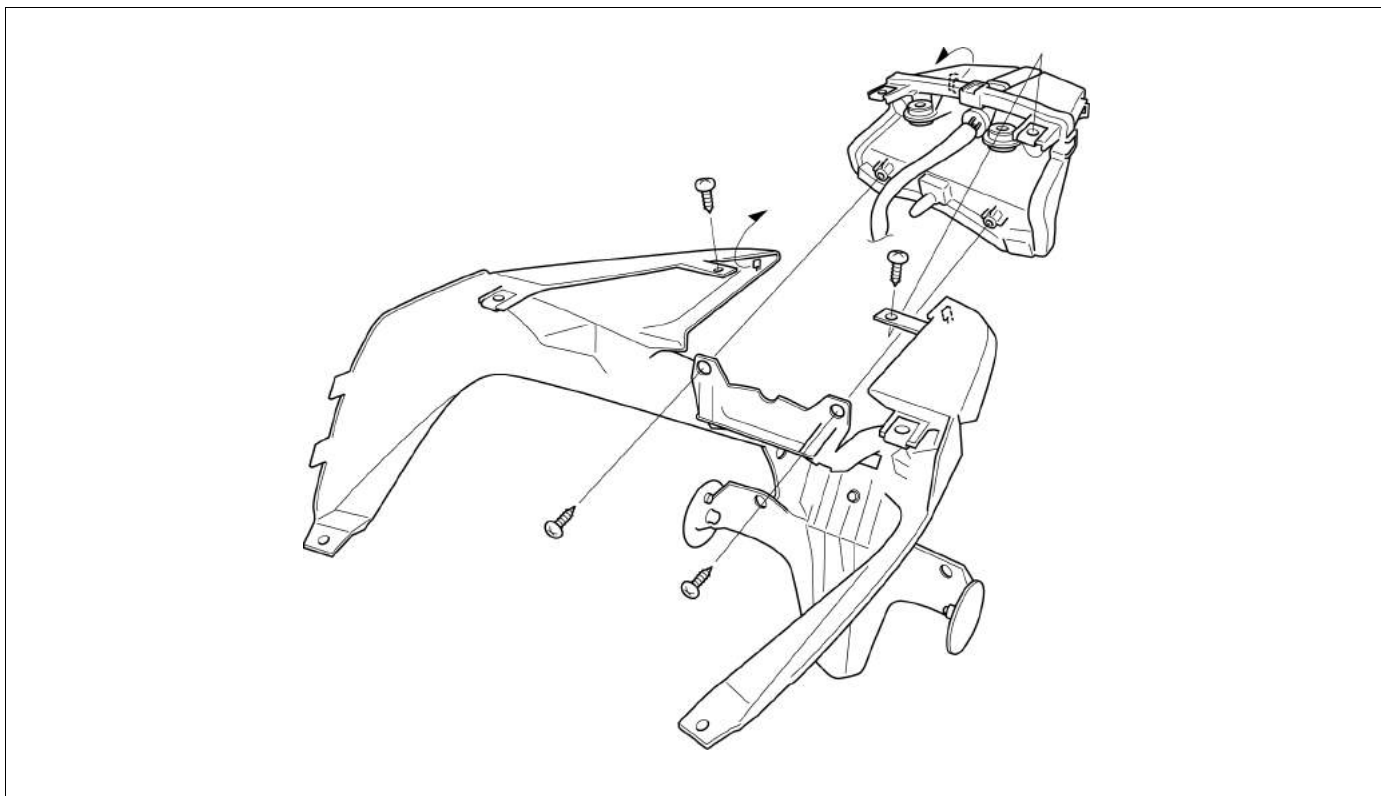
LIGHTING SYSTEM



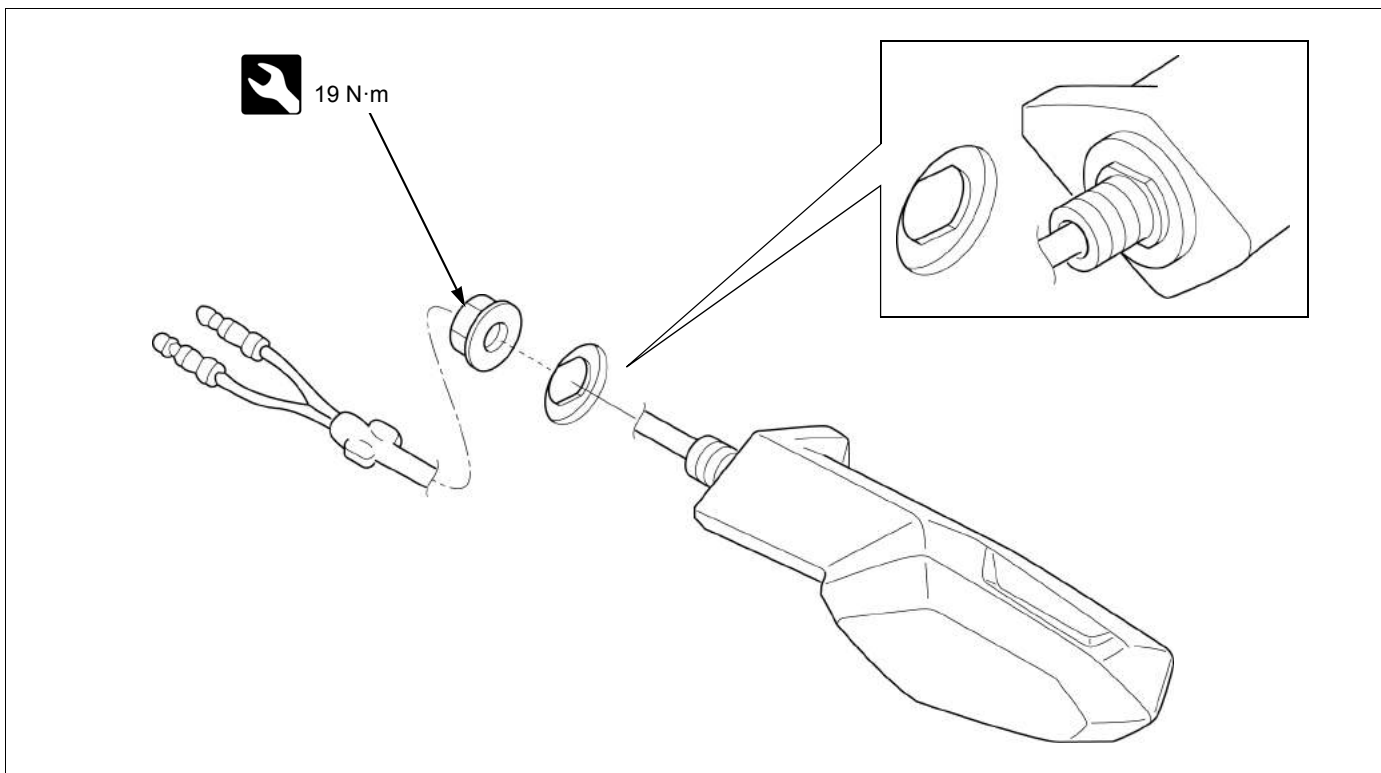
- When LEDs headlight flickering, replace the regulator/rectifier with a known good one, and recheck. If the headlight still flickering, replace the headlight unit.



- Front visor →3-7



- Rear fender A →3-10



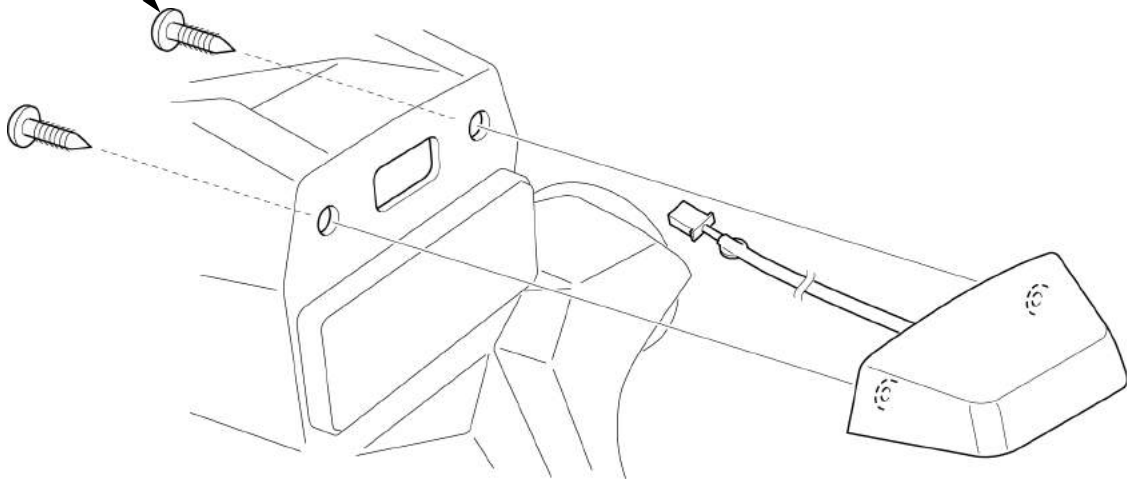
- Front
 - Front visor →3-7
- Rear
 - Seat →3-3



ELECTRICAL SYSTEM

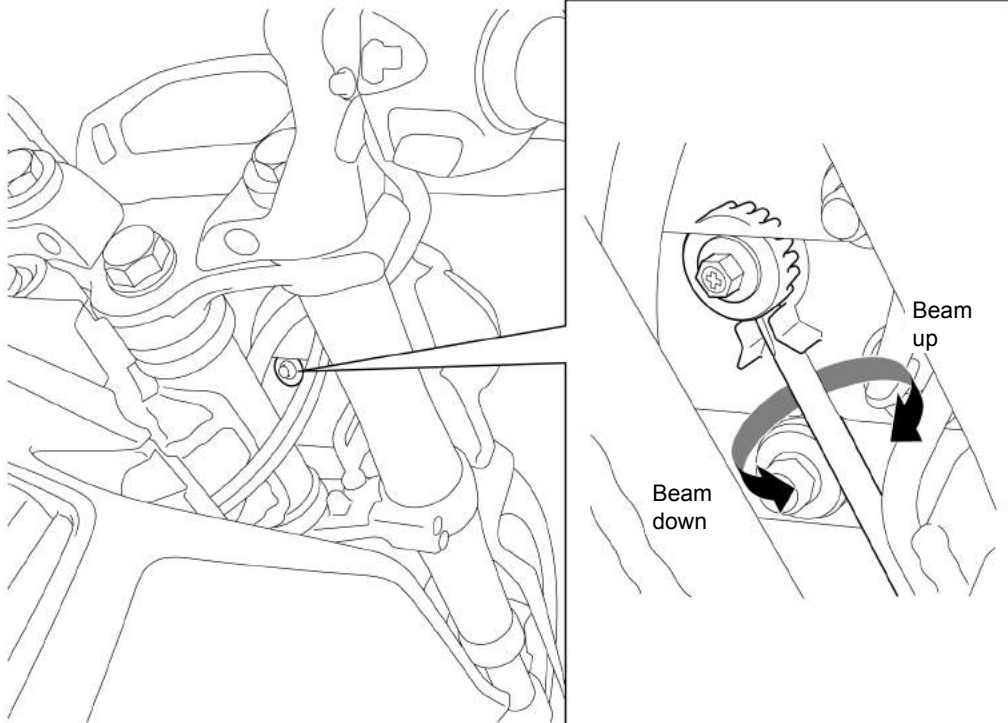


1.0 N·m



• Seat →3-3

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

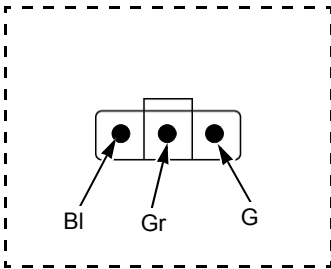


- Fuel tank shroud → 3-6



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

① Turn signal light relay 3P connector



1. Turn Signal Light Relay Input Voltage Inspection



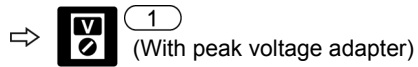
- Connection: Bl (+) – G (–)
- Does the battery voltage exist?

No
▶

- Faulty Bl or G wire

Yes ▼

2. Turn Signal Light Relay Inspection



- Connection: Gr (+) – G (–)
(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 an open or short circuit in Gr, O or Lb wire.
- If there is no faulty circuit, replace the left handlebar switch with a new one → 3-20, and recheck.



ELECTRICAL SYSTEM

HANDLEBAR SWITCH LED TROUBLESHOOTING

- Do not connect the battery to the handlebar switch LED directly to avoid damaging to the LED.



- When part of the LED on the right or the left of the handlebar switch does not light, replace the handlebar switch with a known good one →3-20, and recheck.

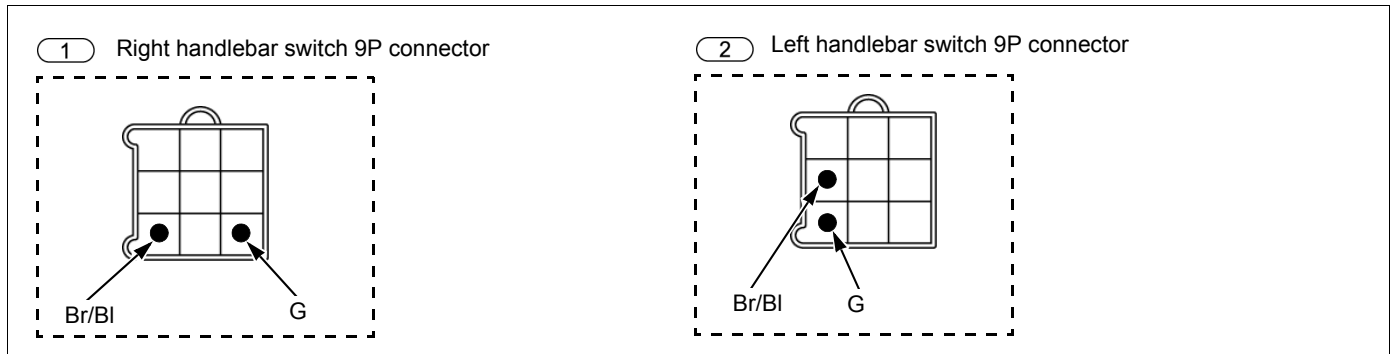
IT DOES NOT LIGHT UP ALL OF THE LED ON THE RIGHT OR THE LEFT OF THE HANDLEBAR SWITCH



- Speedometer (Connector connected) →4-34



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



1. Handlebar Switch LED Input Voltage Inspection



- Turn the lighting switch ON1 or ON2.
- Connection: Br/BI (+) – G (–)
- Does the voltage 2.4 V min. ?

Yes ▼

- Replace the right or left handlebar switch with a new one →3-20, and recheck.

No
►

- Faulty Br/BI or G wire



IT DOES NOT LIGHT UP ALL OF THE LED ON THE RIGHT AND THE LEFT OF THE HANDLEBAR SWITCH

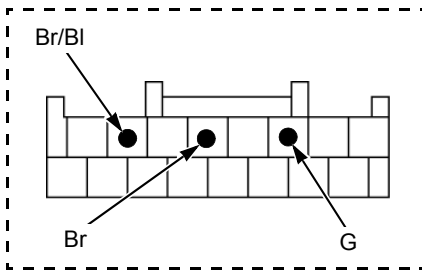


- Speedometer (Connector connected) → 4-34



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

1 Speedometer 16P connector



1. Handlebar Switch LED Circuit Inspection

- Check an open or short circuit in Br/BI or G wire.
- Is there an open or short circuit?

No
▶

- Faulty Br/BI or G wire

Yes ▼

2. Speedometer Input Voltage Inspection



1



⇒



1

- Turn the lighting switch ON1 or ON2.
- Connection: Br (+) – G (–)
- Does the battery voltage exist?

No
▶

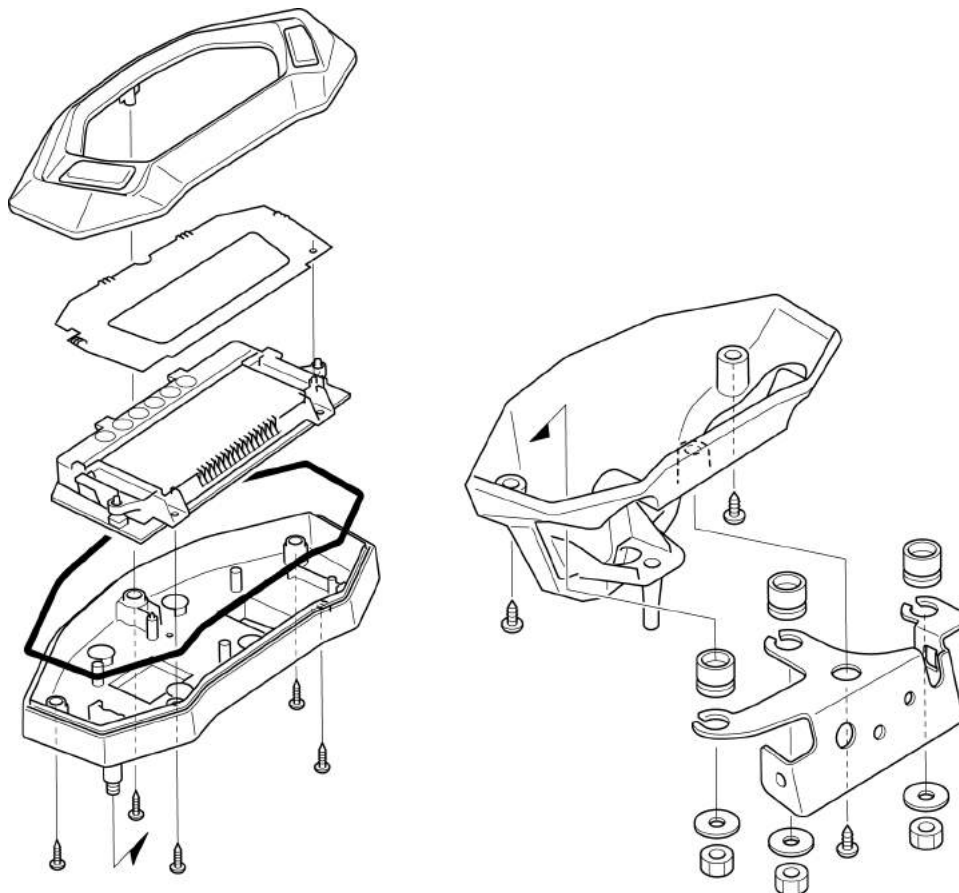
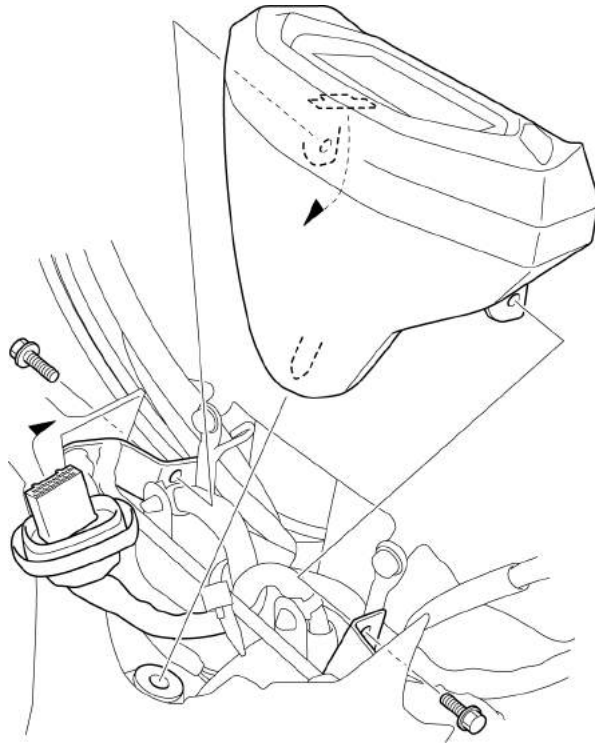
- Faulty Br wire

Yes ▼

- Replace the meter with a new one → 4-34, and re-check.

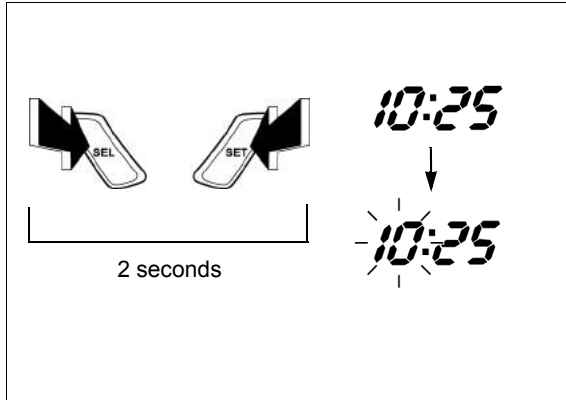


SPEEDOMETER

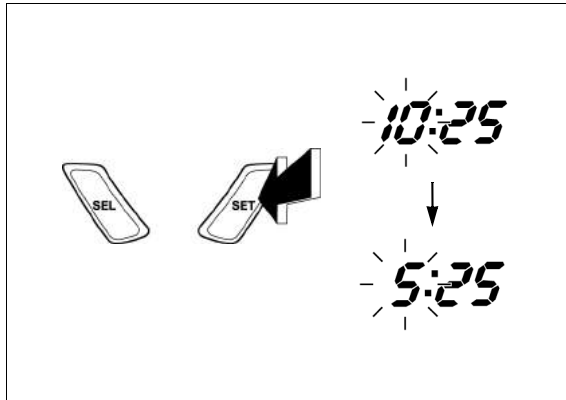




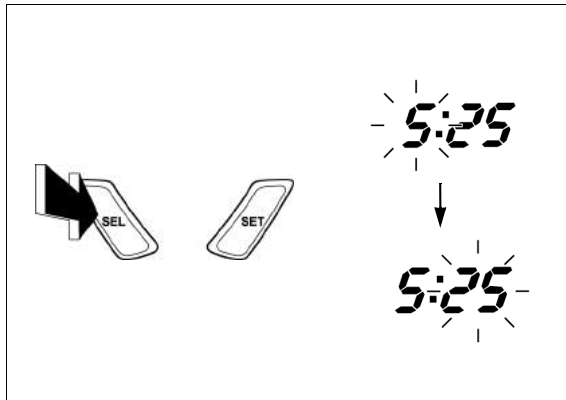
CLOCK ADJUST



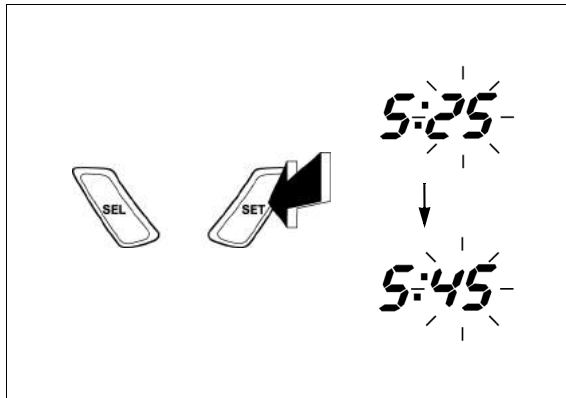
- Push and hold both the SEL button and SET button for more than 2 seconds.
- The clock will be set in the adjust mode with the hour display flashing.



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



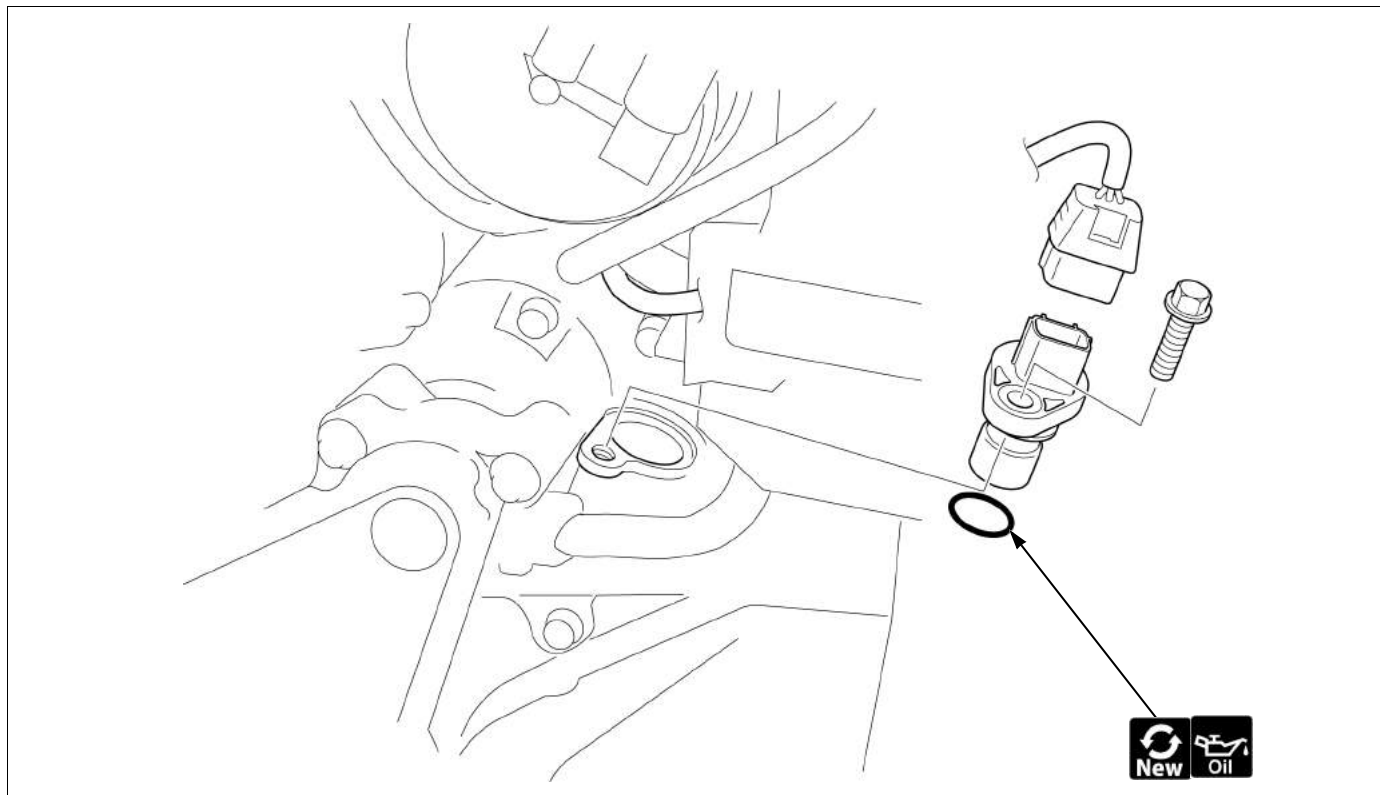
- The minute display will start flashing.



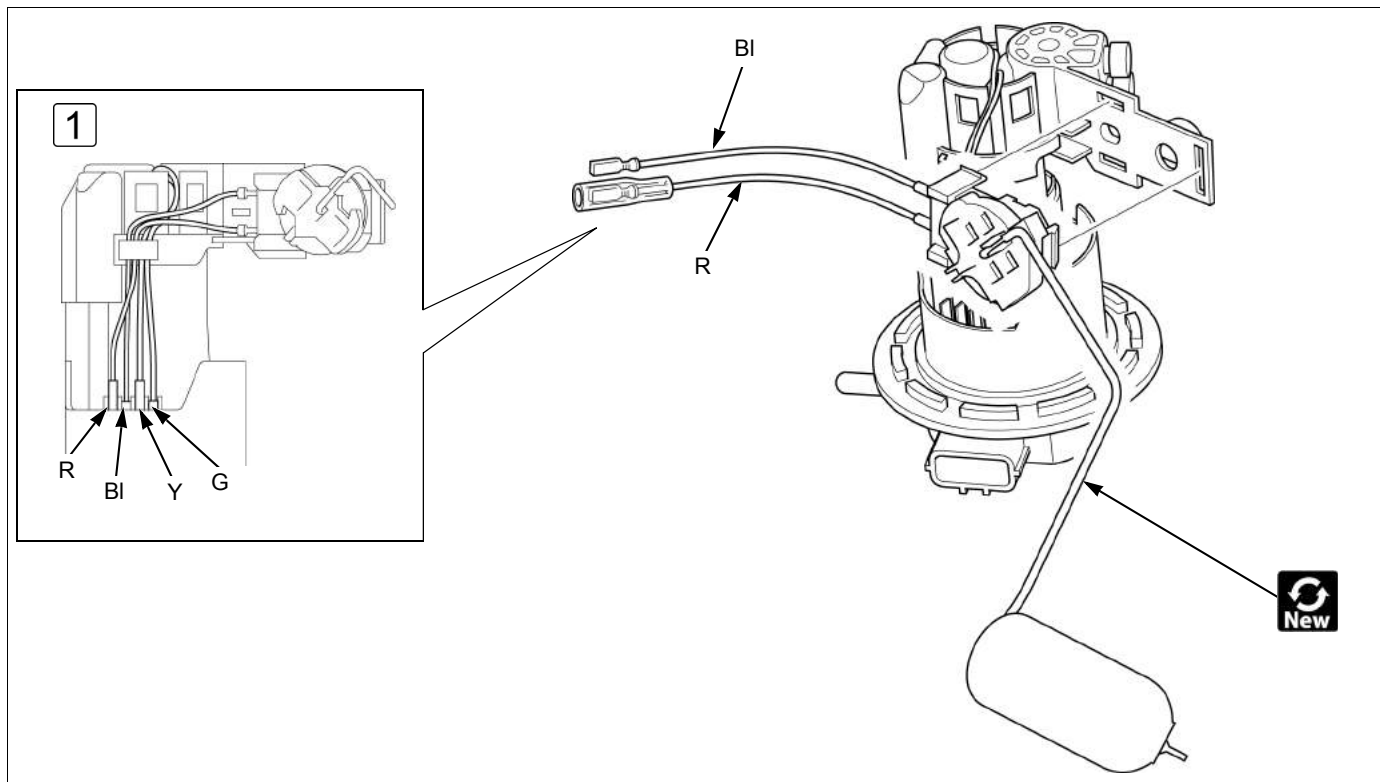
- The time advances by one minute, each time the button is pushed.
- The time advances fast when the button is pushed and held.
- To end the adjustment, push the SEL button or turn the ignition switch to OFF.
- The display will stop flashing automatically and the adjustment will be cancelled if the button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



VS SENSOR



FUEL LEVEL SENSOR



- Fuel pump unit →2-4



- 1 Route the fuel level sensor wires to the guide and terminals properly.



FUEL METER TROUBLESHOOTING

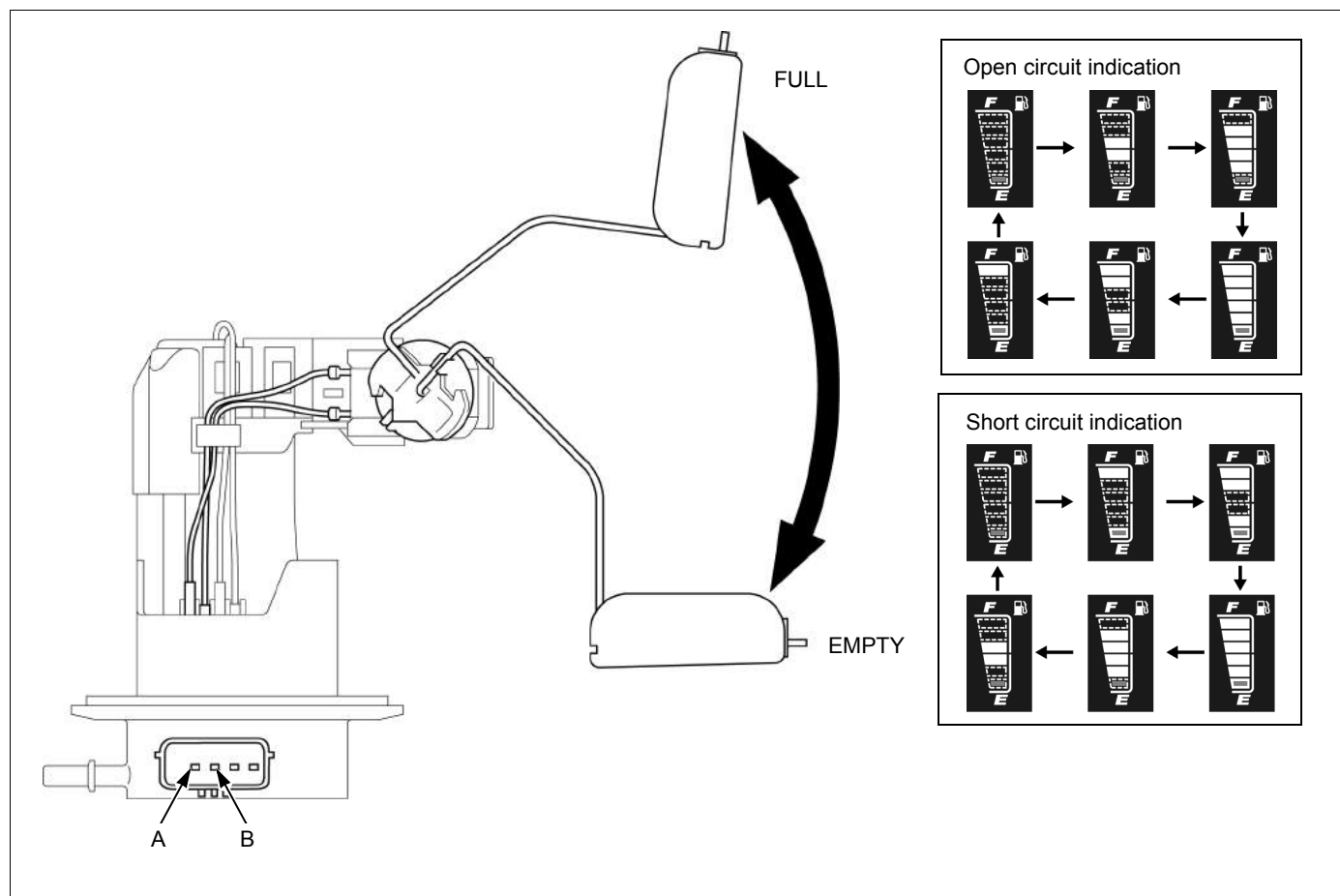
FUEL METER NEEDLE DOES NOT MOVE



- Fuel pump unit → 2-4



- Loose or poor contacts of related terminal/connector



1. Fuel Level Sensor Circuit Inspection

- Check the Y/W and G wire.
- Is there open or short circuit?

Yes
►

- Faulty Y/W or G wire

No ▼

2. Fuel Level Sensor Inspection



- Connection: A – B
- Standard: FULL 6 – 10 Ω , EMPTY 90 – 100 Ω .
- Does the standard resistance exist?

No
►

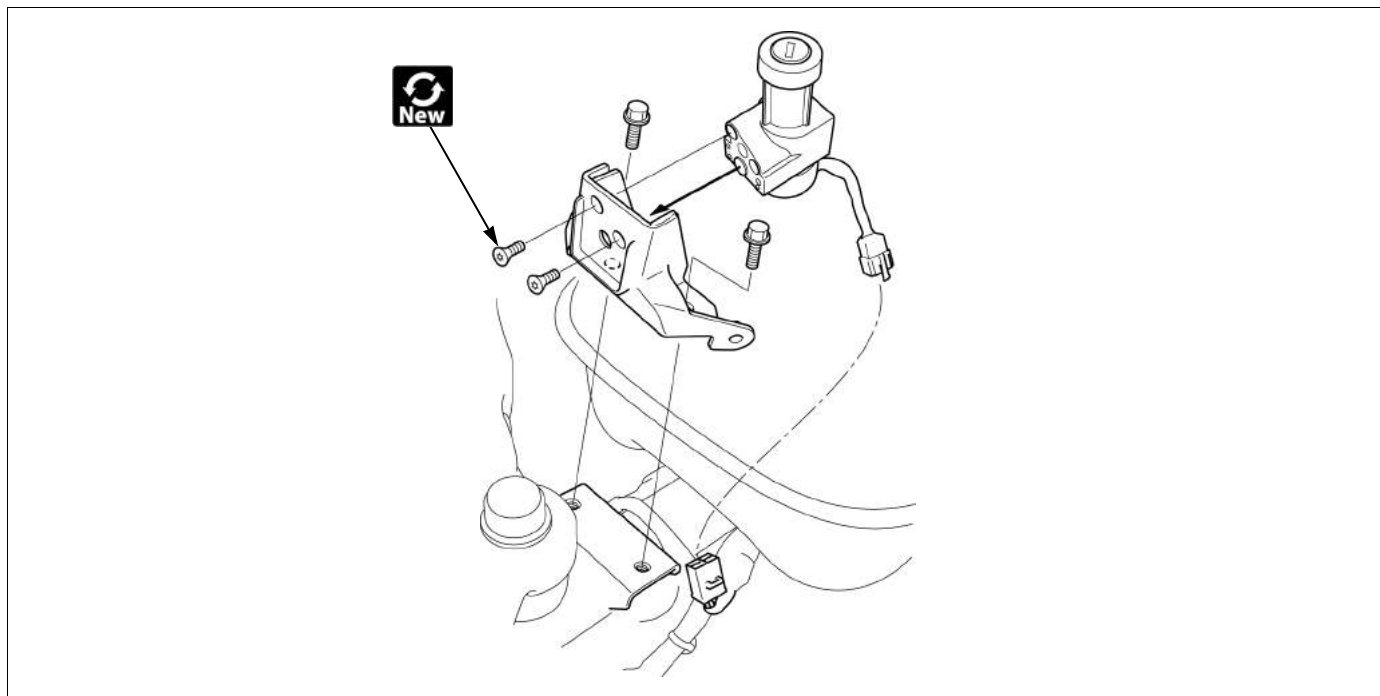
- Replace the fuel level sensor with a new one → 4-36, and recheck.

Yes ▼

- Replace the meter with a new one → 4-34, and recheck.

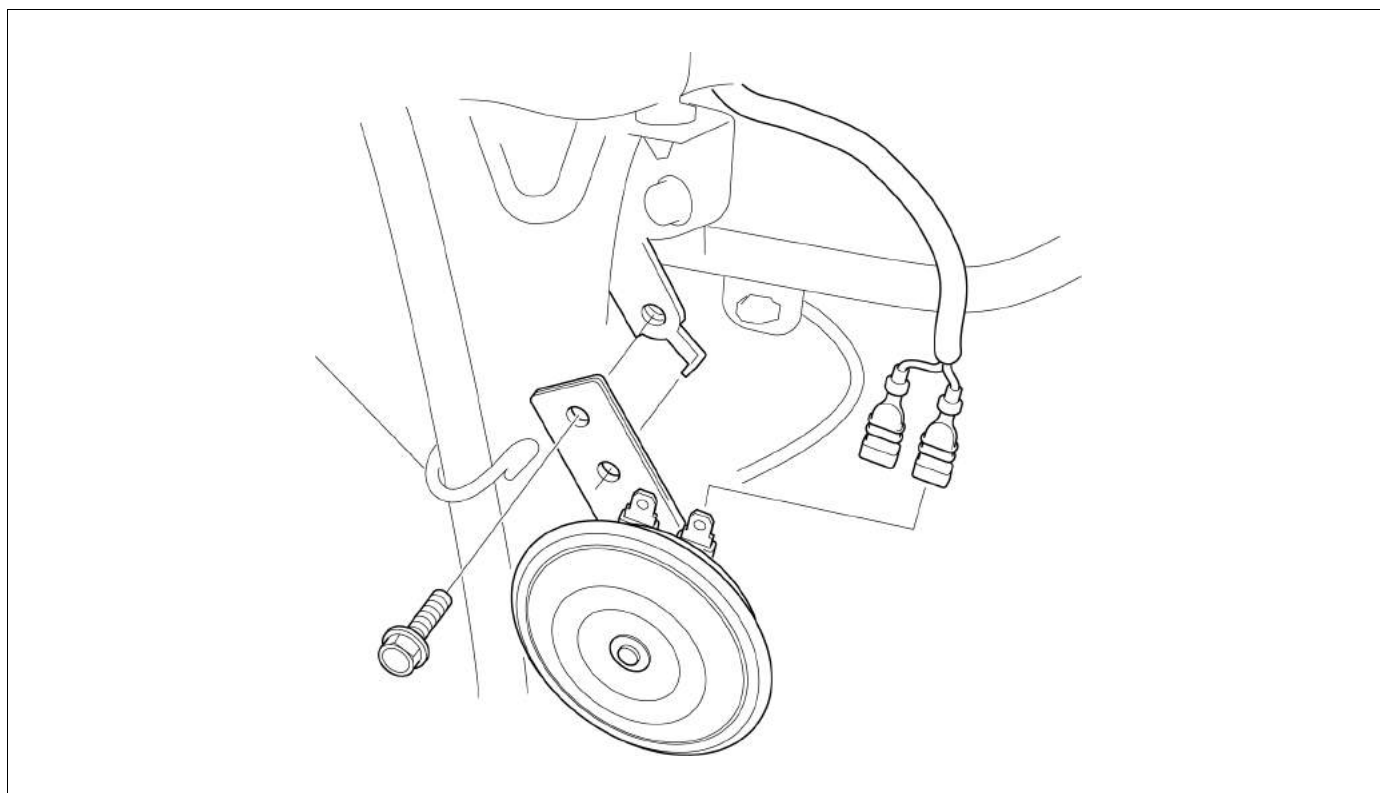


ELECTRICAL COMPONENT IGNITION SWITCH



• Fuel tank center cover →3-7

HORN

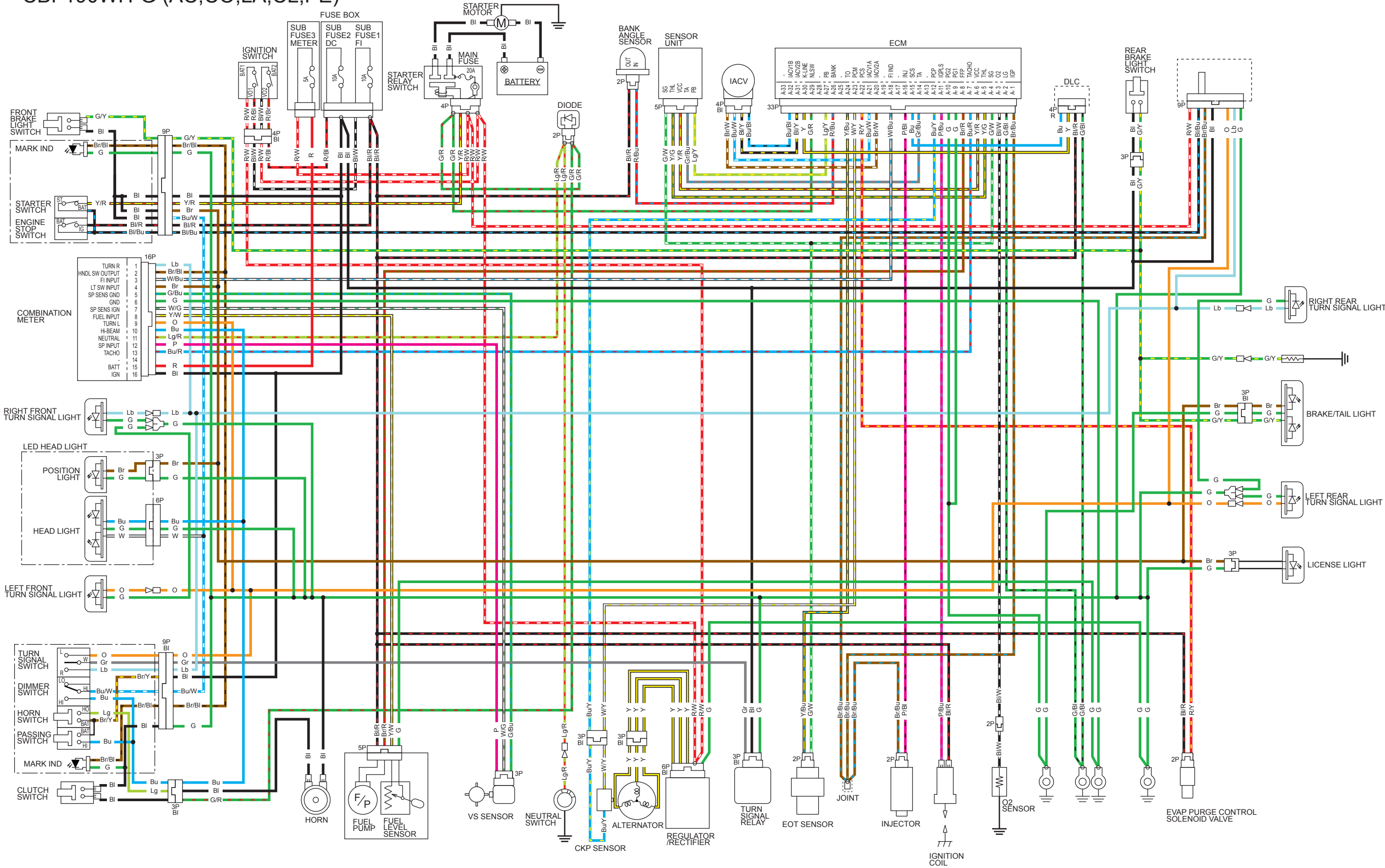


• Fuel tank shroud →3-6

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CBF190WH-G (AC,CO,LA,CL,PE)



SWITCH CONTINUITY

IGNITION SWITCH			
	BAT1	VO1	BAT2
ON	○	○	○
OFF			

ENGINE STOP SWITCH		
	BAT	IG
OFF	○	○
RUN	○	○

HORN SWITCH		
	BAT	HO
FREE		
PUSH	○	○

STARTER SWITCH		
	BAT	ST
FREE		
PUSH	○	○

TURN SIGNAL SWITCH			
	W	R	L
R	○	○	
N			
L			○

PASSING SWITCH		
	BAT	HI
FREE		
PUSH	○	○

DIMMER SWITCH			
	HL	LO	HI
LO		○	
N			
HI			○

Bl	Black	Br	Brown	
Y	Yellow	O	Orange	
Bu	Blue	Lb	Light Blue	
G	Green	Lg	Light Green	
R	Red	P	Pink	
W	White	Gr	Gray	

TWO COLORED WIRE (EXAMPLE:YELLOW/RED)

