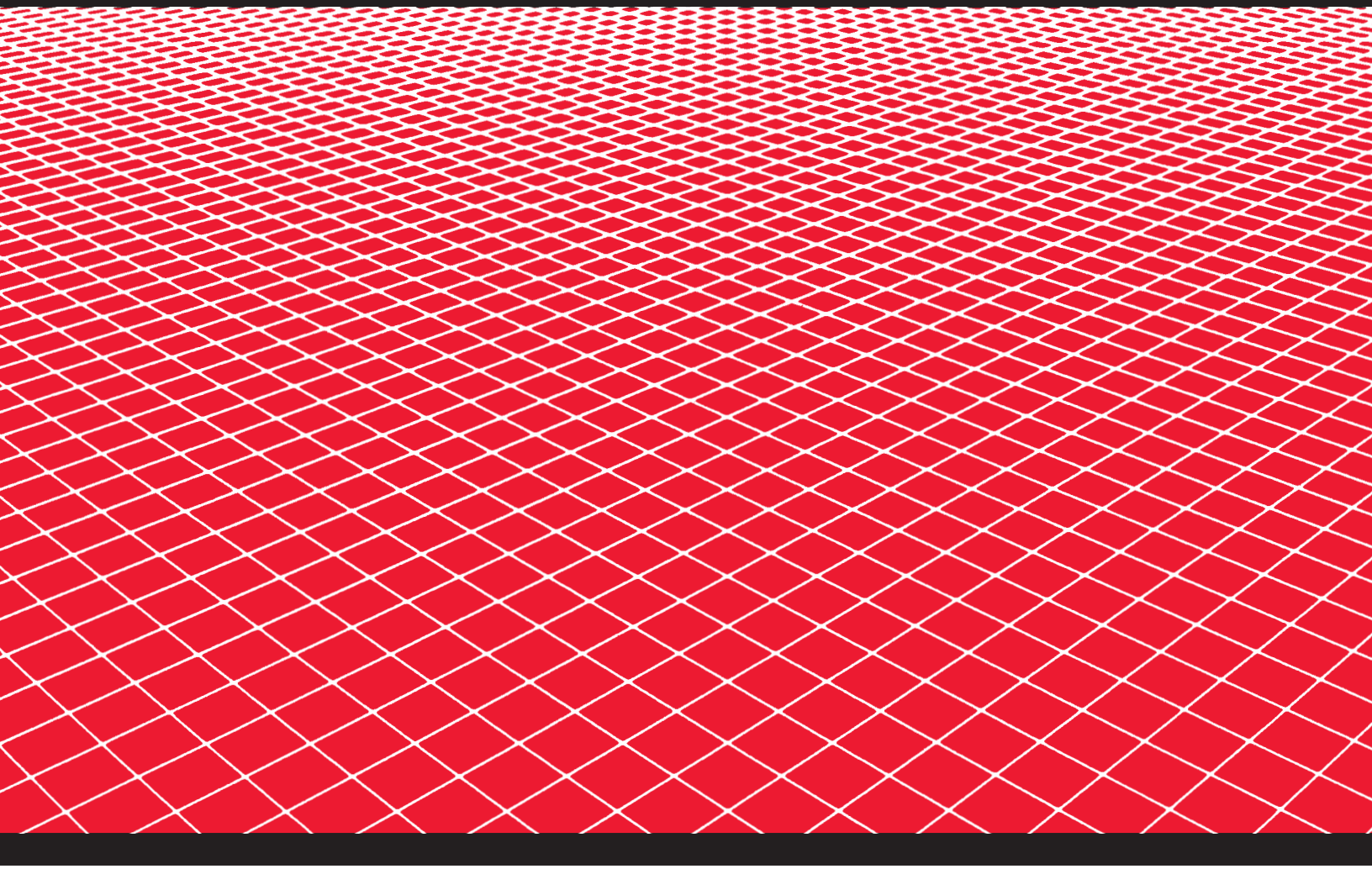
HONDA

SHOP MANUAL

CRF1000A/A2/AL/AL2/ D/D2/DL/DL2



CRF1000A/A2/AL/AL2/D/D2/DL/DL2J

26. CRF1000A/A2/AL/AL2/D/D2/DL/DL2-J ADDENDUM

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 Honda Genuine 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 or others 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 recommend 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.

INTRODUCTION

This addendum contains information for the CRF1000A/D/A2/D2/AL/DL/AL2/DL2-J.

Refer to CRF1000/A/D-G, H SHOP MANUAL (No. 62MJP00) and CRF1000/A/D-H, J SHOP MANUAL (No. 62MJP01Z) for service procedures and data not included in this addendum.

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.

SERVICE PUBLICATION OFFICE

Date of Issue: November, 2017

SERVICE RULES

1. Use Honda Genuine or Honda-recommended parts and lubricants or their equivalents. Parts that don't meet Honda's design specifications may cause damage to the motorcycle.
2. Use the special tools designed for this product to avoid damage and incorrect assembly.
3. Use only metric tools when servicing the motorcycle. Metric bolts, nuts and screws are not interchangeable with English fasteners.
4. Install new gaskets, O-rings, cotter pins, and lock plates when reassembling.
5. When tightening bolts or nuts, begin with the larger diameter or inner bolt first. Then tighten to the specified torque diagonally in incremental steps unless a particular sequence is specified.
6. Clean parts in cleaning solvent upon disassembly. Lubricate any sliding surfaces before reassembly.
7. After reassembly, check all parts for proper installation and operation.
8. Route all electrical wires as shown in the Cable and Harness Routing (page 26-17).
9. Do not bend or twist control cables. Damaged control cables will not operate smoothly and may stick or bind.

ABBREVIATION

Throughout this manual, the following abbreviations are used to identify the respective parts or systems.

Abbrev. term	Full term
ABS	Anti-lock Brake System
APS	Accelerator Position Sensor
CAN	Controller Area Network
CKP sensor	Crankshaft Position sensor
DCT	Dual Clutch Transmission
DLC	Data Link Connector
DTC	Diagnostic Trouble Code
ECM	Engine Control Module
ECT sensor	Engine Coolant Temperature sensor
EEPROM	Electrically Erasable Programmable Read Only Memory
EOP sensor	Engine Oil Pressure sensor
EOT sensor	Engine Oil Temperature sensor
ESS	Emergency Stop Signal
EVAP	Evaporative Emission
GST	Generic Scan Tool
HSTC	Honda Selectable Torque Control
IACV	Idle Air Control Valve
IAT sensor	Intake Air Temperature sensor
MAP sensor	Manifold Absolute Pressure sensor
MCS	Motorcycle Communication System
MIL	Malfunction Indicator Lamp
PAIR	Pulse Secondary Air Injection
PCM	Powertrain Control Module
PGM-FI	Programmed Fuel Injection
SCS short connector	Service Check Signal short connector
TBW	Throttle By Wire
TP sensor	Throttle Position sensor
TR sensor	Transmission Range Sensor
VS sensor	Vehicle Speed sensor

DESTINATION CODE

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

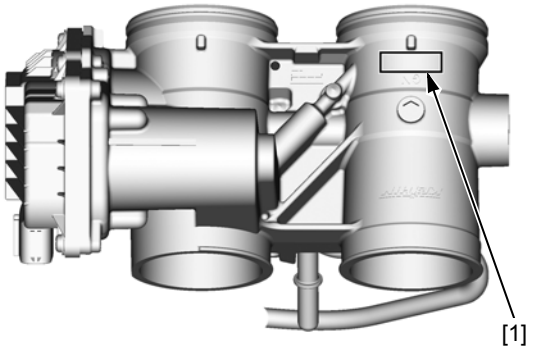
DESTINATION CODE	REGION
BR, IIBR, IIIBR, IVBR	Brazil
CH, IICH, IVCH	China
ED, IIED, IIIED, IVED	European direct sales
GS, IIGS, IIIGS, IVGS	Gulf countries
II-IN, III-IN, IV-IN	Indonesia
KO, IIKO, IIIKO, IVKO	Korea
RU, IIRU, IIIRU	Russia
TH, IITH, IIITH, IVTH	Thailand
U, IIU, IIIU, IVU	Australia, New Zealand
IIFO, IIIFO	Taiwan
IIIMA, IVMA	Malaysia

MODEL IDENTIFICATION

CRF1000D2 shown:

SERIAL NUMBER

The throttle body identification number [1] is stamped on the upper front left side of the throttle body as shown.



TYPES

TYPE CODE	DESTINATION CODE	Manual Transmission	DCT	ABS	HSTC	EVAP	ACCESSORY SOCKET
CRF1000A	ED, IIED, IIIED	○	–	○	○	○	–
	IIFO, IIIFO	○	–	○	○	○	–
	GS, IIGS, IIIGS	○	–	○	○	–	–
	IIKO, IIIKO	○	–	○	○	○	–
	U, IIU, IIIU	○	–	○	○	–	–
CRF1000A2	IVED	○	–	○	○	○	○
	IVGS	○	–	○	○	–	○
	IVU	○	–	○	○	–	○
CRF1000AL	IIIMA	○	–	○	○	○	–
	III-IN	○	–	○	○	–	–
	TH, IITH, IIITH	○	–	○	○	○	–
CRF1000AL2	IVMA	○	–	○	○	○	○
	IVTH	○	–	○	○	○	○
CRF1000D	ED, IIED, IIIED	–	○	○	○	○	–
	GS, IIGS, IIIGS	–	○	○	○	–	–
	IIKO, IIIKO	–	○	○	○	○	–
	U, IIU, IIIU	–	○	○	○	–	–
CRF1000D2	IVED	–	○	○	○	○	○
	IVGS	–	○	○	○	–	○
	IVKO	–	○	○	○	○	○
	IVU	–	○	○	○	–	○
CRF1000DL	IIIMA	–	○	○	○	○	–
	III-IN	–	○	○	○	–	–
	TH, IITH, IIITH	–	○	○	○	○	–
CRF1000DL2	IVMA	–	○	○	○	○	○
	IV-IN	–	○	○	○	–	○
	IVTH	–	○	○	○	○	○

SPECIFICATIONS

GENERAL SPECIFICATIONS

ITEM				SPECIFICATIONS
DIMENSIONS	Overall length		CRF1000A//D	2,330 mm (91.7 in)
			CRF1000A2//D2	2,340 mm (92.1 in)
			CRF1000AL/AL2/DL/DL2	2,310 mm (90.9 in)
	Overall width			930 mm (36.6 in)
	Overall height		CRF1000A/D	1,475 mm (58.1 in)
			CRF1000A2/D2	1,570 mm (61.8 in)
			CRF1000AL/DL	1,435 mm (56.5 in)
			CRF1000AL2/DL2	1,510 mm (59.4 in)
	Wheelbase	CRF1000A/D	Except FO models	1,575 mm (62.0 in)
			FO model	1,570 mm (61.8 in)
		CRF1000A2/D2		1,580 mm (62.2 in)
		CRF1000AL/ AL2/DL/DL2	Except IN models	1,560 mm (61.4 in)
			IN model	1,555 mm (61.2 in)
	Seat height	CRF1000A/D	Standard position	870 mm (34.3 in)
			Low position	850 mm (33.5 in)
		CRF1000A2/ D2	Standard position	920 mm (36.2 in)
			Low position	900 mm (35.4 in)
		CRF1000AL/DL		830 mm (32.7 in)
		CRF1000AL2/DL2		860 mm (33.9 in)
	Footpeg height		CRF1000A/D	352 mm (13.9 in)
			CRF1000A2/D2	372 mm (14.6 in)
			CRF1000AL/AL2/DL/DL2	313 mm (12.3 in)
	Ground clearance		CRF1000A/D	250 mm (9.8 in)
			CRF1000A2/D2	270 mm (10.6 in)
			CRF1000AL/AL2/DL/DL2	210 mm (8.3 in)
	Curb weight	CRF1000A	U/GS models	229 kg (505 lbs)
			ED/KO/FO models	230 kg (507 lbs)
		CRF1000A2	U/GS models	242 kg (534 lbs)
			ED model	243 kg (536 lbs)
		CRF1000AL		229 kg (505 lbs)
		CRF1000AL2		242 kg (534 lbs)
		CRF1000D	U/GS/ models	239 kg (527 lbs)
			ED/KO models	240 kg (529 lbs)
		CRF1000D2	ED model	253 kg (558 lbs)
			KO model	255 kg (562 lbs)
			GS/U models	252 kg (556 lbs)
		CRF1000DL	IN model	240 kg (529 lbs)
			MA/TH models	239 kg (527 lbs)
		CRF1000DL2		252 kg (556 lbs)
	Maximum weight capacity		CRF1000A/AL/D/DL	213 kg (470 lbs)
			CRF1000A2/D2/AL2/DL2	195 kg (430 lbs)

ITEM				SPECIFICATIONS
FRAME	Frame type			Semi double cradle
	Front suspension			Telescopic fork
	Front axle travel	CRF1000A/AL/D/DL		204 mm (8.0 in)
		CRF1000A2/AL2/D2/DL2		224 mm (8.8 in)
	Rear suspension			Swingarm
	Rear axle travel	CRF1000A/AL/D/DL		220 mm (8.7 in)
		CRF1000A2/AL2/D2/DL2		240 mm (9.4 in)
	Front tire size			90/90-21M/C 54H
	Rear tire size			150/70R18M/C 70H
	Front tire brand			D610FW (DUNLOP)
				A41F G (BRIDGESTONE)
	Rear tire brand			D610W (DUNLOP)
				A41R G (BRIDGESTONE)
	Front brake			Hydraulic double disc
	Rear brake			Hydraulic single disc
	Caster angle			27° 30’
	Trail length	CRF1000A/AL/D/DL		113 mm (4.4 in)
		CRF1000A2/AL2/D2/DL2		111 mm (4.4 in)
	Fuel tank capacity	CRF1000A/AL/D/DL		18.8 liters (4.97 US gal, 4.14 Imp gal)
		CRF1000A2/AL2/D2/DL2		24.2 liters (6.39 US gal, 5.32 Imp gal)
ENGINE	Cylinder arrangement			2 cylinders in-line, slant angle 22.5°
	Bore and stroke	Except TH model		92.0 x 75.1 mm (3.62 x 2.96 in)
		TH models		92.000 x 75.148 mm (3.6220 x 2.9586 in)
	Displacement	Except TH model		998 cm^3 (60.9 cu-in)
		TH model		999.11 cm^3 (60.946 cu-in)
	Compression ratio			10.0 : 1
	Valve train			Chain driven, OHC with valve lifter and rocker arm
	Intake valve	opens	at 1 mm (0.04 in) lift	5° BTDC
		closes	at 1 mm (0.04 in) lift	40° ABDC
	Exhaust valve	opens	at 1 mm (0.04 in) lift	40° BBDC
		closes	at 1 mm (0.04 in) lift	5° ATDC
	Lubrication system			Forced pressure and dry sump
	Oil pump type			Trochoid
	Cooling system			Liquid cooled
	Air filtration			Viscous paper element
	Engine dry weight			76.4 kg (168.4 lbs)
	Firing order			1 - 2
FUEL DELIVERY SYSTEM	Type			PGM-FI
	Throttle bore			44 mm (1.73 in)
DRIVE TRAIN (CRF1000A/A2/ AL/AL2)	Clutch system			Multi-plate, wet
	Clutch operation system			Cable operating
	Transmission			Constant mesh, 6-speeds
	Primary reduction			1.733 (78/45)
	Final reduction	Except FO/IN models		2.625 (42/16)
		FO/IN models		2.470 (42/17)
	Gear ratio		1st	2.866 (43/15)
			2nd	1.888 (34/18)
			3rd	1.480 (37/25)
			4th	1.230 (32/26)
			5th	1.100 (33/30)
			6th	0.968 (31/32)
	Gearshift pattern			Left foot operated return system, 1 - N - 2 - 3 - 4 - 5 - 6

ITEM				SPECIFICATIONS
DRIVE TRAIN (CRF1000D/D2/ DL/DL2)	Clutch system			2 Multi-plate wet clutches
	Clutch operation system			Automatic
	Transmission			Constant mesh, 6-speeds
	Primary reduction			1.883 (81/43)
	Final reduction	Except IN models		2.625 (42/16)
		IN model		2.470 (42/17)
	Gear ratio		1st	2.562 (41/16)
			2nd	1.761 (37/21)
			3rd	1.375 (33/24)
			4th	1.133 (34/30)
			5th	0.972 (36/37)
			6th	0.882 (30/34)
	Gearshift pattern			Automatic and electric shift (left hand operated) return system, N - 1 - 2 - 3 - 4 - 5 - 6
ELECTRICAL	Ignition system			Full transistorized ignition
	Starting system			Electric starter motor
	Charging system			Triple phase output alternator
	Regulator/rectifier			FET shorted/triple phase full wave rectification
	Lighting system			Battery

FUEL SYSTEM SPECIFICATIONS

ITEM		SPECIFICATIONS
Throttle body identification number	Except GS/U/IN models	GNH3A
	GS/U/IN models	GNH3B
Engine idle speed		1,250 ± 100 min^{-1} (rpm)
Fuel pressure at idle		324 – 367 kPa (3.3 – 3.7 kgf/cm^2, 47 – 53 psi)
Fuel pump flow (at 12 V)		319 cm^3 (10.8 US oz, 11.2 Imp oz) minimum/10 seconds

COOLING SYSTEM SPECIFICATIONS

ITEM			SPECIFICATIONS
Coolant capacity	Radiator and engine		1.65 liters (1.74 US qt, 1.45 Imp qt)
	Reserve tank		0.33 liter (0.35 US qt, 0.29 Imp qt)
Radiator cap relief pressure			108 – 137 kPa (1.1 – 1.4 kgf/cm^2, 16 – 20 psi)
Thermostat		Begin to open	80 – 84°C (176 – 183°F)
		Fully open	95°C (203°F)
		Valve lift	8 mm (0.3 in) minimum
Recommended antifreeze		Except IN/TH/MA models	High quality ethylene glycol antifreeze containing silicate-free corrosion inhibitors
		IN/TH/MA models	Honda PRE-MIX coolant
Standard coolant concentration		Except IN/TH/MA models	1:1 mixture with distilled water

FRONT WHEEL/SUSPENSION/STEERING SPECIFICATIONS

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Cold tire pressure	Driver only	CRF1000A/AL/D/DL	200 kPa (2.00 kgf/cm^2, 29 psi)	–
		CRF1000A2/AL2/D2/DL2	225 kPa (2.25 kgf/cm^2, 33 psi)	–
	Driver and passenger		225 kPa (2.25 kgf/cm^2, 33 psi)	–
Axle runout			–	0.2 (0.01)
Wheel rim runout	Radial		–	1.0 (0.04)
	Axial		–	1.0 (0.04)
Wheel hub-to-rim distance			28.5 – 30.5 (1.12 – 1.20)	–
Wheel balance weight			–	60 g (2.1 oz) max.
Fork	Spring free length	CRF1000A/D	433.7 (17.07)	425.0 (16.73)
		CRF1000A2/D2	465.7 (18.33)	456.4 (17.97)
		CRF1000AL/AL2/DL/DL2	394.2 (15.52)	386.3 (15.21)
	Recommended fork fluid		Honda Ultra Cushion Oil 10W	–
	Fluid level	CRF1000A/D	95.0 (3.74)	–
		CRF1000A2/D2	110.0 (4.33)	–
		CRF1000AL/AL2/DL/DL2	104.0 (4.09)	–
	Fluid capacity	CRF1000A/D	721 ± 2.5 cm^3 (24.4 ± 0.1 US oz, 25.4 ± 0.1 Imp oz)	–
		CRF1000A2/D2	695 ± 2.5 cm^3 (23.5 ± 0.1 US oz, 24.5 ± 0.1 Imp oz)	–
		CRF1000AL/AL2/DL/DL2	710 ± 2.5 cm^3 (24.0 ± 0.1 US oz, 25.0 ± 0.1 Imp oz)	–
	Pre-load adjuster standard position	CRF1000A/A2/AL/DL	5 turns from the full soft position	–
		CRF1000D/D2	8.5 turns from the full soft position	–
		CRF1000AL2/DL2	10.5 turns from the full soft position	–
	Rebound adjuster standard position	CRF1000A/A2/D/D2	2 1/4 turns from maximum position	–
		CRF1000AL/AL2/DL/DL2	2 1/2 turns from maximum position	–
	Compression adjuster standard position	CRF1000A/D	8 clicks from maximum position	–
		CRF1000A2/D2	4 clicks from maximum position	–
		CRF1000AL/AL2/DL/DL2	10 clicks from maximum position	–
Steering head bearing pre-load			9.8 – 14.7 N (1.0 – 1.5 kgf, 2.2 – 3.3 lbf)	–

REAR WHEEL/SUSPENSION SPECIFICATIONS

Unit: mm (in)

ITEM				STANDARD	SERVICE LIMIT
Cold tire pressure	Driver only	CRF1000A/AL/D/DL		250 kPa (2.50 kgf/cm^2, 36 psi)	–
		CRF1000A2/AL2/D2/DL2		280 kPa (2.80 kgf/cm^2, 41 psi)	–
	Driver and passenger			280 kPa (2.80 kgf/cm^2, 41 psi)	–
Axle runout				–	0.2 (0.01)
Wheel rim runout			Radial	–	1.0 (0.04)
			Axial	–	1.0 (0.04)
Wheel hub-to-rim distance				5.2 – 7.2 (0.205 – 0.283)	–
Wheel balance weight				–	60 g (2.1 oz) max.
Drive chain	Slack	CRF1000A/AL/D/DL		35 – 45 (1.4 – 1.8)	–
		CRF1000A2/AL2/D2/DL2		45 – 55 (1.8 – 2.2)	–
	Size/link			DID525HV3-124LE	–
Shock absorber	Pre-load adjuster standard position			7 clicks from minimum position (first click is "0" position)	–
	Rebound adjuster standard setting	CRF1000A/D		9 clicks from maximum position	–
		CRF1000A2/D2		13 clicks from maximum position	–
		CRF1000AL/DL/AL2/DL2		17 clicks from maximum position	–
	Compression adjuster standard position	CRF1000A/D		14 clicks from maximum position	–
		CRF1000A2/D2		19 clicks from maximum position	–
		CRF1000AL/DL/AL2/DL2		13 clicks from maximum position	–

BATTERY/CHARGING SYSTEM SPECIFICATIONS

ITEM			SPECIFICATIONS
Battery	Type		HY110
	Capacity		12 V – 6.0 Ah (20 HR)
	Current leakage		0.66 mA max.
	Voltage (20°C/68°F)	Fully charged	13.5 – 14.0 V
		Needs charging	Below 10.8 V
Alternator	Capacity		0.49 kW/5,000 min^{-1} (rpm)
	Charging coil resistance (20°C/68°F)		0.1 – 1.0 Ω

LIGHTS/METERS/SWITCHES SPECIFICATIONS

ITEM			SPECIFICATIONS
Bulbs	Headlight	Hi	LED
		Lo	LED
	Brake/taillight		LED
	Position light		LED
	Front turn signal light		LED
	Rear turn signal light		LED
	License light		12 V – 5 W
	Instrument light		LED
	Turn signal indicator		LED
	High beam indicator		LED
	Neutral indicator		LED
	Low oil pressure indicator		LED
	Fuel reserve indicator		LED
	MIL		LED
	High coolant temperature indicator		LED
	HISS indicator		LED
	ABS indicator		LED
	Rear ABS indicator		LED
	Parking brake indicator (CRF1000D/D2/DL/DL2)		LED
	Torque control indicator		LED
	Torque control off indicator		LED
Fuse	Main fuse		30 A
	FI fuse		15 A
	ABS M fuse		30 A
	ABS FSR fuse		30 A
	DCT M fuse (CRF1000D/D2/DL/DL2)		30 A
	Sub fuse	CRF1000A/A2/AL/AL2	20 A x 2, 10 A x 6
		CRF1000D/D2/DL/DL2	20 A x 2, 10 A x 7
ECT sensor resistance		40°C (104°F)	1.0 – 1.3 kΩ
		100°C (212°F)	0.14 – 0.18 kΩ
Open air temperature sensor resistance 25°C (77°F)			4.9 – 5.1 kΩ
Fuel level sensor resistance		Full	6.4 – 10.4 Ω
		Empty	204.8 – 210.8 Ω

TORQUE VALUES

ENGINE & FRAME TORQUE VALUES

FRAME BODY PANELS/EXHAUST SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Windscreen mounting screw	4	5	0.42 (0.04, 0.3)	
Skid plate mounting bolt	3	8	26 (2.7, 19)	
Front side cover mounting screw (CRF1000A2/D2/AL2/DL2)	6	5	0.42 (0.04, 0.3)	
Left rear cover mounting bolt	2	6	12 (1.2, 9)	
Pillion step bracket mounting bolt	4	8	32 (3.3, 24)	
Brake hose oil bolt	2	10	34 (3.5, 25)	
Brake pipe joint	2	10	14 (1.4, 10)	Apply brake fluid to the threads.
Exhaust pipe cover C pan screw	3	6	9.0 (0.9, 6.6)	
Exhaust outer cover screw	1	6	9.0 (0.9, 6.6)	
Exhaust pipe joint nut	4	8	20 (2.0, 15)	
Exhaust pipe cover A pan screw	1	6	9.0 (0.9, 6.6)	
Exhaust pipe cover B front band screw	1	–	1.2 (0.1, 0.9)	
Exhaust pipe cover B rear band screw	1	–	3.5 (0.4, 2.6)	
Muffler band bolt	2	8	17 (1.7, 13)	
Muffler cover pan screw	2	6	9.0 (0.9, 6.6)	
Tail cap cover bolt	2	6	9.0 (0.9, 6.6)	
Exhaust pipe stud bolt	4	8	–	See page 2-18
Sidestand pivot nut	1	10	42 (4.3, 31)	See page 26-60 Self-lock nut

MAINTENANCE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Air cleaner element mounting screw	4	5	1.1 (0.1, 0.8)	Tapping screw
Air cleaner cover screw	8	5	1.1 (0.1, 0.8)	Tapping screw
Spark plug	4	10	22 (2.2, 16)	
Valve adjusting screw lock nut	4	5	10 (1.0, 7)	Apply engine oil to the threads and seating surface.
Timing hole cap	1	14	6.0 (0.6, 4.4)	Apply grease to the threads.
Crankshaft hole cap	1	30	8.0 (0.8, 5.9)	Apply grease to the threads.
Engine oil drain bolt	2	12	30 (3.1, 22)	
Oil filter boss (crankcase side)	1	20	–	Apply locking agent to the threads. See page 3-12
Engine oil filter cartridge	1	20	26 (2.7, 19)	Apply engine oil to the threads.
Clutch oil filter cover bolt (CRF1000D/D2/DL/DL2)	2	6	12 (1.2, 9)	
Rear axle nut	1	18	100 (10.2, 74)	Self-lock nut
Drive chain adjuster lock nut	2	8	27 (2.8, 20)	UBS-nut
Drive sprocket bolt	1	10	54 (5.5, 40)	
Driven sprocket nut	5	12	100 (10.2, 74)	Apply engine oil to the threads and seating surface. Self-lock nut
Parking brake adjuster lock nut (CRF1000D/D2/DL/DL2)	1	8	17.2 (1.8, 13)	
Front spoke	36	BC 3.5	3.7 (0.4, 2.7)	
Rear spoke	32	BC 3.5	3.7 (0.4, 2.7)	

ENGINE REMOVAL/INSTALLATION

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Right lower frame bolt	4	10	44 (4.5, 32)	
Swingarm pivot nut	1	16	80 (8.2, 59)	Apply engine oil to the threads and seating surface. Self-lock nut
Rear lower nut (10 mm)	1	10	44 (4.5, 32)	
Front lower nut (10 mm)	1	10	44 (4.5, 32)	
Front middle nut (8 mm)	2	8	32 (3.3, 24)	
Front middle nut (10 mm)	1	10	44 (4.5, 32)	
Front upper bolt	3	8	32 (3.3, 24)	
Rear upper bolt (8 x 25 mm)	2	8	32 (3.3, 24)	
Rear upper nut (8 mm)	1	8	32 (3.3, 24)	
Drive sprocket bolt	1	10	54 (5.5, 40)	
EOT sensor (CRF1000D/D2/DL/DL2)	1	10	15 (1.5, 11)	
Clutch EOP sensor wire stay bolt (CRF1000D/D2/DL/DL2)	1	6	12 (1.2, 9)	
Clutch EOP sensor cover bolt (CRF1000D/D2/DL/DL2)	2	6	10 (1.0, 7)	
Shift spindle switch terminal nut (CRF1000A/A2/AL/AL2)	1	4	1.7 (0.2, 1.3)	
Neutral switch terminal nut (CRF1000A/A2/AL/AL2)	1	4	1.7 (0.2, 1.3)	
Neutral switch terminal nut (CRF1000D/D/DL/DL2)	1	4	1.7 (0.2, 1.3)	

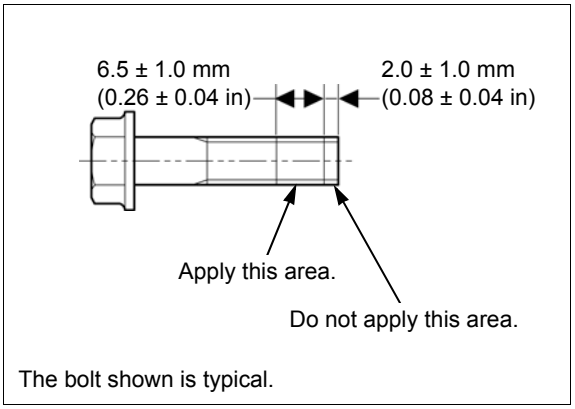
LIGHTS/METERS/SWITCHES

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
License light cover screw	2	5	3.8 (0.4, 2.8)	
Combination meter mounting screw/ washer	4	5	1.0 (0.1, 0.7)	Tapping screw
EOP switch (CRF1000A/A2/AL/AL2)	1	PT 1/8	12 (1.2, 9)	Apply sealant to the threads. See page 22-19
EOP switch terminal bolt/washer (CRF1000A/A2/AL/AL2)	1	4	2.0 (0.2, 1.5)	
EOP sensor (CRF1000D/D2/DL/DL2)	1	10	22 (2.2, 16)	
Ignition switch mounting bolt	2	8	26 (2.7, 19)	Replace with a new one.
Sidestand switch mounting bolt	1	6	10 (1.0, 7)	Replace with a new one.
Gear position sensor mounting bolt (CRF1000A/A2/AL/AL2)	1	6	12 (1.2, 9)	
Neutral switch (CRF1000A/A2/AL/AL2)	1	10	12 (1.2, 9)	
Neutral switch terminal nut (CRF1000A/A2/AL/AL2)	1	4	1.7 (0.2, 1.3)	
Shift spindle switch (CRF1000A/A2/AL/AL2)	1	10	12 (1.2, 9)	
Shift spindle switch terminal nut (CRF1000A/A2/AL/AL2)	1	4	1.7 (0.2, 1.3)	

OTHERS

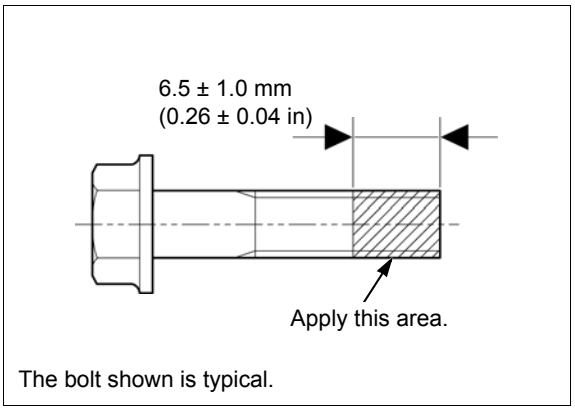
ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Clutch lever pivot bolt (CRF1000A/A2/AL/AL2)	1	6	1.0 (0.1, 0.7)	
Clutch lever pivot nut (CRF1000A/A2/AL/AL2)	1	6	5.9 (0.6, 4.4)	Self-lock nut
Lower crankcase sealing bolt (18 mm) (After '17 except BR model)	2	18	29 (3.0, 21)	Apply locking agent to the threads. Coating width:5 ± 1 mm (0.2 ± 0.04 in) except 2 ± 1 (0.1 ± 0.04 in) from bolt end

*1: Apply locking agent to the threads as shown.



The bolt shown is typical.

*2: Apply locking agent to the threads as shown.



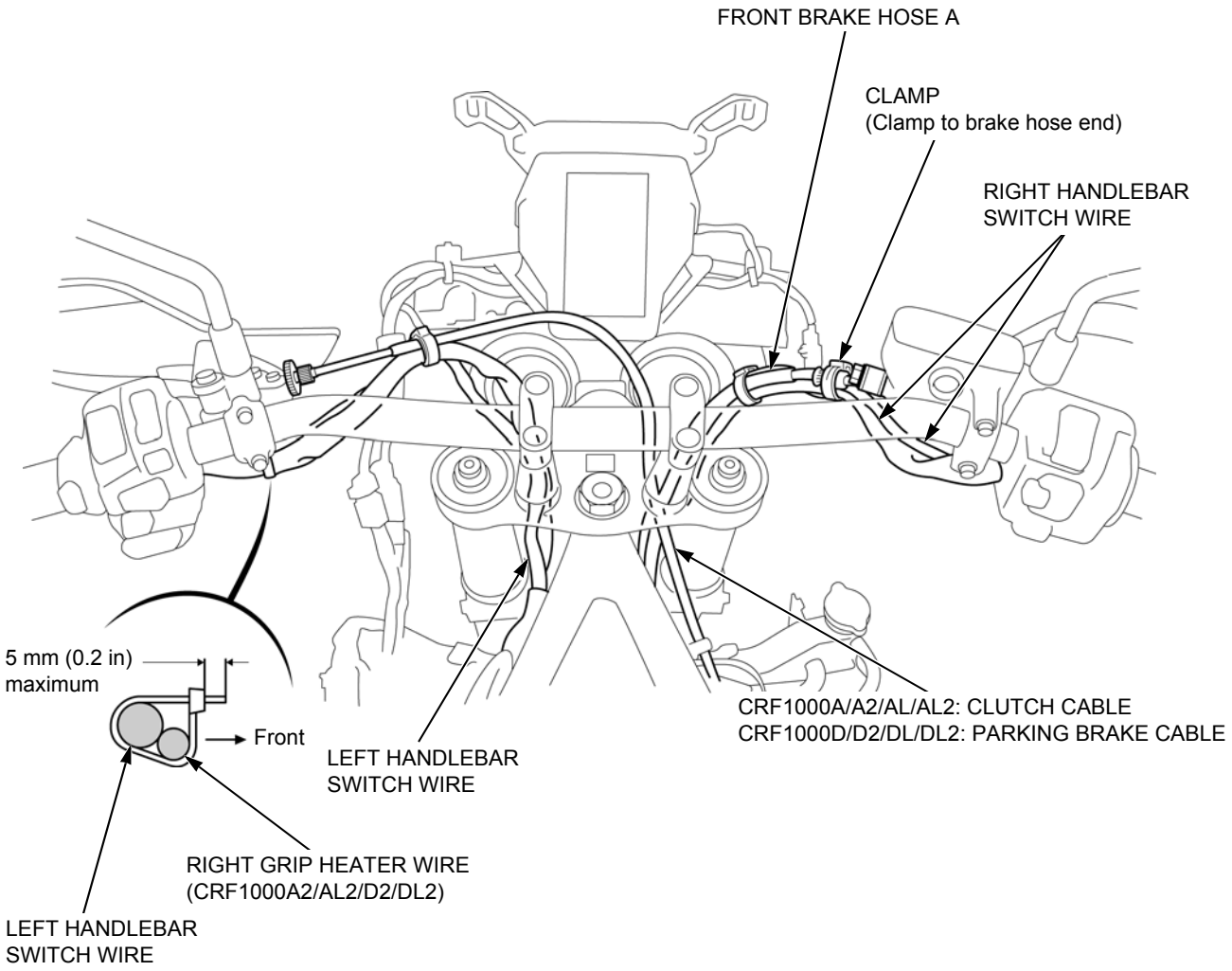
The bolt shown is typical.

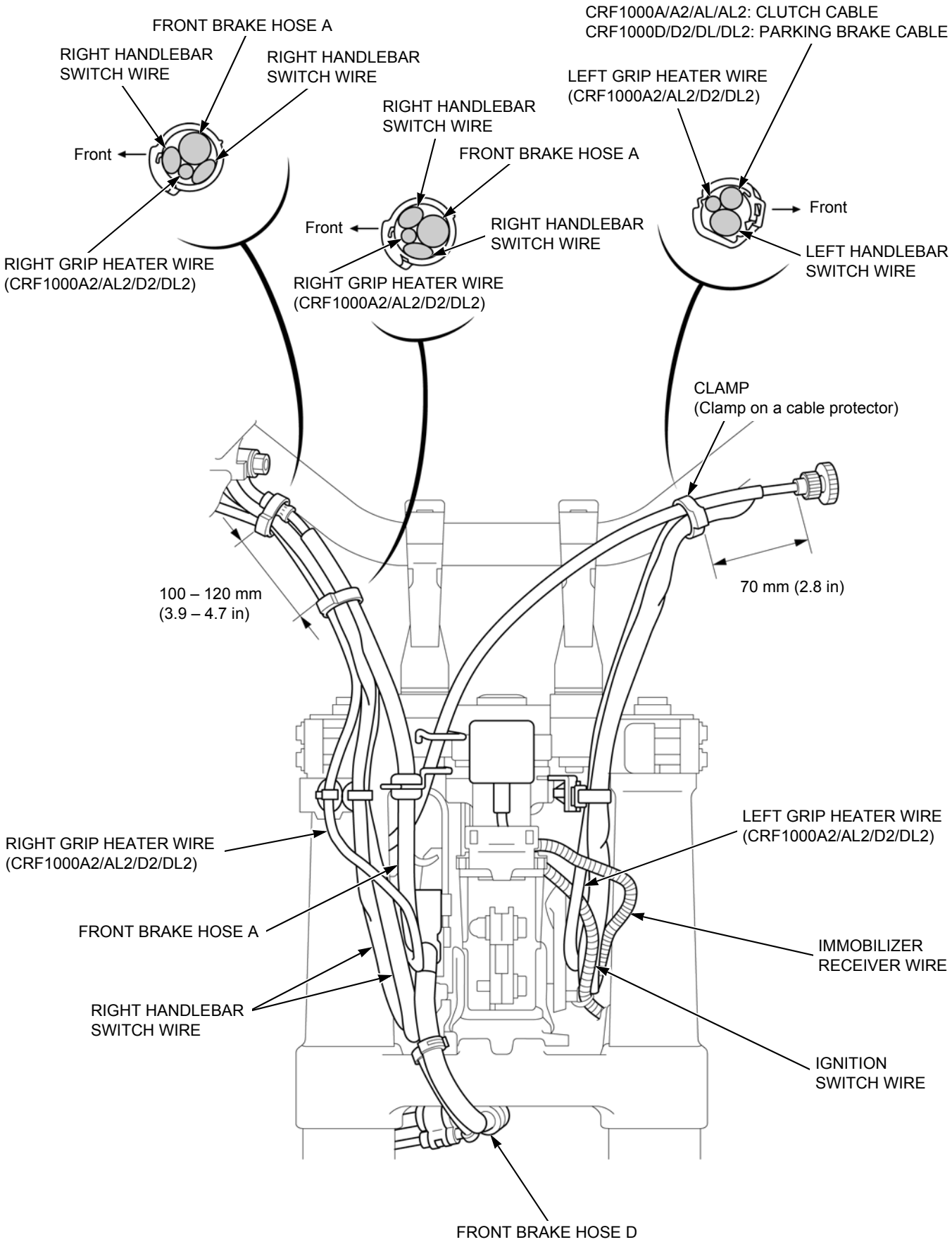
LUBRICATION & SEAL POINTS

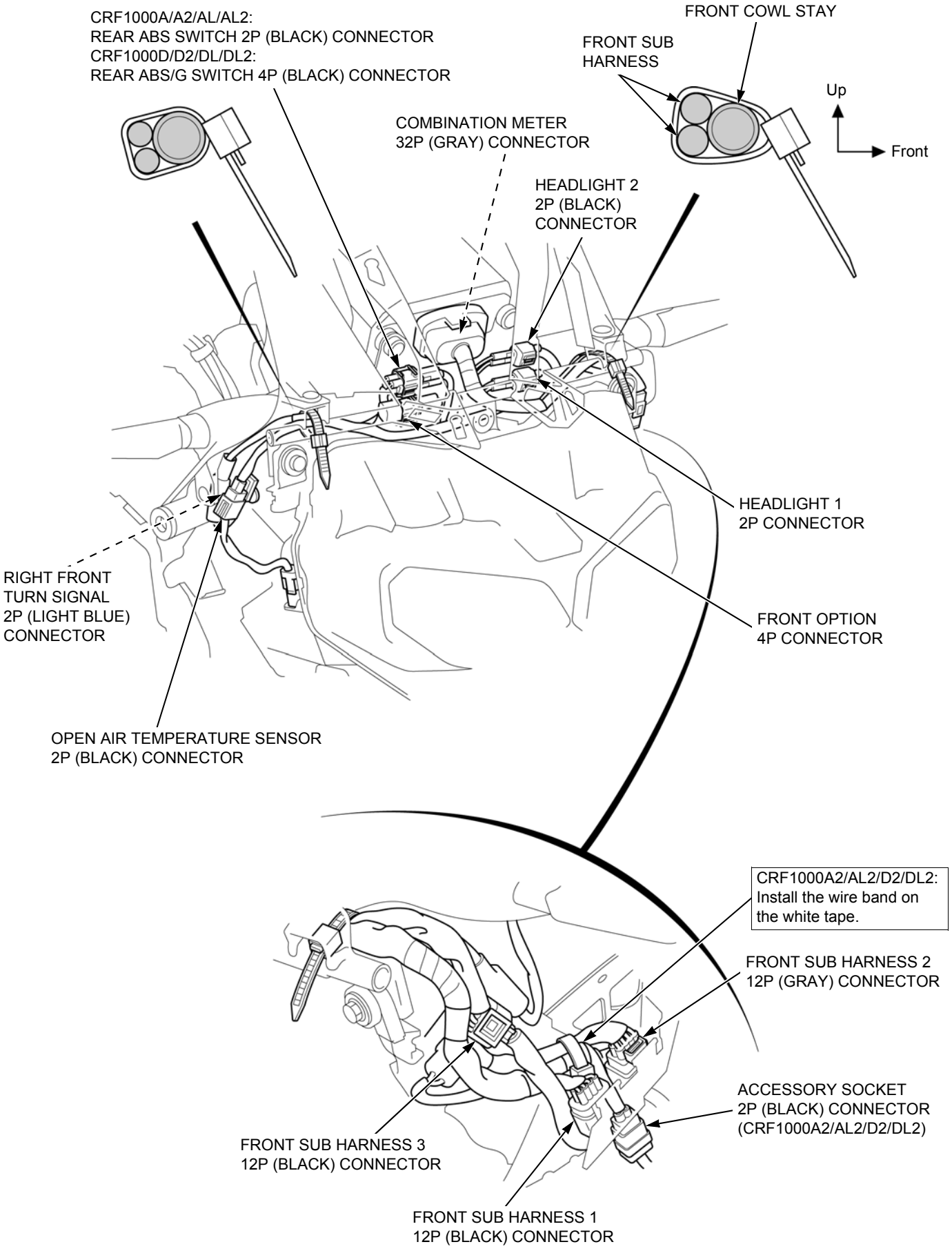
FRAME

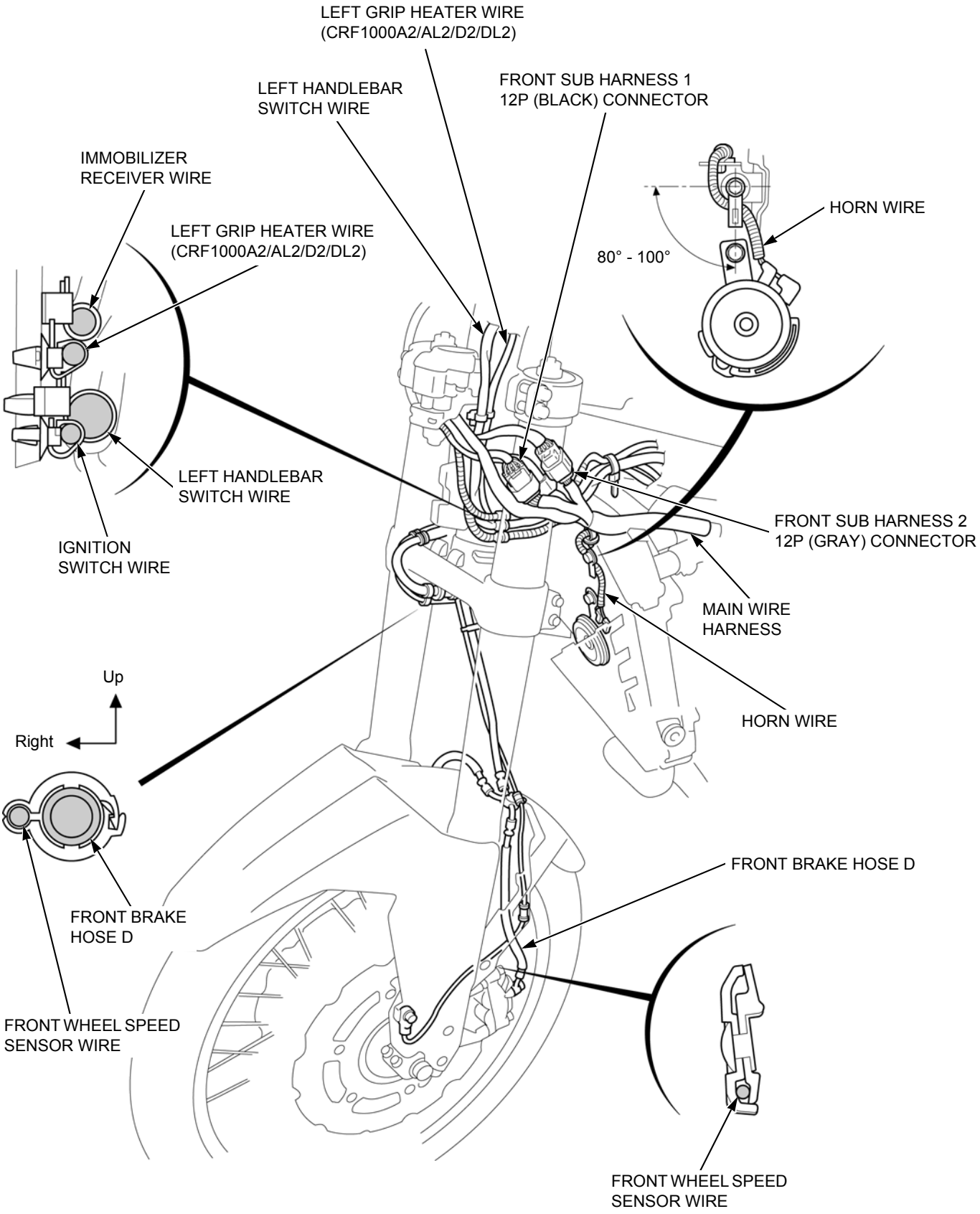
MATERIAL	LOCATION	REMARKS
Urea based multi-purpose extreme pressure grease NLGI #2 (EXCELITE EP2 manufactured by KYODO YUSHI CO., LTD. or equivalent)	Steering head bearing rolling contact surface	3 – 5 g (0.1 – 0.2 oz)
	Steering head dust seal lips	
Lithium based multi-purpose grease NLGI #2 or equivalent	Seat catch hook sliding area	
	Gearshift pedal pivot sliding area (grease groove) (CRF1000A/A2/AL/AL2)	
	Throttle cable end and throttle grip pipe flange groove	
	Wheel dust seal lips	
	Rear wheel hub O-ring (driven flange side)	
	Rear brake middle arm pivot sliding surface	
	Parking brake stopper stay teeth and lock lever pivot sliding surface (CRF1000D/D2/DL/DL2)	
	Parking brake lever pivot sliding surface (CRF1000D/D2/DL/DL2)	
	Clutch lever pivot sliding area (CRF1000A/A2/AL/AL2)	
	Throttle pipe-to-APS contacting area	See page 26-116
Molybdenum disulfide grease (containing more than 3% molybdenum disulfide, NLGI #2 or equivalent)	Sidestand collar outer surface	
	Sidestand pivot sliding surface	
	Swingarm pivot dust seal lips	
	Swingarm pivot needle bearings	
	Cushion arm dust seal lips	
	Cushion arm needle bearings	
	Cushion connecting rod needle bearings	
Cable lubricant	Seat lock cable outer inside	
Honda Bond A or an equivalent	Handlebar grip rubber inside	
ThreeBond 1521 or an equivalent	Swingarm cap mating surface	
	Rear brake pad retainer mating surface	
Silicone grease	Front brake lever pivot bolts sliding surface	0.10 g (0.004 oz) minimum
	Front brake lever-to-master piston contacting area	0.10 g (0.004 oz) minimum
	Rear brake master cylinder push rod sliding surface	0.10 g (0.004 oz) minimum
	Rear brake master cylinder push rod boot fitting area	0.10 g (0.004 oz) minimum
	Rear brake pad pin stopper ring	
	Brake caliper dust seals	
	Rear brake caliper sleeve sliding surface	0.4 g (0.01 oz) minimum
	Rear brake caliper pin bolt sliding surface	0.4 g (0.01 oz) minimum
	Parking brake push rod rolling surface (CRF1000D/D2/DL/DL2)	0.4 g (0.01 oz) minimum
	Parking brake piston sliding surface (CRF1000D/D2/DL/DL2)	0.4 g (0.01 oz) minimum
	Parking brake shaft threads (CRF1000D/D2/DL/DL2)	0.4 g (0.01 oz) minimum
	Parking brake shaft boot lips (CRF1000D/D2/DL/DL2)	0.4 g (0.01 oz) minimum
	Parking brake pin bolt sliding surface (CRF1000D/D2/DL/DL2)	0.4 g (0.01 oz) minimum
	Parking brake caliper bracket pin sliding surface (CRF1000D/D2/DL/DL2)	0.4 g (0.01 oz) minimum
DOT 4 brake fluid	Brake master piston and cups	
	Brake caliper piston	
	Brake caliper piston seals	
	Rear master cylinder reservoir hose joint O-ring	
Fork fluid	Fork cap O-ring	
	Fork dust seal and oil seal lips	
Dive chain lubricant designed specifically for O-ring chains or SAE #80-90 gear oil	Drive chain whole surface	

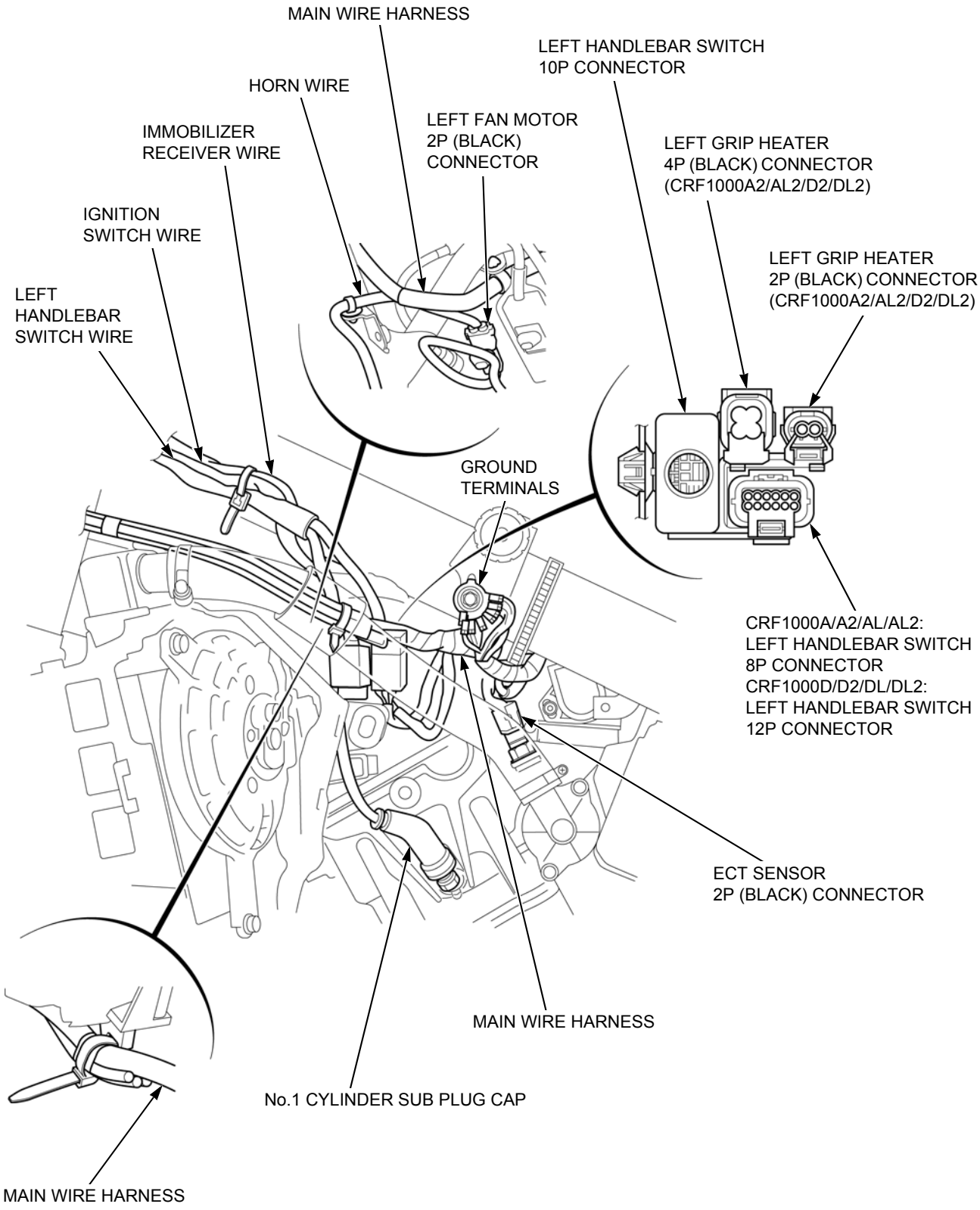
CABLE & HARNESS ROUTING



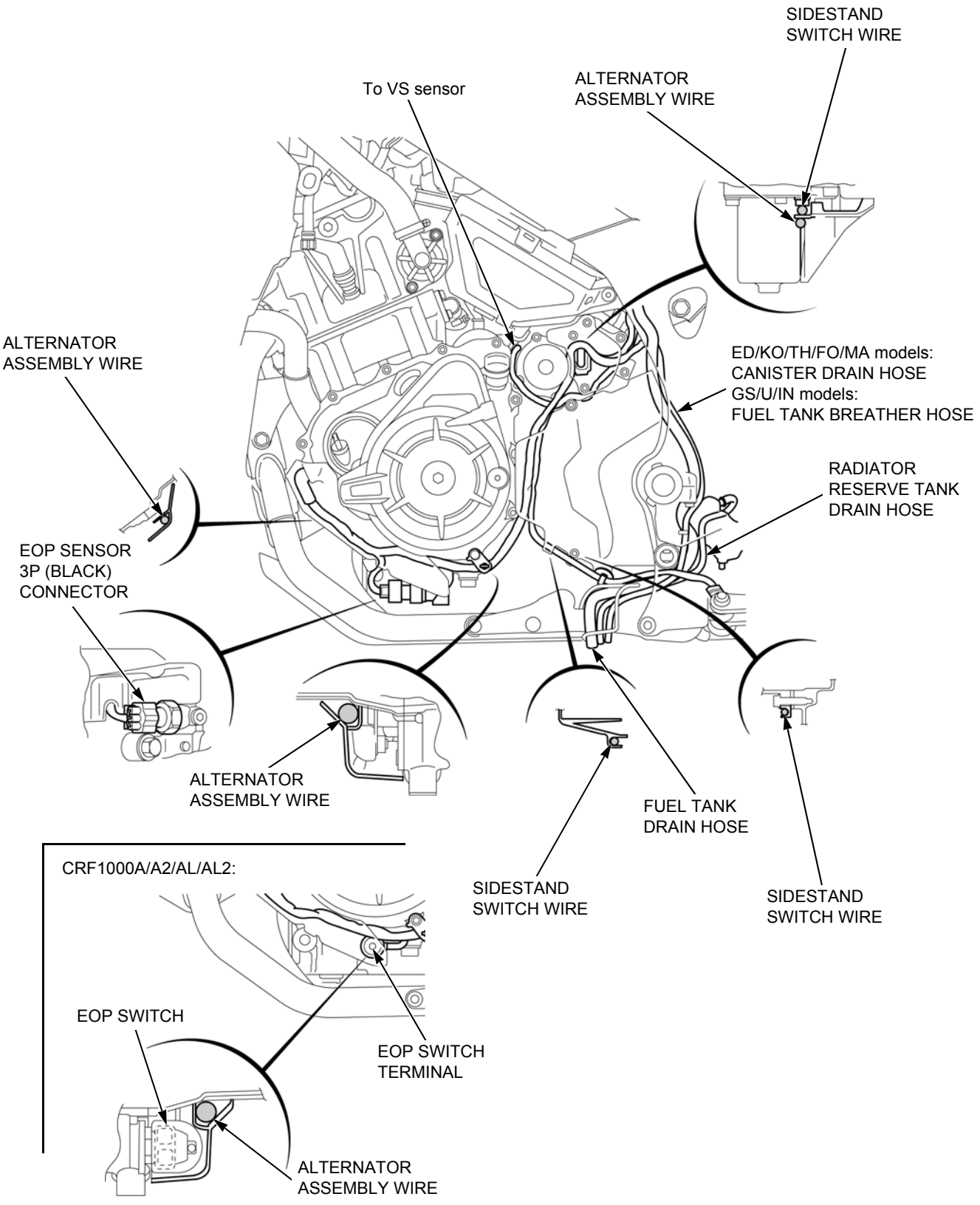

FRONT BRAKE HOSE A
RIGHT HANDLEBAR SWITCH WIRE
RIGHT HANDLEBAR SWITCH WIRE
Front
RIGHT GRIP HEATER WIRE (CRF1000A2/AL2/D2/DL2)
RIGHT HANDLEBAR SWITCH WIRE
FRONT BRAKE HOSE A
Front
RIGHT HANDLEBAR SWITCH WIRE
RIGHT GRIP HEATER WIRE (CRF1000A2/AL2/D2/DL2)
CRF1000A/A2/AL/AL2: CLUTCH CABLE
CRF1000D/D2/DL/DL2: PARKING BRAKE CABLE
LEFT GRIP HEATER WIRE (CRF1000A2/AL2/D2/DL2)
Front
LEFT HANDLEBAR SWITCH WIRE
CLAMP
(Clamp on a cable protector)
100 – 120 mm
(3.9 – 4.7 in)
70 mm (2.8 in)
RIGHT GRIP HEATER WIRE (CRF1000A2/AL2/D2/DL2)
FRONT BRAKE HOSE A
RIGHT HANDLEBAR SWITCH WIRE
LEFT GRIP HEATER WIRE (CRF1000A2/AL2/D2/DL2)
IMMOBILIZER RECEIVER WIRE
IGNITION SWITCH WIRE
FRONT BRAKE HOSE D

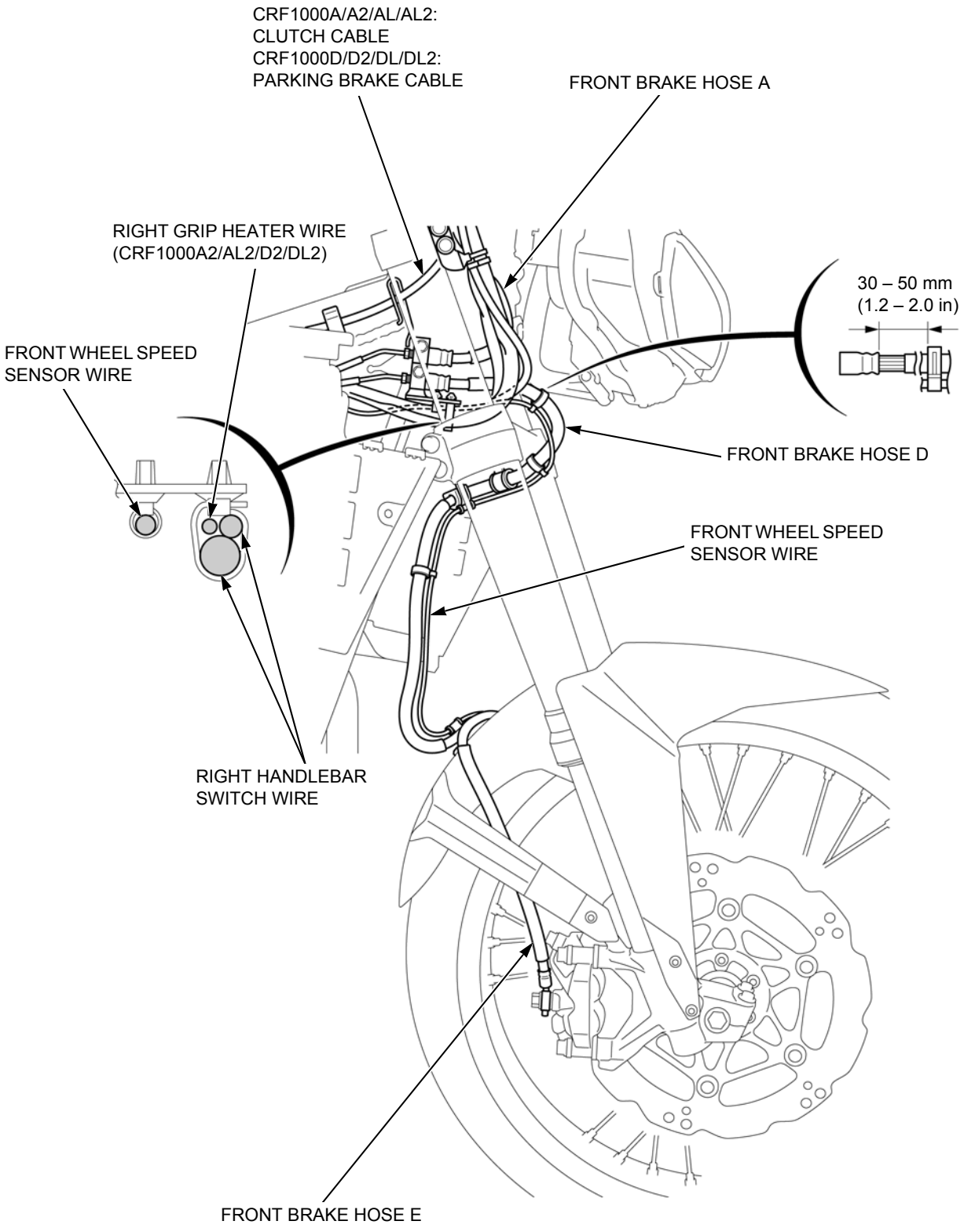

CRF1000A/A2/AL/AL2:
REAR ABS SWITCH 2P (BLACK) CONNECTOR
CRF1000D/D2/DL/DL2:
REAR ABS/G SWITCH 4P (BLACK) CONNECTOR
FRONT COWL STAY
FRONT SUB HARNESS
Up
Front
COMBINATION METER 32P (GRAY) CONNECTOR
HEADLIGHT 2 2P (BLACK) CONNECTOR
HEADLIGHT 1 2P CONNECTOR
FRONT OPTION 4P CONNECTOR
RIGHT FRONT TURN SIGNAL 2P (LIGHT BLUE) CONNECTOR
OPEN AIR TEMPERATURE SENSOR 2P (BLACK) CONNECTOR
CRF1000A2/AL2/D2/DL2: Install the wire band on the white tape.
FRONT SUB HARNESS 2 12P (GRAY) CONNECTOR
ACCESSORY SOCKET 2P (BLACK) CONNECTOR (CRF1000A2/AL2/D2/DL2)
FRONT SUB HARNESS 3 12P (BLACK) CONNECTOR
FRONT SUB HARNESS 1 12P (BLACK) CONNECTOR


LEFT GRIP HEATER WIRE
(CRF1000A2/AL2/D2/DL2)
LEFT HANDLEBAR
SWITCH WIRE
FRONT SUB HARNESS 1
12P (BLACK) CONNECTOR
IMMOBILIZER
RECEIVER WIRE
HORN WIRE
80° - 100°
LEFT GRIP HEATER WIRE
(CRF1000A2/AL2/D2/DL2)
LEFT HANDLEBAR
SWITCH WIRE
IGNITION
SWITCH WIRE
FRONT SUB HARNESS 2
12P (GRAY) CONNECTOR
MAIN WIRE
HARNESS
Up
Right
HORN WIRE
FRONT BRAKE HOSE D
FRONT BRAKE
HOSE D
FRONT WHEEL SPEED
SENSOR WIRE
FRONT WHEEL SPEED
SENSOR WIRE

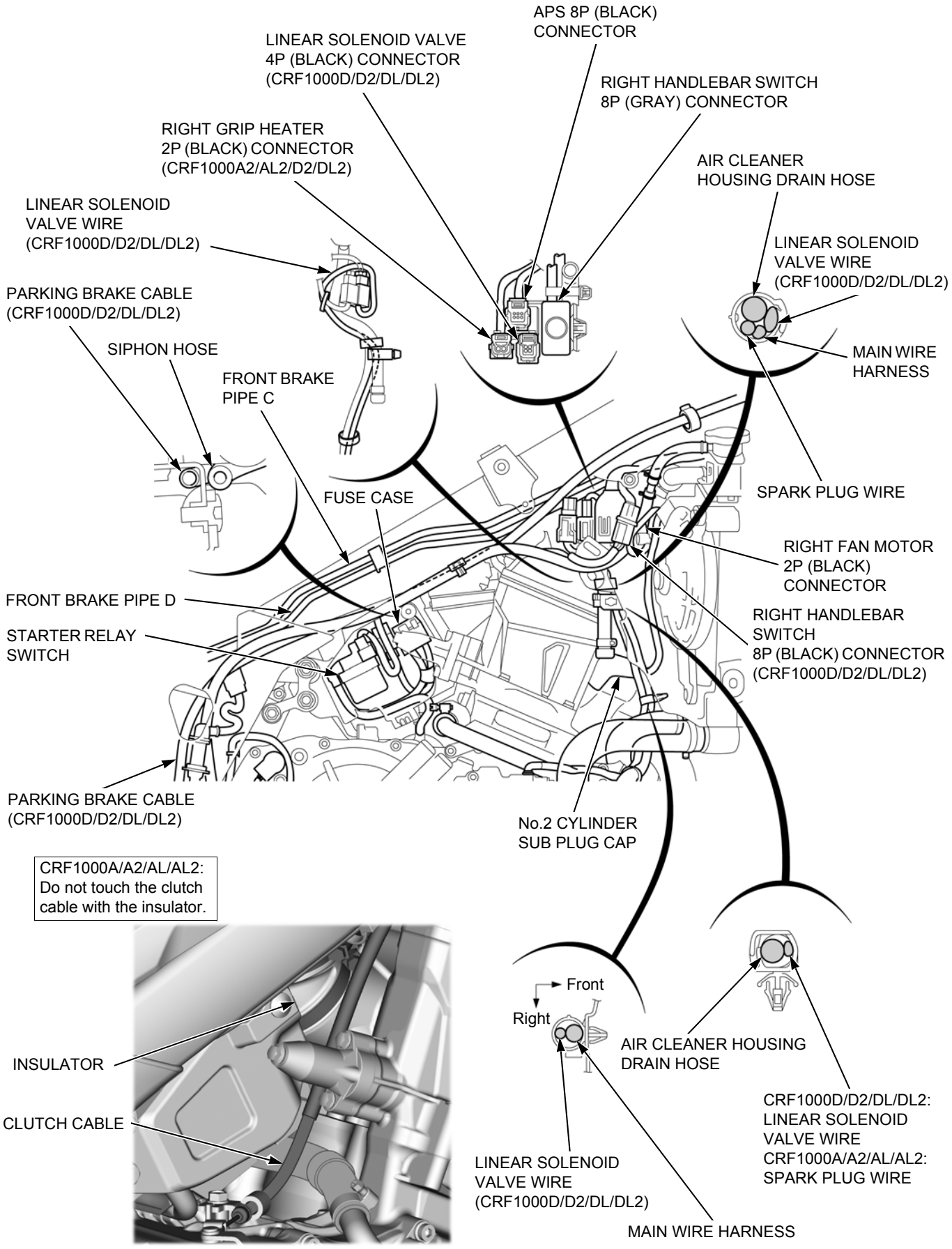

MAIN WIRE HARNESS
LEFT HANDLEBAR SWITCH 10P CONNECTOR
HORN WIRE
LEFT FAN MOTOR 2P (BLACK) CONNECTOR
IMMOBILIZER RECEIVER WIRE
LEFT GRIP HEATER 4P (BLACK) CONNECTOR (CRF1000A2/AL2/D2/DL2)
IGNITION SWITCH WIRE
LEFT GRIP HEATER 2P (BLACK) CONNECTOR (CRF1000A2/AL2/D2/DL2)
LEFT HANDLEBAR SWITCH WIRE
GROUND TERMINALS
CRF1000A/A2/AL/AL2: LEFT HANDLEBAR SWITCH 8P CONNECTOR
CRF1000D/D2/DL/DL2: LEFT HANDLEBAR SWITCH 12P CONNECTOR
ECT SENSOR 2P (BLACK) CONNECTOR
MAIN WIRE HARNESS
No.1 CYLINDER SUB PLUG CAP
MAIN WIRE HARNESS

CRF1000D Shown:

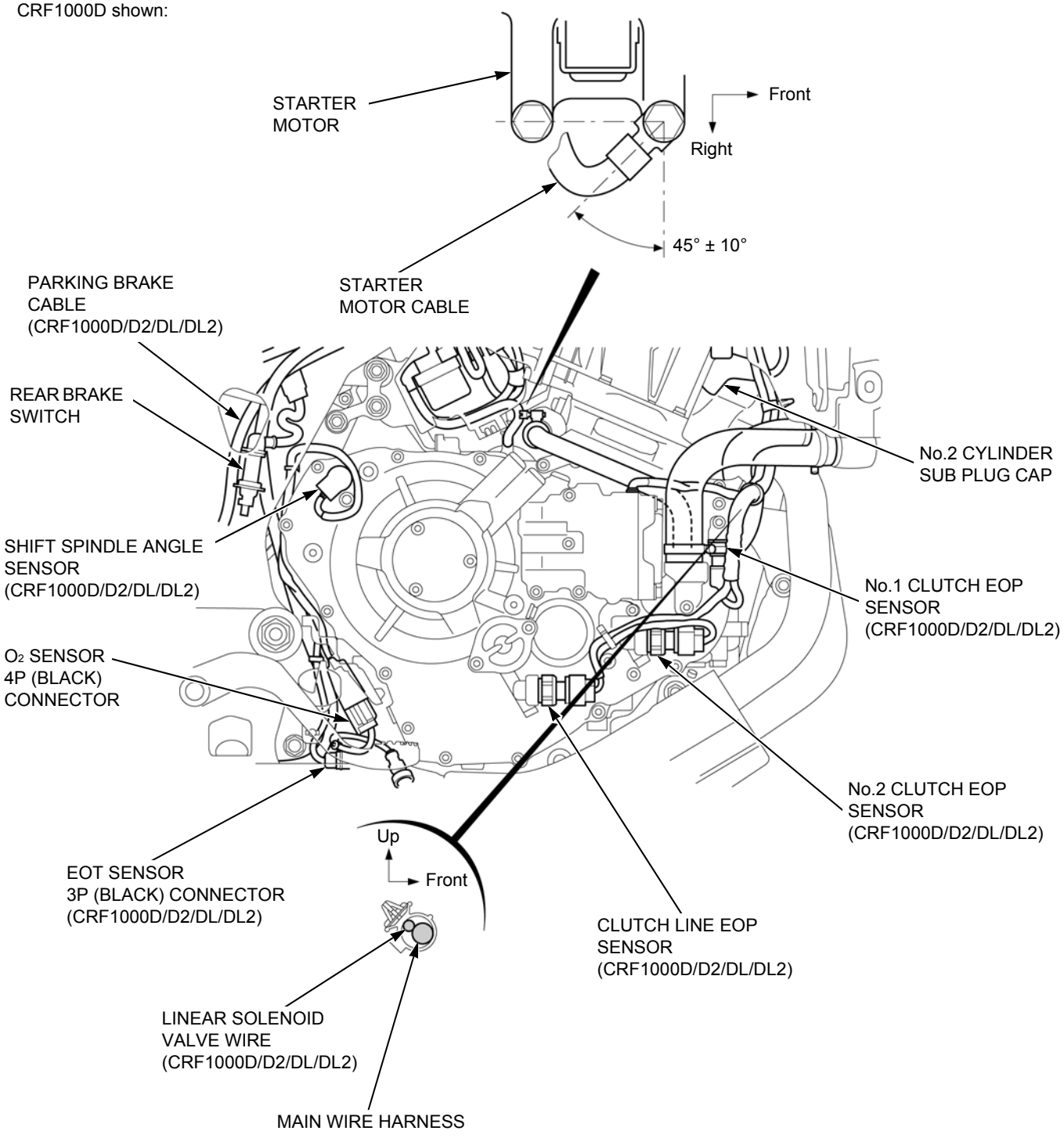


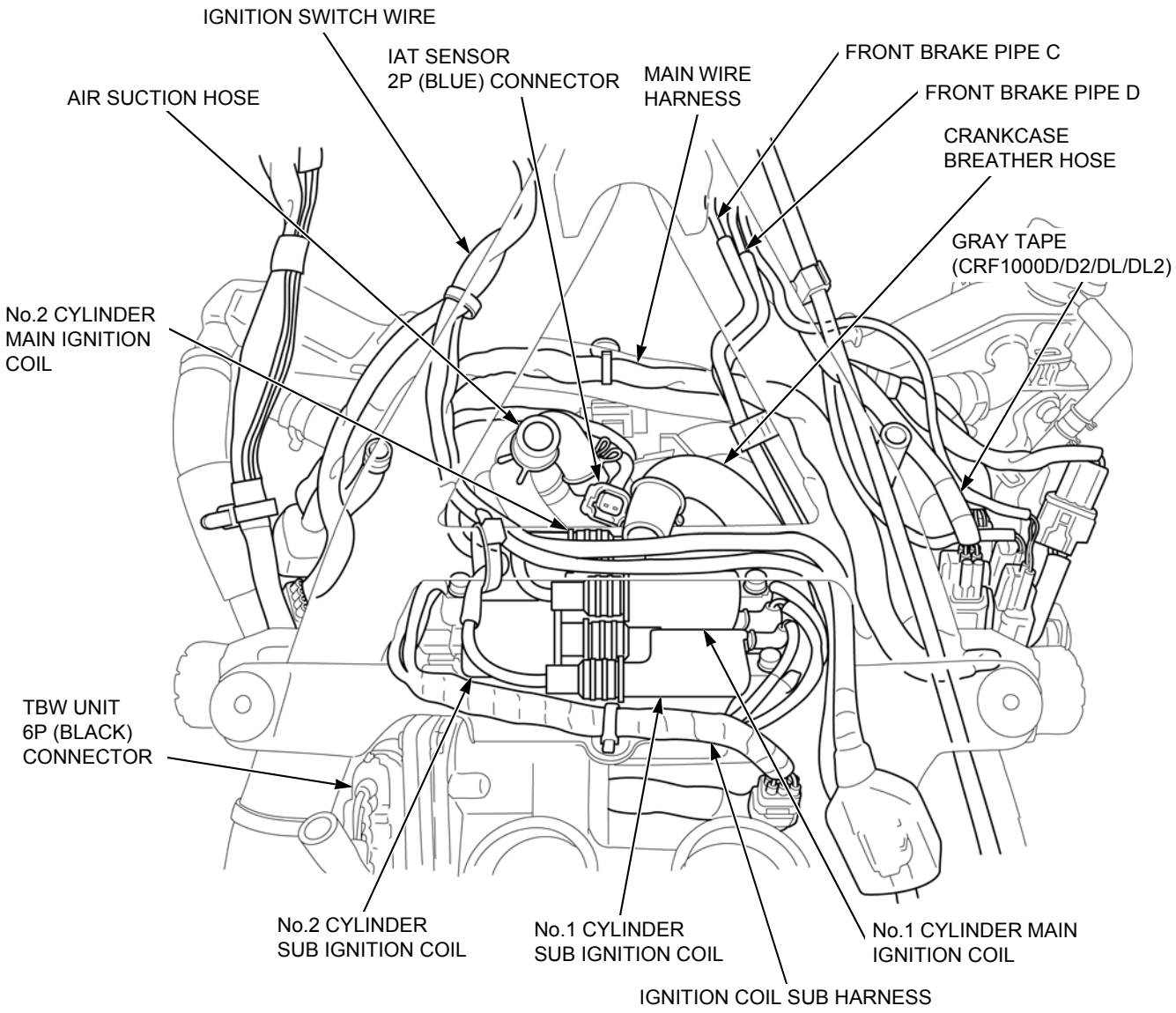

CRF1000A/A2/AL/AL2:
CLUTCH CABLE
CRF1000D/D2/DL/DL2:
PARKING BRAKE CABLE
FRONT BRAKE HOSE A
RIGHT GRIP HEATER WIRE
(CRF1000A2/AL2/D2/DL2)
30 – 50 mm
(1.2 – 2.0 in)
FRONT WHEEL SPEED
SENSOR WIRE
FRONT BRAKE HOSE D
FRONT WHEEL SPEED
SENSOR WIRE
RIGHT HANDLEBAR
SWITCH WIRE
FRONT BRAKE HOSE E

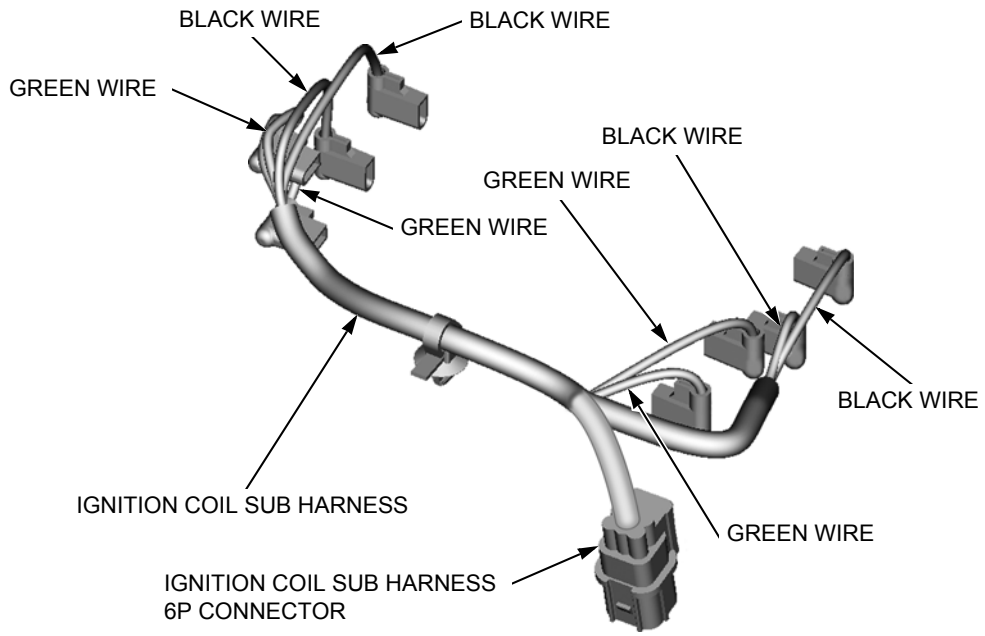
CRF1000D shown:

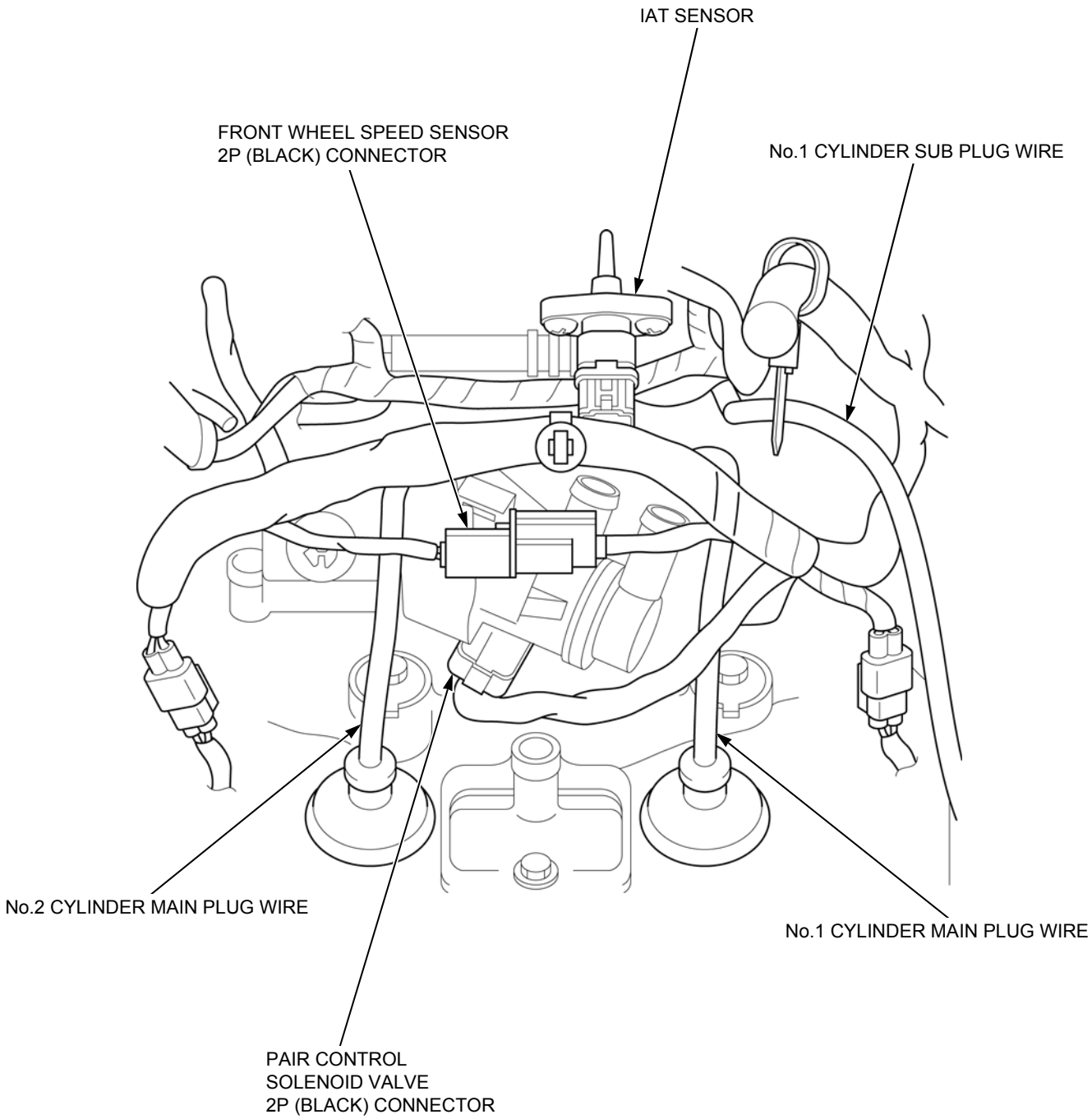


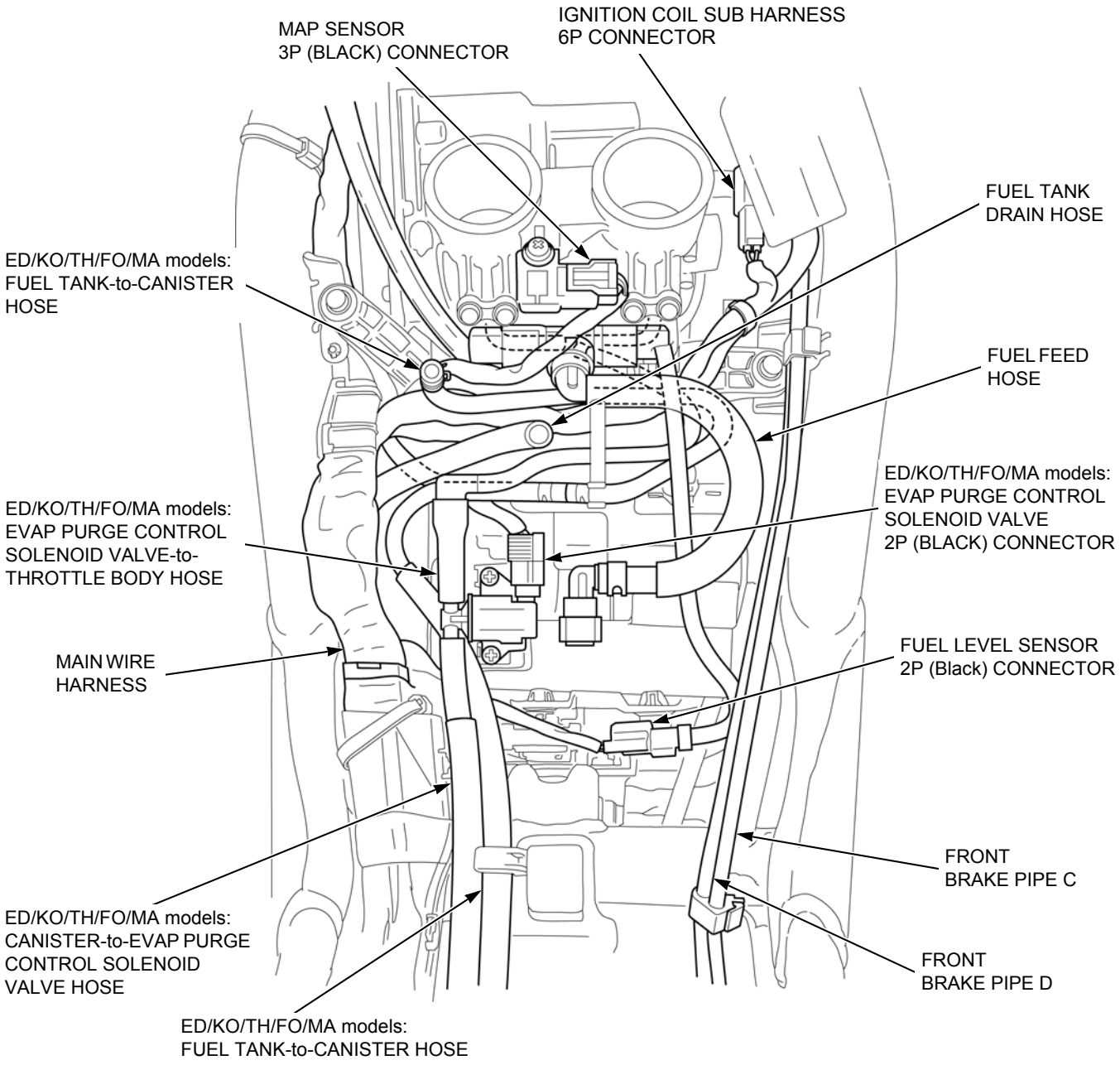
CRF1000D shown:

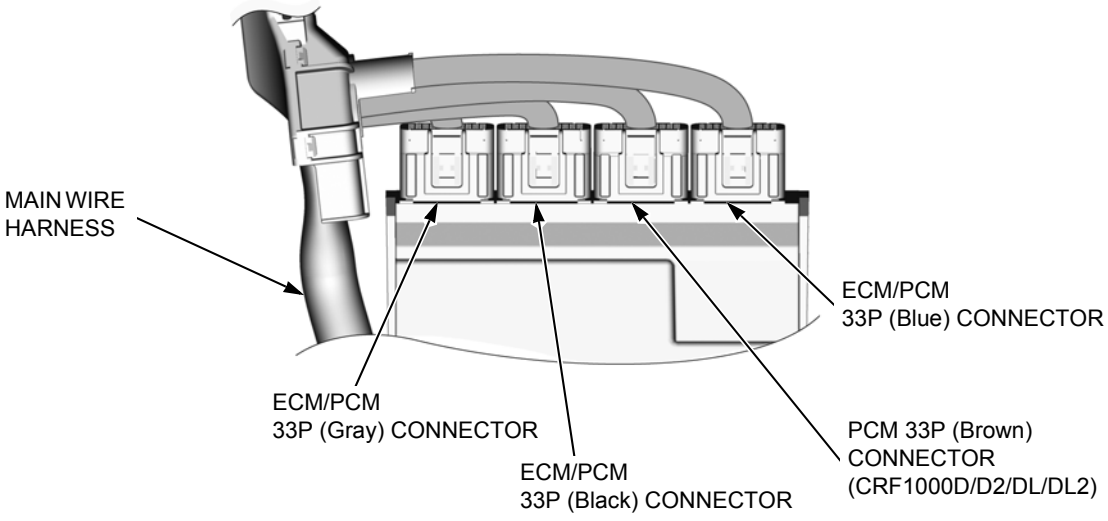


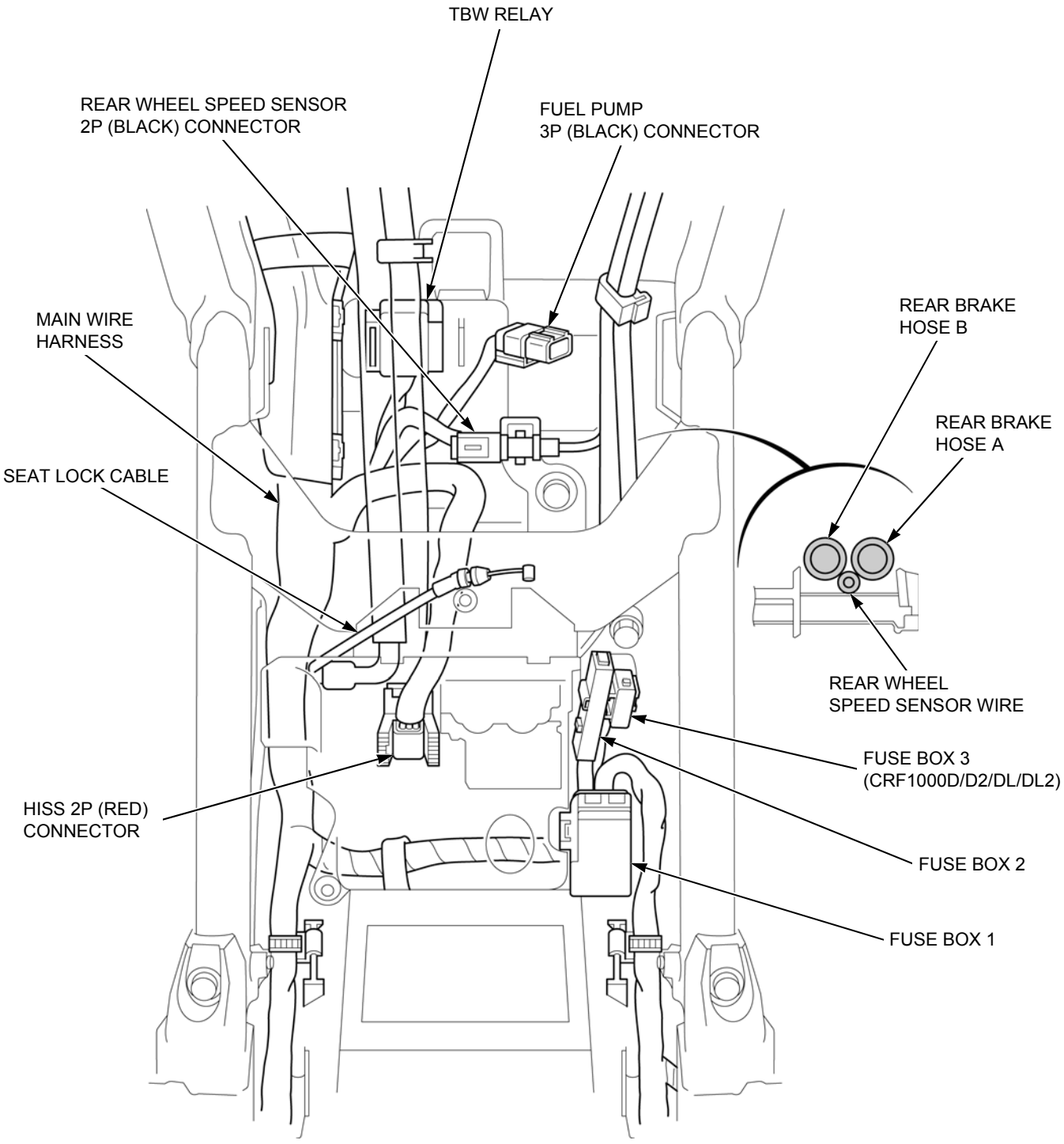

IGNITION SWITCH WIRE
IAT SENSOR
2P (BLUE) CONNECTOR
MAIN WIRE
HARNESS
FRONT BRAKE PIPE C
FRONT BRAKE PIPE D
AIR SUCTION HOSE
CRANKCASE
BREATHER HOSE
GRAY TAPE
(CRF1000D/D2/DL/DL2)
No.2 CYLINDER
MAIN IGNITION
COIL
TBW UNIT
6P (BLACK)
CONNECTOR
No.2 CYLINDER
SUB IGNITION COIL
No.1 CYLINDER
SUB IGNITION COIL
No.1 CYLINDER MAIN
IGNITION COIL
IGNITION COIL SUB HARNESS

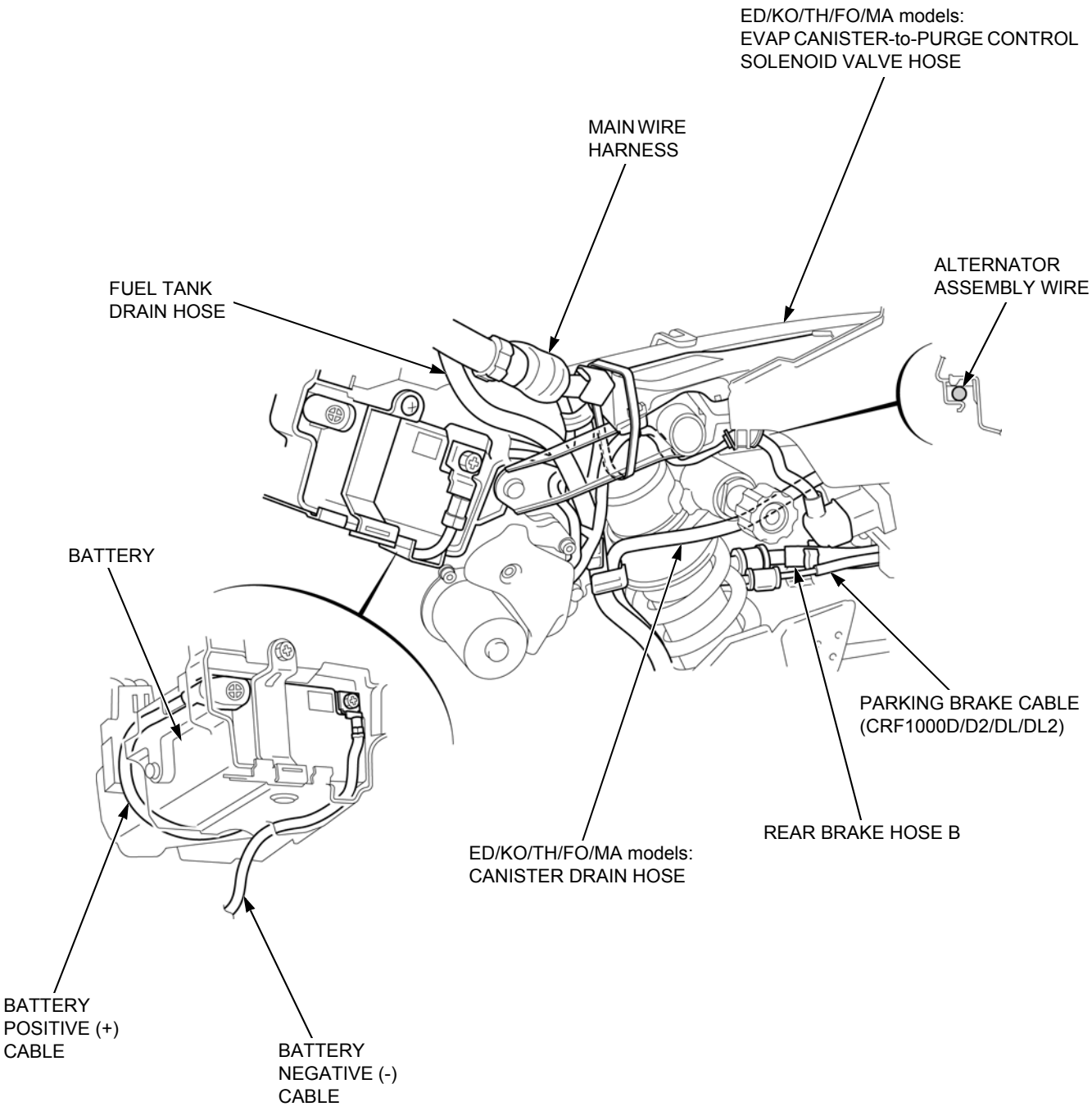

BLACK WIRE
BLACK WIRE
GREEN WIRE
BLACK WIRE
GREEN WIRE
GREEN WIRE
BLACK WIRE
IGNITION COIL SUB HARNESS
GREEN WIRE
IGNITION COIL SUB HARNESS
6P CONNECTOR


IAT SENSOR
FRONT WHEEL SPEED SENSOR
2P (BLACK) CONNECTOR
No.1 CYLINDER SUB PLUG WIRE
No.2 CYLINDER MAIN PLUG WIRE
No.1 CYLINDER MAIN PLUG WIRE
PAIR CONTROL
SOLENOID VALVE
2P (BLACK) CONNECTOR

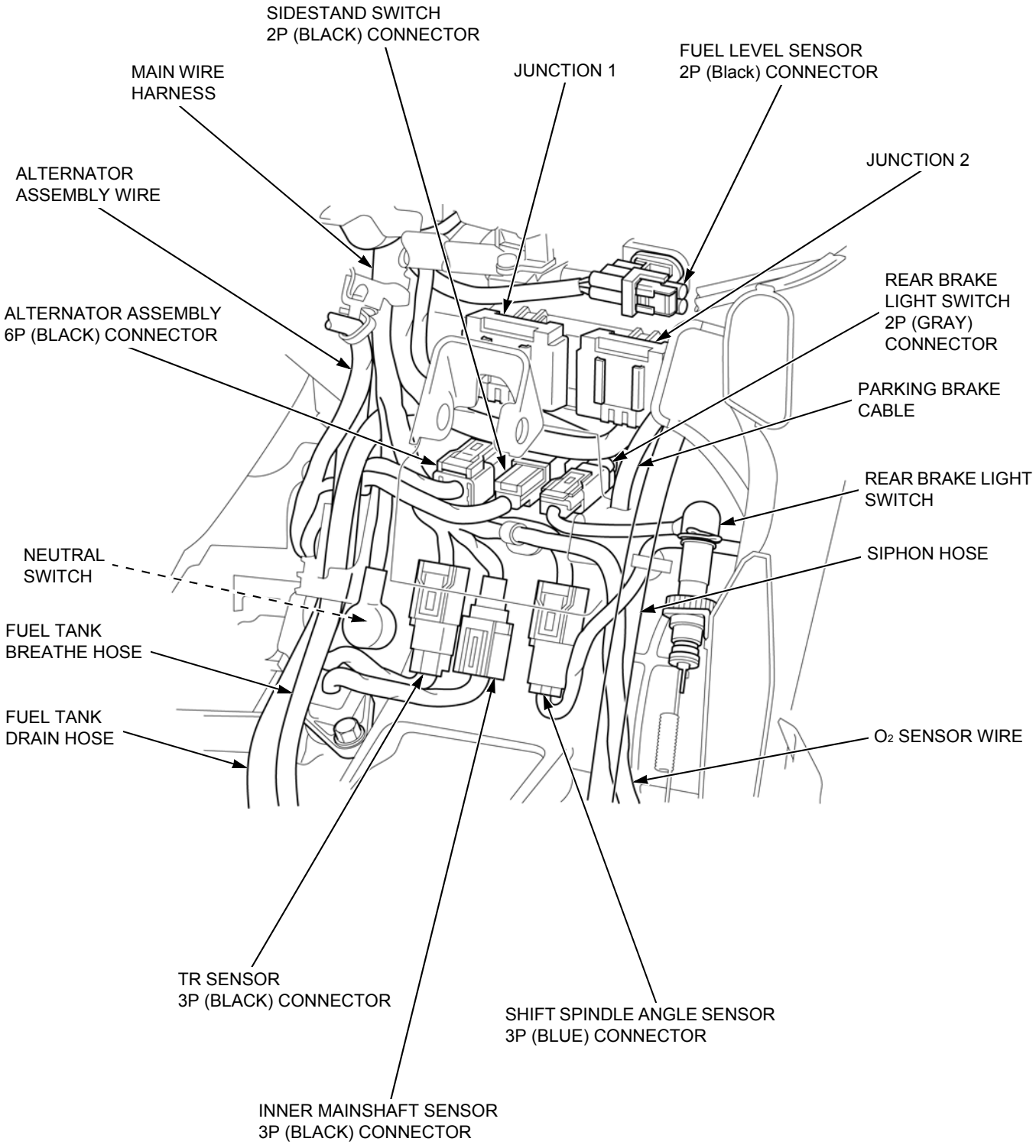

MAP SENSOR
3P (BLACK) CONNECTOR
IGNITION COIL SUB HARNESS
6P CONNECTOR
FUEL TANK
DRAIN HOSE
ED/KO/TH/FO/MA models:
FUEL TANK-to-CANISTER
HOSE
FUEL FEED
HOSE
ED/KO/TH/FO/MA models:
EVAP PURGE CONTROL
SOLENOID VALVE
2P (BLACK) CONNECTOR
ED/KO/TH/FO/MA models:
EVAP PURGE CONTROL
SOLENOID VALVE-to-
THROTTLE BODY HOSE
MAIN WIRE
HARNESS
FUEL LEVEL SENSOR
2P (Black) CONNECTOR
FRONT
BRAKE PIPE C
ED/KO/TH/FO/MA models:
CANISTER-to-EVAP PURGE
CONTROL SOLENOID
VALVE HOSE
FRONT
BRAKE PIPE D
ED/KO/TH/FO/MA models:
FUEL TANK-to-CANISTER HOSE


MAIN WIRE
HARNESS
ECM/PCM
33P (Blue) CONNECTOR
ECM/PCM
33P (Gray) CONNECTOR
PCM 33P (Brown)
CONNECTOR
(CRF1000D/D2/DL/DL2)
ECM/PCM
33P (Black) CONNECTOR

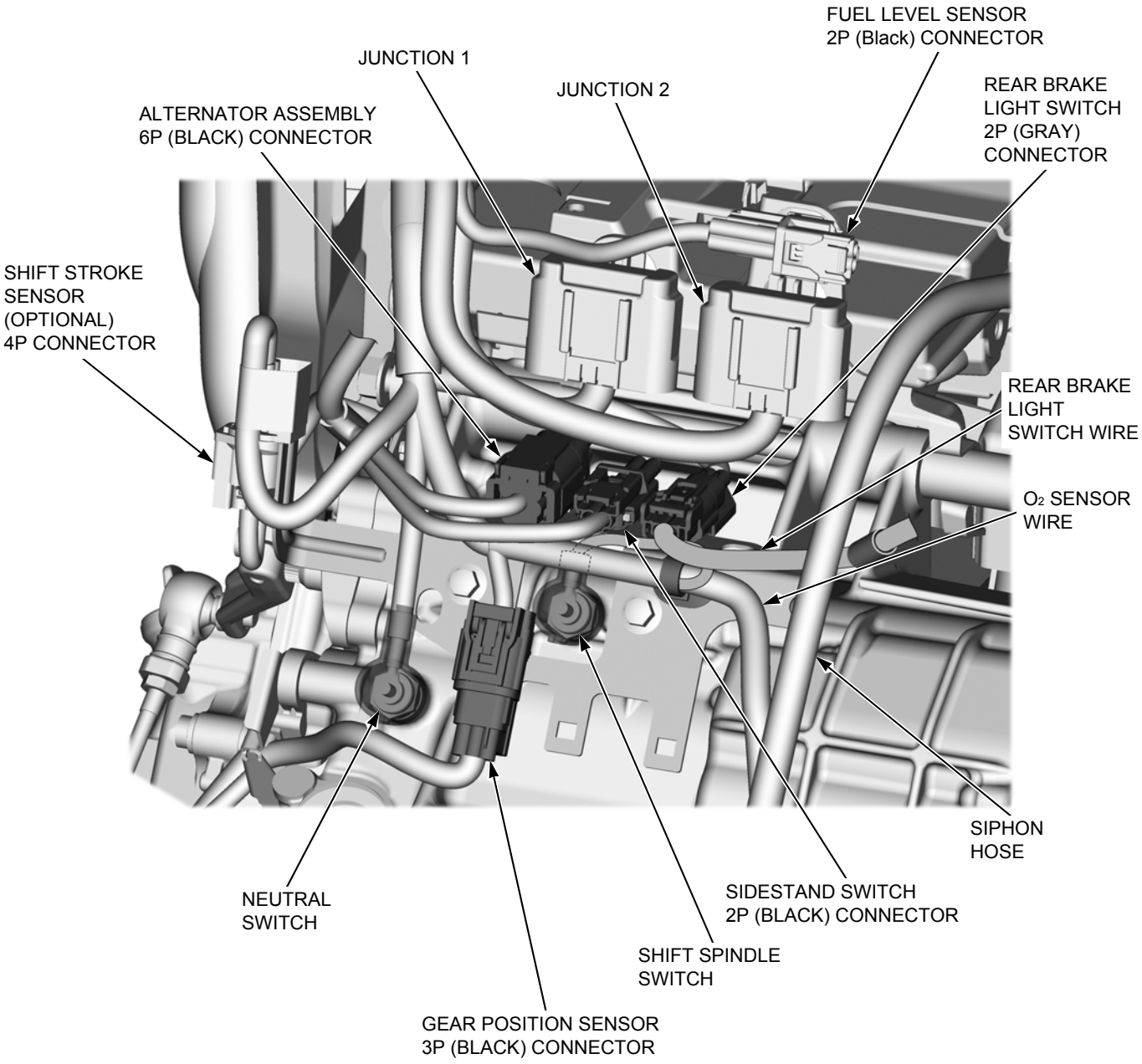

TBW RELAY
REAR WHEEL SPEED SENSOR
2P (BLACK) CONNECTOR
FUEL PUMP
3P (BLACK) CONNECTOR
MAIN WIRE
HARNESS
REAR BRAKE
HOSE B
REAR BRAKE
HOSE A
SEAT LOCK CABLE
REAR WHEEL
SPEED SENSOR WIRE
FUSE BOX 3
(CRF1000D/D2/DL/DL2)
HISS 2P (RED)
CONNECTOR
FUSE BOX 2
FUSE BOX 1


ED/KO/TH/FO/MA models:
EVAP CANISTER-to-PURGE CONTROL
SOLENOID VALVE HOSE
MAIN WIRE
HARNESS
ALTERNATOR
ASSEMBLY WIRE
FUEL TANK
DRAIN HOSE
BATTERY
PARKING BRAKE CABLE
(CRF1000D/D2/DL/DL2)
REAR BRAKE HOSE B
ED/KO/TH/FO/MA models:
CANISTER DRAIN HOSE
BATTERY
POSITIVE (+)
CABLE
BATTERY
NEGATIVE (-)
CABLE

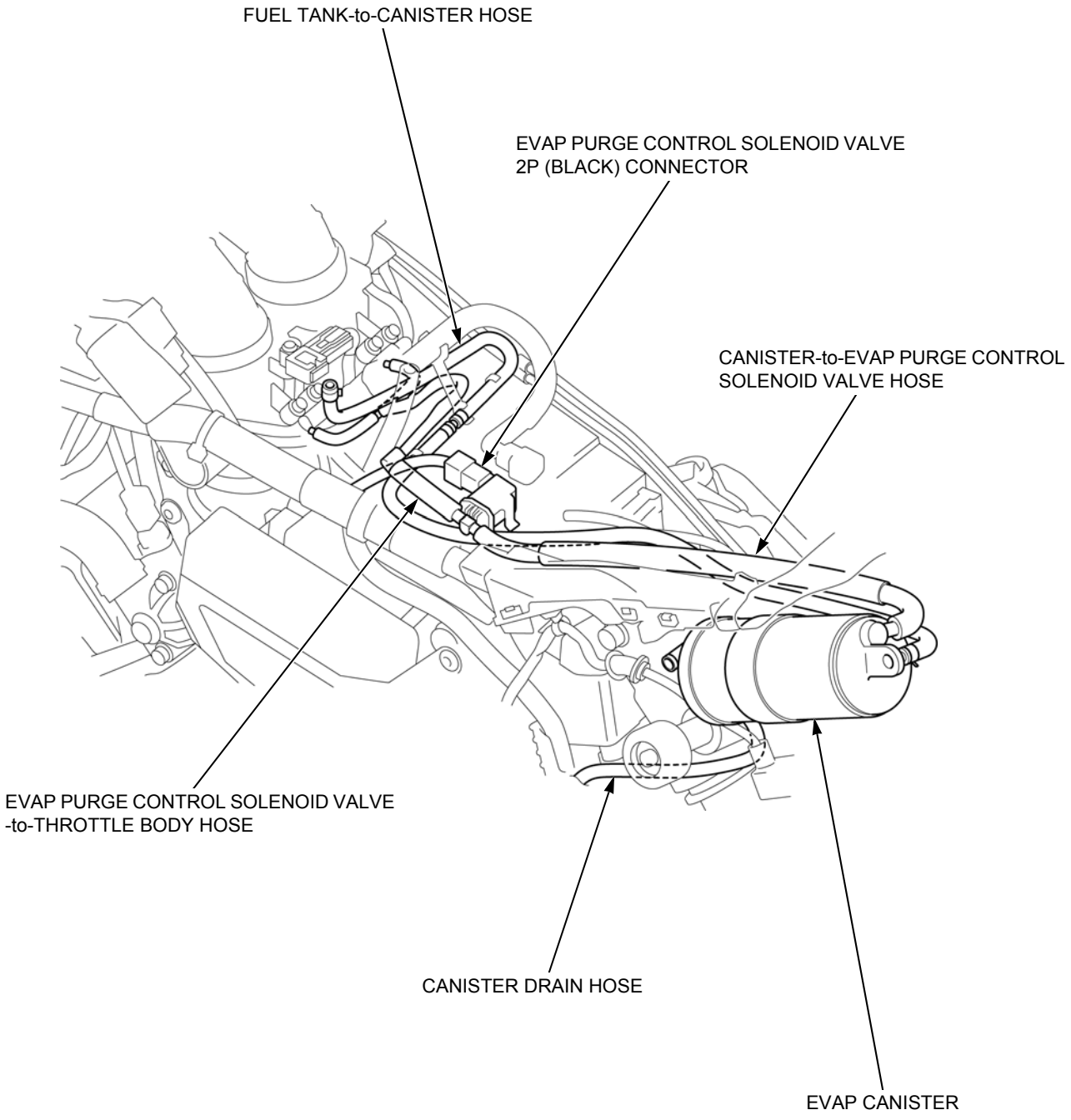
CRF1000D/D2/DL/DL2:

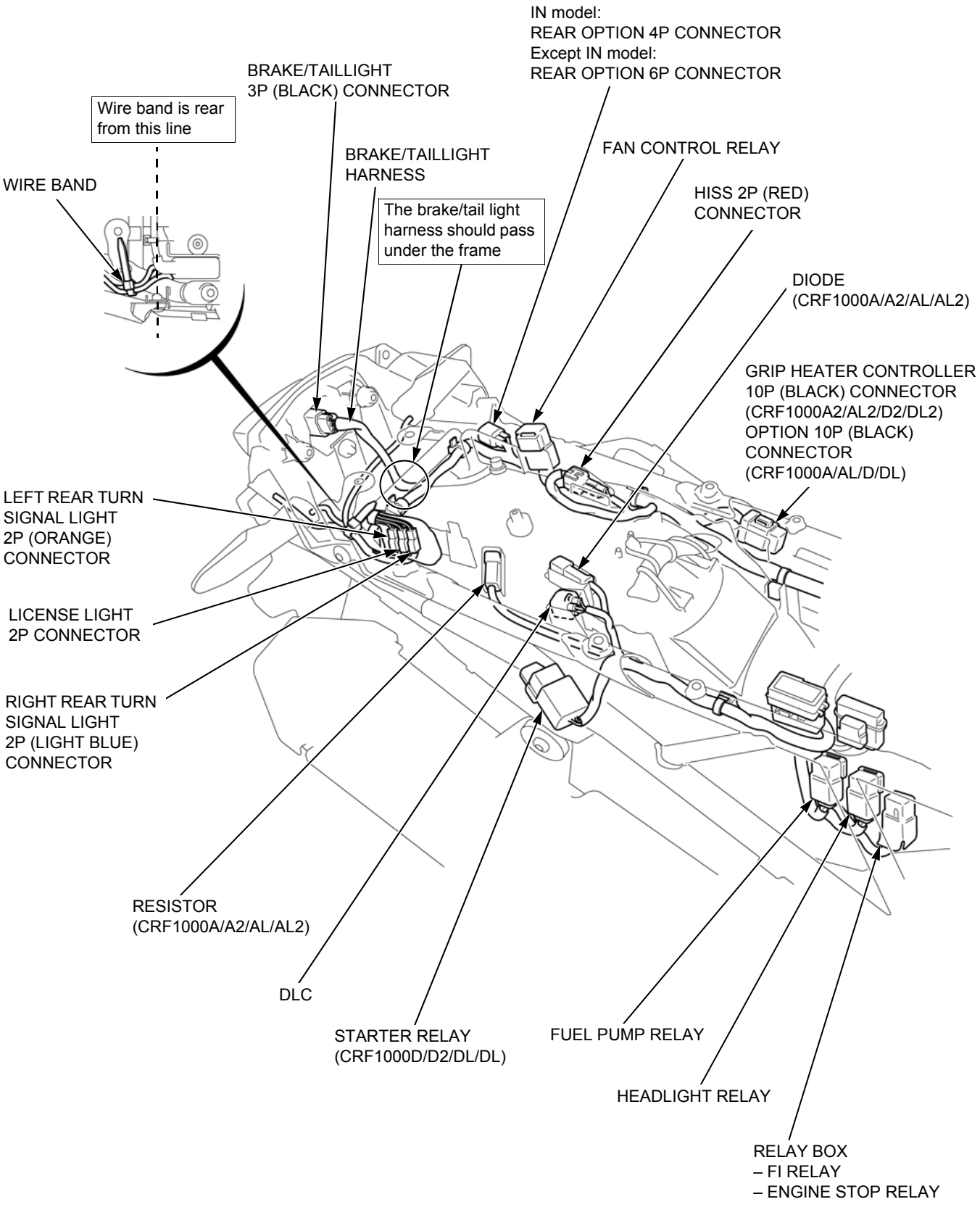


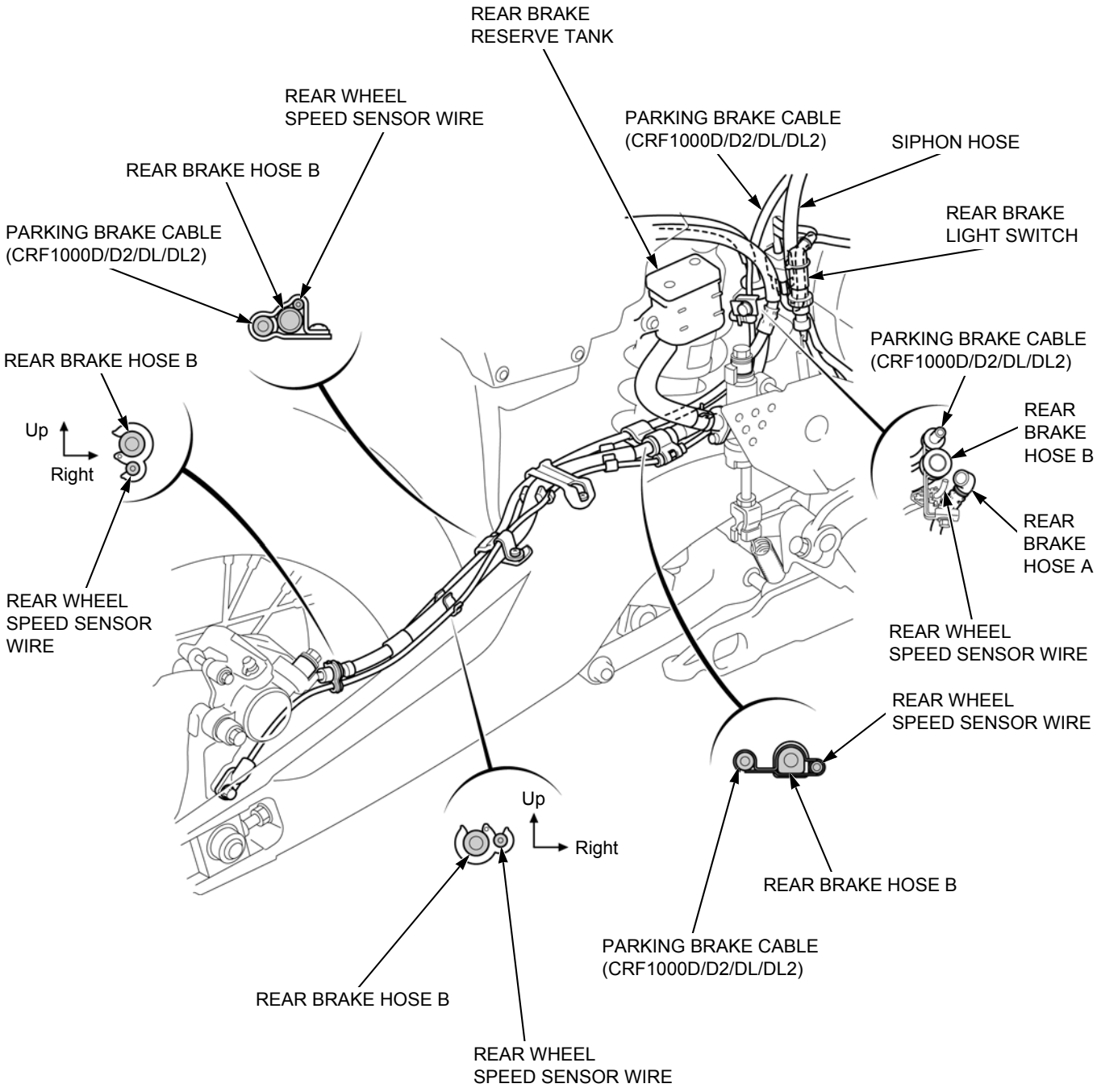
CRF1000A/A2/AL/AL2:

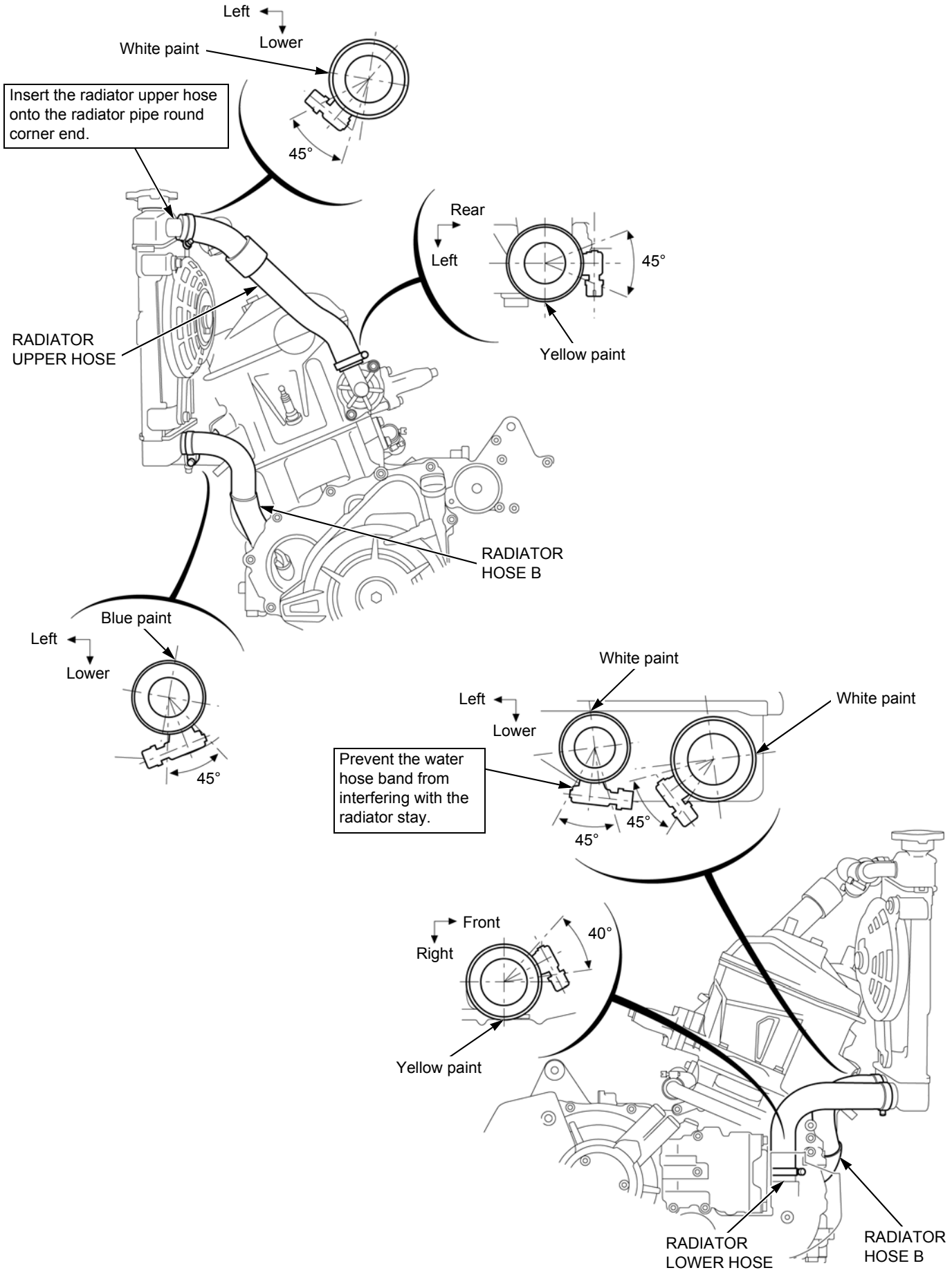


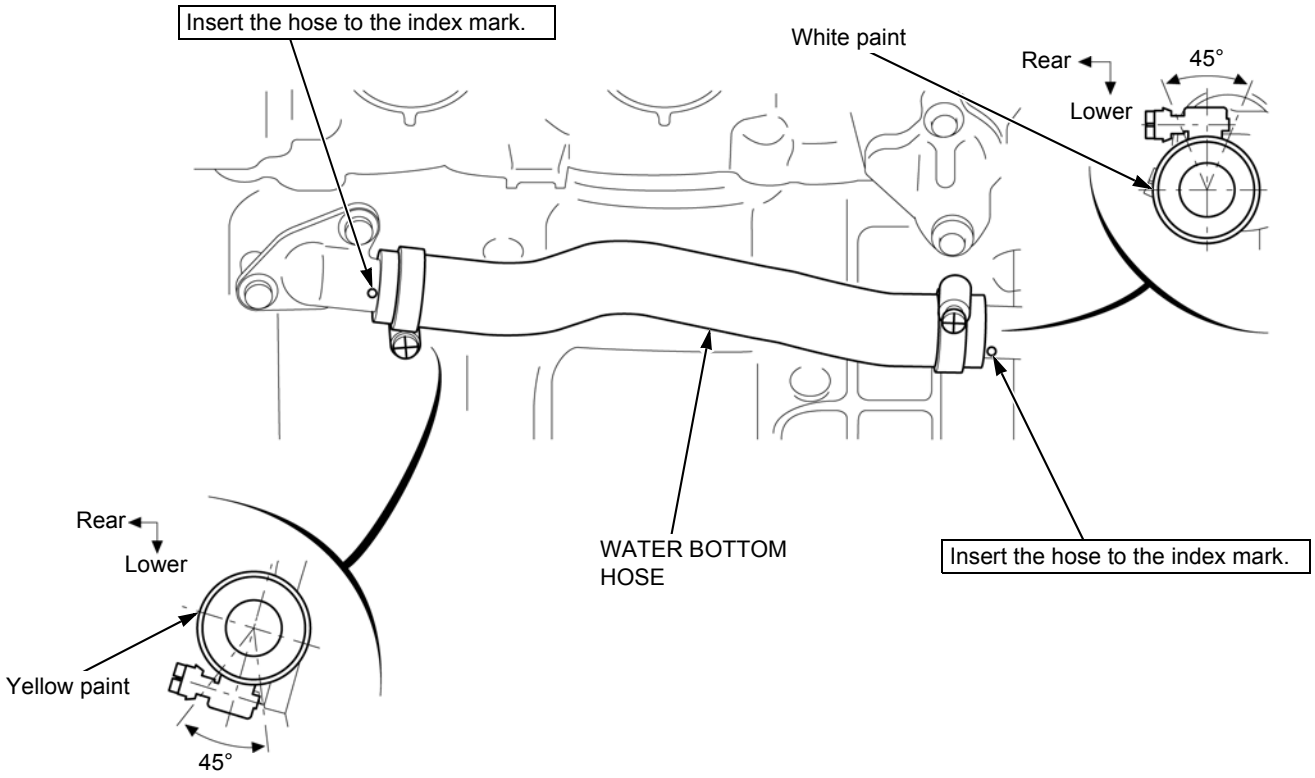
ED/KO/TH/FO/MA models:

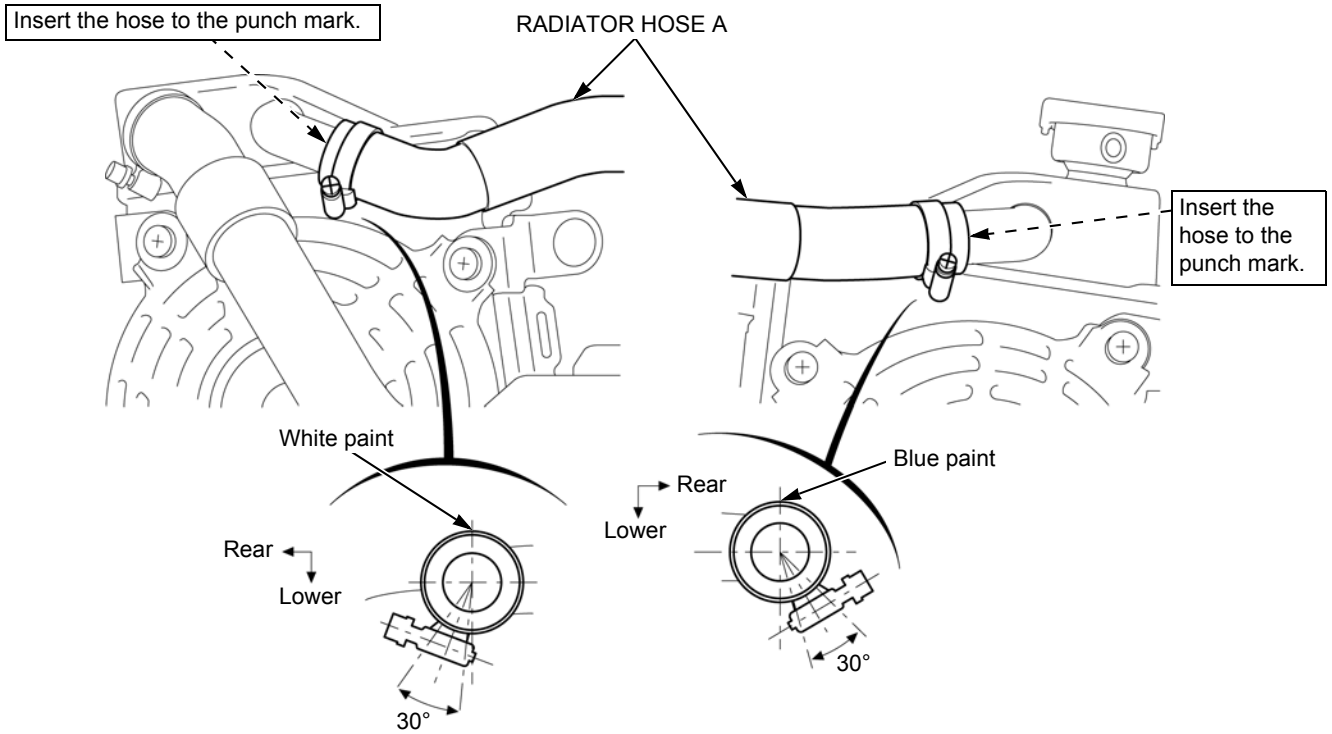



IN model:
REAR OPTION 4P CONNECTOR
Except IN model:
REAR OPTION 6P CONNECTOR
BRAKE/TAILLIGHT
3P (BLACK) CONNECTOR
Wire band is rear
from this line
BRAKE/TAILLIGHT
HARNESS
FAN CONTROL RELAY
WIRE BAND
HISS 2P (RED)
CONNECTOR
The brake/tail light
harness should pass
under the frame
DIODE
(CRF1000A/A2/AL/AL2)
GRIP HEATER CONTROLLER
10P (BLACK) CONNECTOR
(CRF1000A2/AL2/D2/DL2)
OPTION 10P (BLACK)
CONNECTOR
(CRF1000A/AL/D/DL)
LEFT REAR TURN
SIGNAL LIGHT
2P (ORANGE)
CONNECTOR
LICENSE LIGHT
2P CONNECTOR
RIGHT REAR TURN
SIGNAL LIGHT
2P (LIGHT BLUE)
CONNECTOR
RESISTOR
(CRF1000A/A2/AL/AL2)
DLC
STARTER RELAY
(CRF1000D/D2/DL/DL)
FUEL PUMP RELAY
HEADLIGHT RELAY
RELAY BOX
– FI RELAY
– ENGINE STOP RELAY


REAR BRAKE
RESERVE TANK
REAR WHEEL
SPEED SENSOR WIRE
PARKING BRAKE CABLE
(CRF1000D/D2/DL/DL2)
SIPHON HOSE
REAR BRAKE HOSE B
REAR BRAKE
LIGHT SWITCH
PARKING BRAKE CABLE
(CRF1000D/D2/DL/DL2)
REAR BRAKE HOSE B
PARKING BRAKE CABLE
(CRF1000D/D2/DL/DL2)
Up
Right
REAR
BRAKE
HOSE B
REAR
BRAKE
HOSE A
REAR WHEEL
SPEED SENSOR
WIRE
REAR WHEEL
SPEED SENSOR WIRE
REAR WHEEL
SPEED SENSOR WIRE
Up
Right
REAR BRAKE HOSE B
PARKING BRAKE CABLE
(CRF1000D/D2/DL/DL2)
REAR BRAKE HOSE B
REAR WHEEL
SPEED SENSOR WIRE


Left
Lower
White paint
Insert the radiator upper hose onto the radiator pipe round corner end.
45°
Rear
Left
45°
Yellow paint
RADIATOR UPPER HOSE
RADIATOR HOSE B
Blue paint
Left
Lower
45°
White paint
Left
Lower
White paint
Prevent the water hose band from interfering with the radiator stay.
45°
45°
Front
Right
40°
Yellow paint
RADIATOR LOWER HOSE
RADIATOR HOSE B


Insert the hose to the index mark.
White paint
Rear
Lower
45°
Rear
Lower
Yellow paint
45°
WATER BOTTOM HOSE
Insert the hose to the index mark.


Insert the hose to the punch mark.
RADIATOR HOSE A
Insert the hose to the punch mark.
White paint
Rear
Lower
30°
Blue paint
Rear
Lower
30°

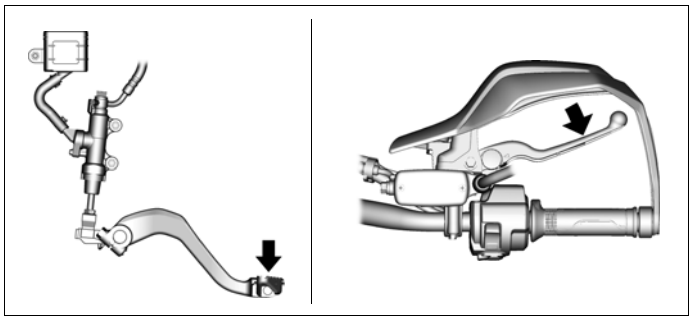
TECHNICAL FEATURE

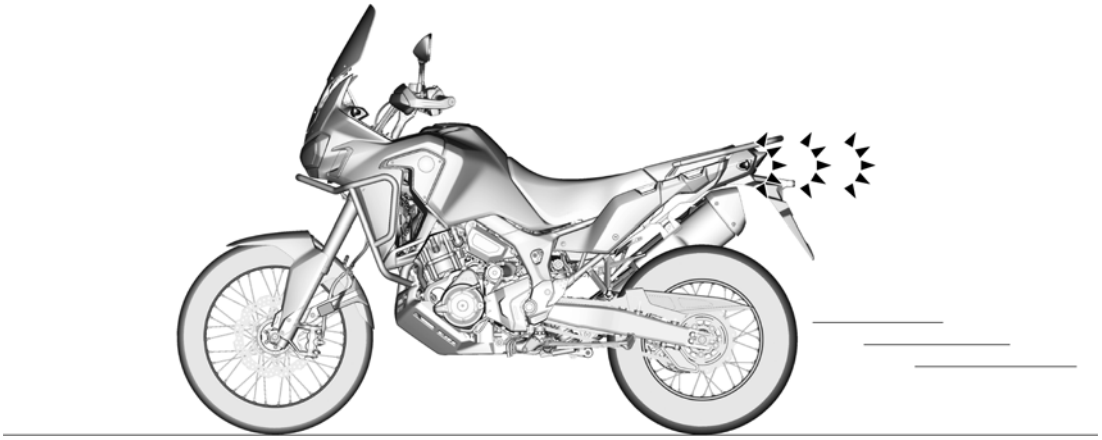
ESS (Emergency Stop Signal) (Except KO model)

The ESS is such a function that activates all turn indicators to blink fast when the motorcycle decelerates rapidly under certain conditions to alert following drivers/riders. With the ABS full-cycling, issuing/halting of ESS logic signal is conducted in accordance with the deceleration as per the ESS protocol. The ABS modulator constantly monitors the ESS logic signal, hazard switch signal, and the speed to trigger ESS. When the ESS is triggered, all turn signal lights are activated to blink at a high frequency (4 ± 1 Hz).

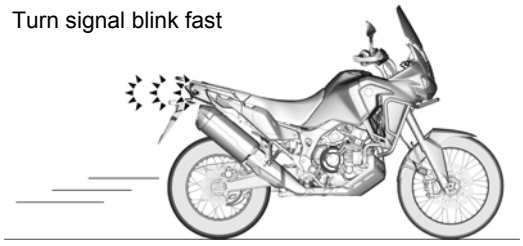
The ABS modulator triggers ESS when the motorcycle is running above 53 km/h, the brake is applied, and a quick deceleration (6 m/s^2 or higher) is detected. When the ESS is triggered, all the turn signal lights are activated to blink faster than the usual rate 1.3 – 1.5 Hz. The vehicle speed signals are sent to the ABS modulator from the front and rear wheel speed sensors. The ESS is cancelled when the deceleration decreases to under 2.5 m/s^2, the hazard switch is turned on or the brake is released. This system is applicable only in countries that allow blinking of light in a hazard. For quick inspection, all turn indicators can be checked for quick blinking by short-circuiting SCS and grabbing the brake with the ignition switch at ON. It can also be checked that all the blinking turn signal lights go off when the brake is released.

ESS system

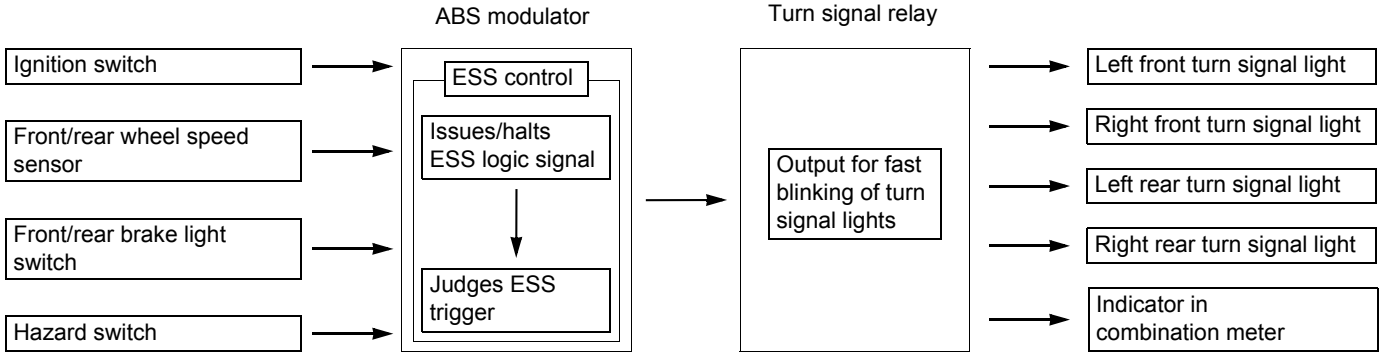




Turn signal blink fast

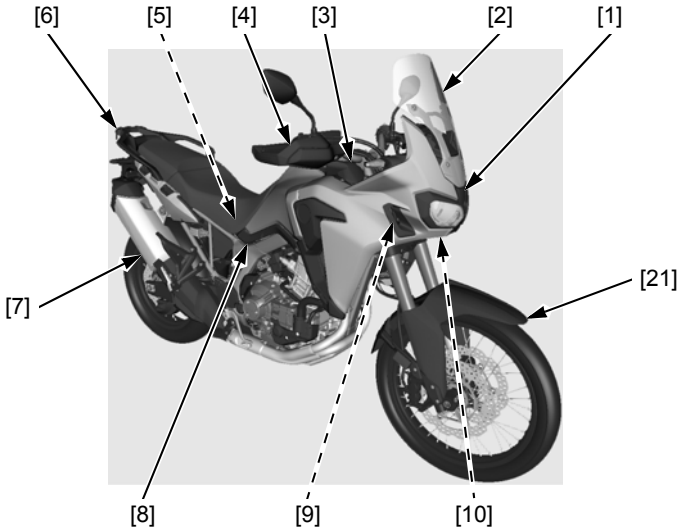


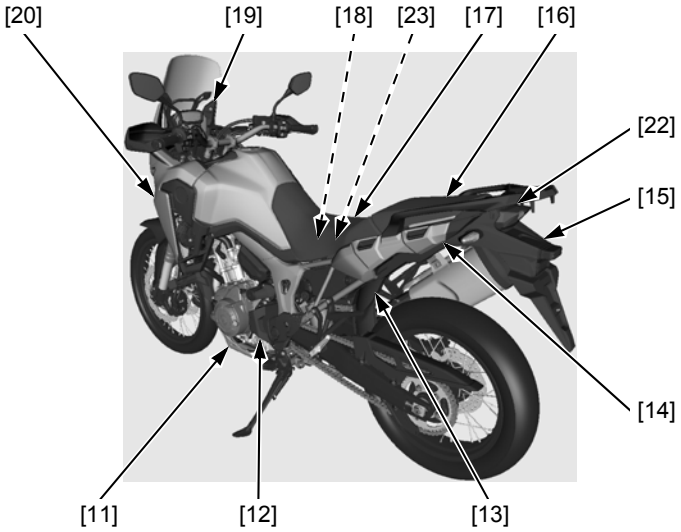
As the SCS is shorted and the brake is grabbed with the ignition switch at ON to send the deliberately issued ESS logic signal, all turn signal lights and other indicators blink fast at 4 ± 1 Hz.



BODY PANEL LOCATIONS

CRF1000A/AL/D/DL

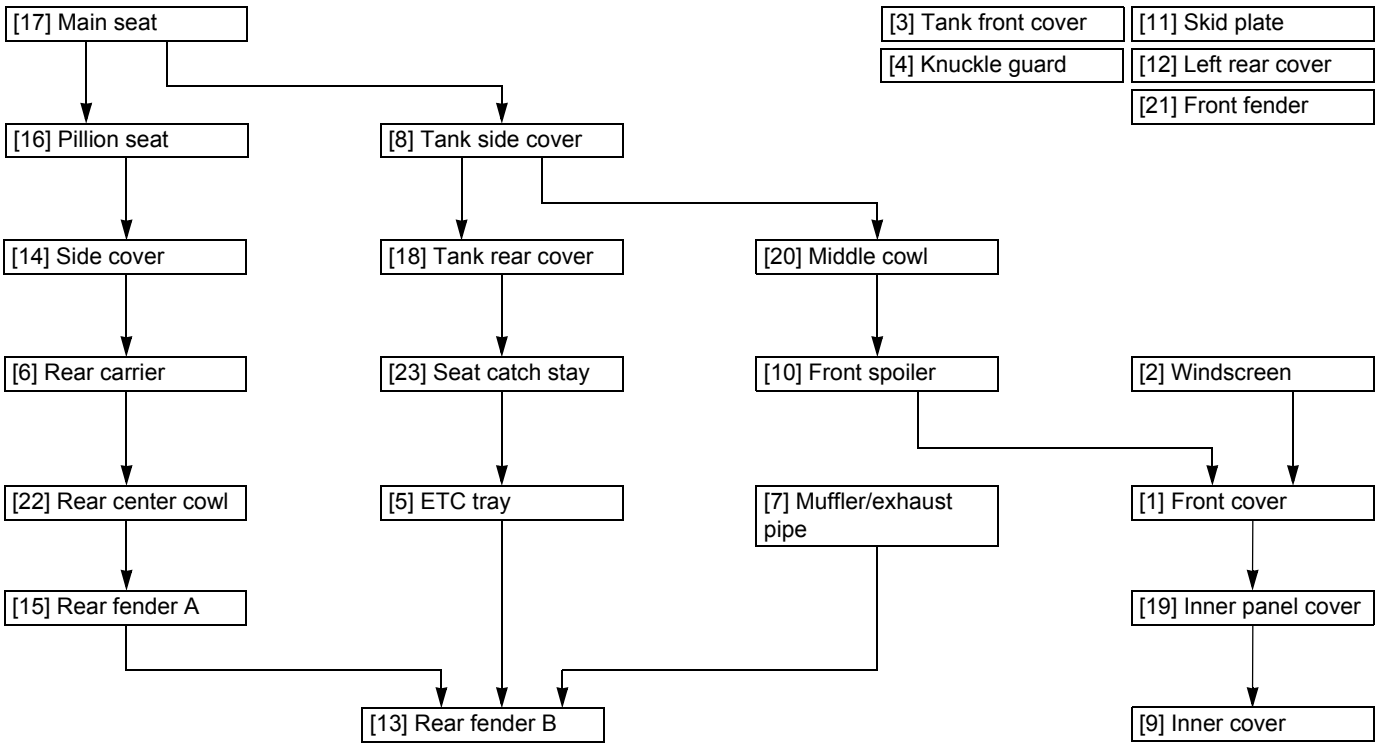




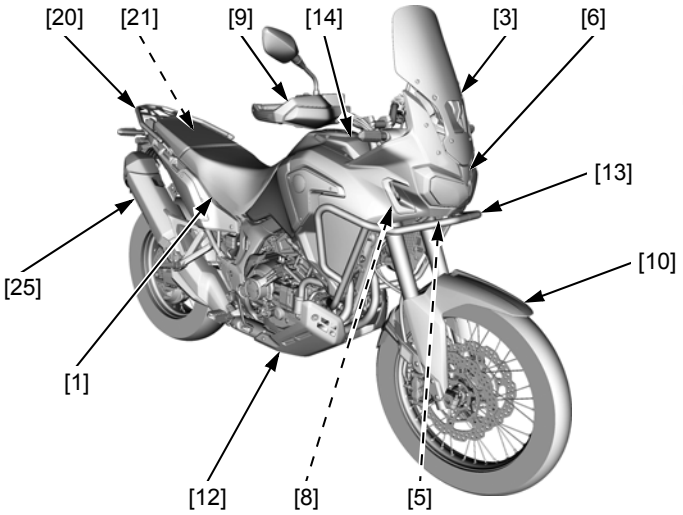
[1] Front cover (page 26-44)
[2] Windscreen (page 2-5)
[3] Tank front cover (page 2-9)
[4] Knuckle guard (page 2-5)
[5] ETC tray (page 26-49)
[6] Rear carrier (page 26-52)
[7] Muffler/exhaust pipe (page 2-16)
[8] Tank side cover (page 2-9)
[9] Inner cover (page 2-8)
[10] Front spoiler (page 2-7)
[11] Skid plate (page 2-10)
[12] Left rear cover (page 2-10)
[13] Rear fender B (page 26-56)
[14] Side cover (page 2-11)
[15] Rear fender A (page 26-54)
[16] Pillion seat (page 2-11)
[17] Main seat (page 2-4)
[18] Tank rear cover (page 2-10)
[19] Inner panel cover (page 26-45)
[20] Middle cowl (page 2-6)
[21] Front fender (page 2-9)
[22] Rear center cowl (page 26-54)
[23] Seat catch stay (page 26-48)

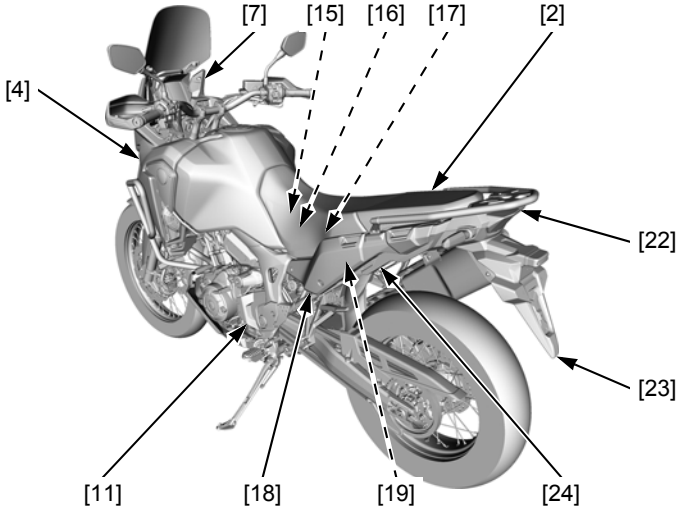
BODY PANEL REMOVAL CHART

This chart shows the removal order of the frame covers by following the arrow.



CRF1000A2/AL2/D2/DL2

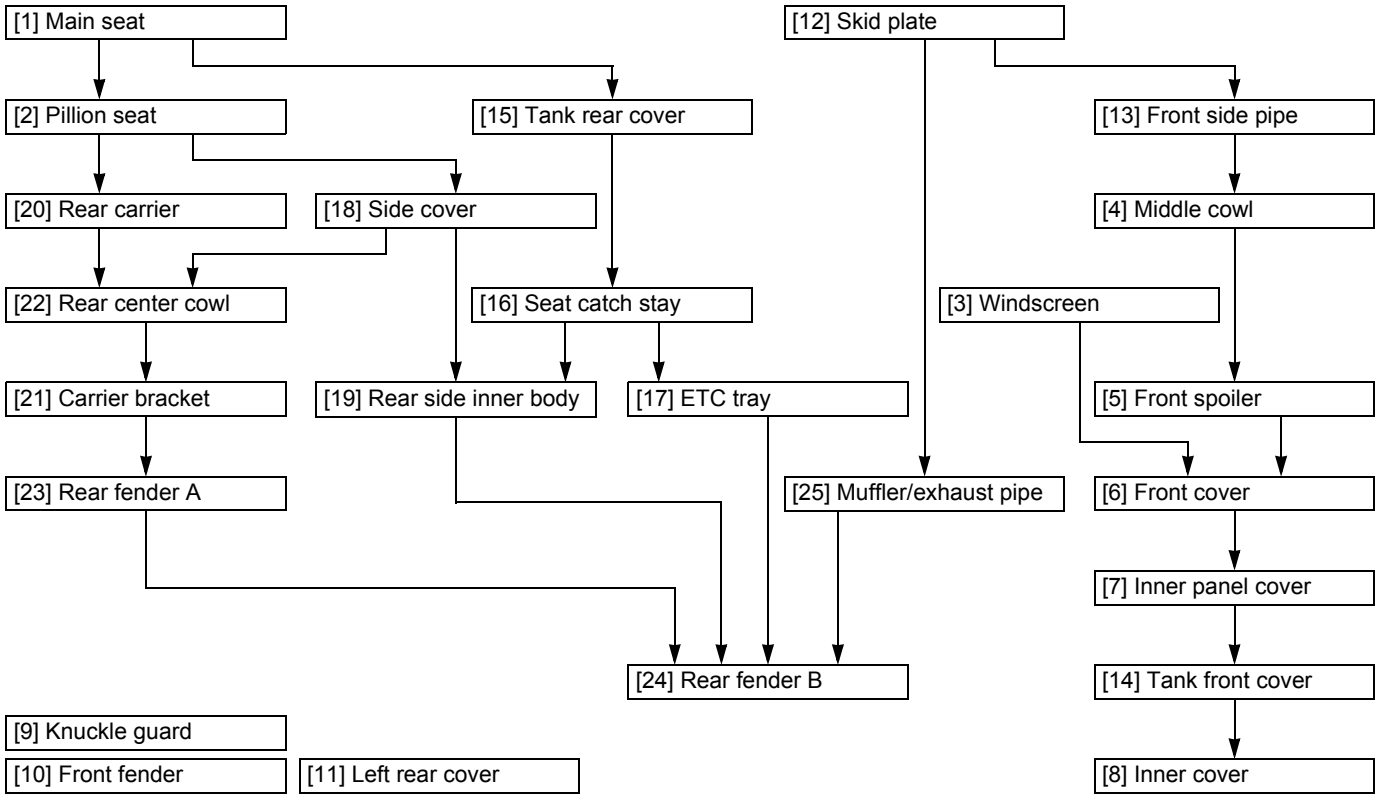




[1] Main seat (page 2-4)
[2] Pillion seat (page 2-11)
[3] Windscreen (page 26-41)
[4] Middle cowl (page 26-42)
[5] Front spoiler (page 2-7)
[6] Front cover (page 26-44)
[7] Inner panel cover (page 26-45)
[8] Inner cover (page 2-8)
[9] Knuckle guard (page 2-5)
[10] Front fender (page 2-9)
[11] Left rear cover (page 2-10)
[12] Skid plate (page 26-46)
[13] Front side pipe (page 26-47)
[14] Tank front cover (page 2-9)
[15] Tank rear cover (page 2-10)
[16] Seat catch stay (page 26-48)
[17] ETC tray (page 26-49)
[18] Side cover (page 26-49)
[19] Rear side inner body (page 26-51)
[20] Rear carrier (page 26-52)
[21] Carrier bracket (page 26-53)
[22] Rear center cowl (page 26-54)
[23] Rear fender A (page 26-54)
[24] Rear fender B (page 26-56)
[25] Muffler/exhaust pipe (page 26-58)

BODY PANEL REMOVAL CHART

This chart shows the removal order of the frame covers by following the arrow.



WINDSCREEN

CRF1000A2/AL2/D2/DL2

REMOVAL/INSTALLATION

Remove the following:

– Socket bolts [1]
– Plastic washers [2]
– Rubber washers [3]
– Windscreen [4]

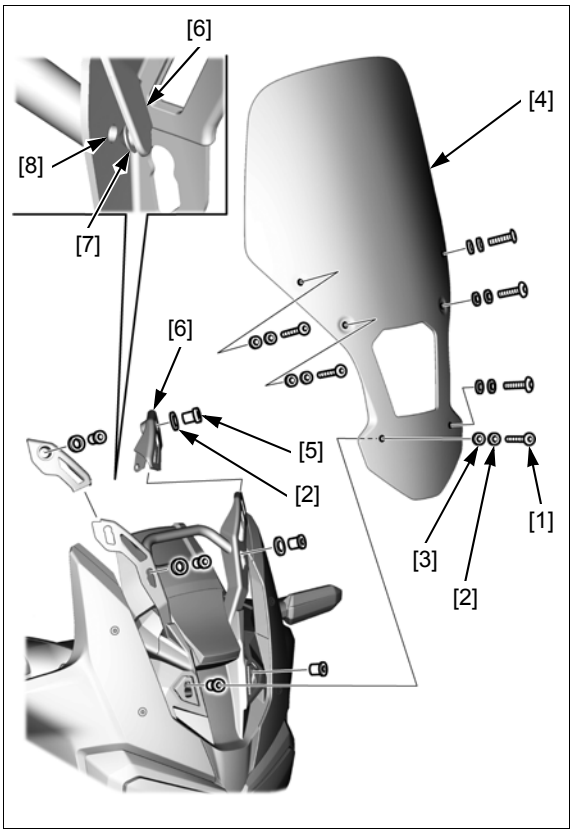
Remove the well nuts [5] and cowl stay covers [6] if necessary.

Installation is in the reverse order of removal.

NOTE:

• When installing the cowl stay cover, set the cowl stay cover boss [7] into the front cowl stay hole [8].

TORQUE: 0.42 N·m (0.04 kgf·m, 0.3 lbf·ft)



MIDDLE COWL

CRF1000A2/AL2/D2/DL2

REMOVAL/INSTALLATION

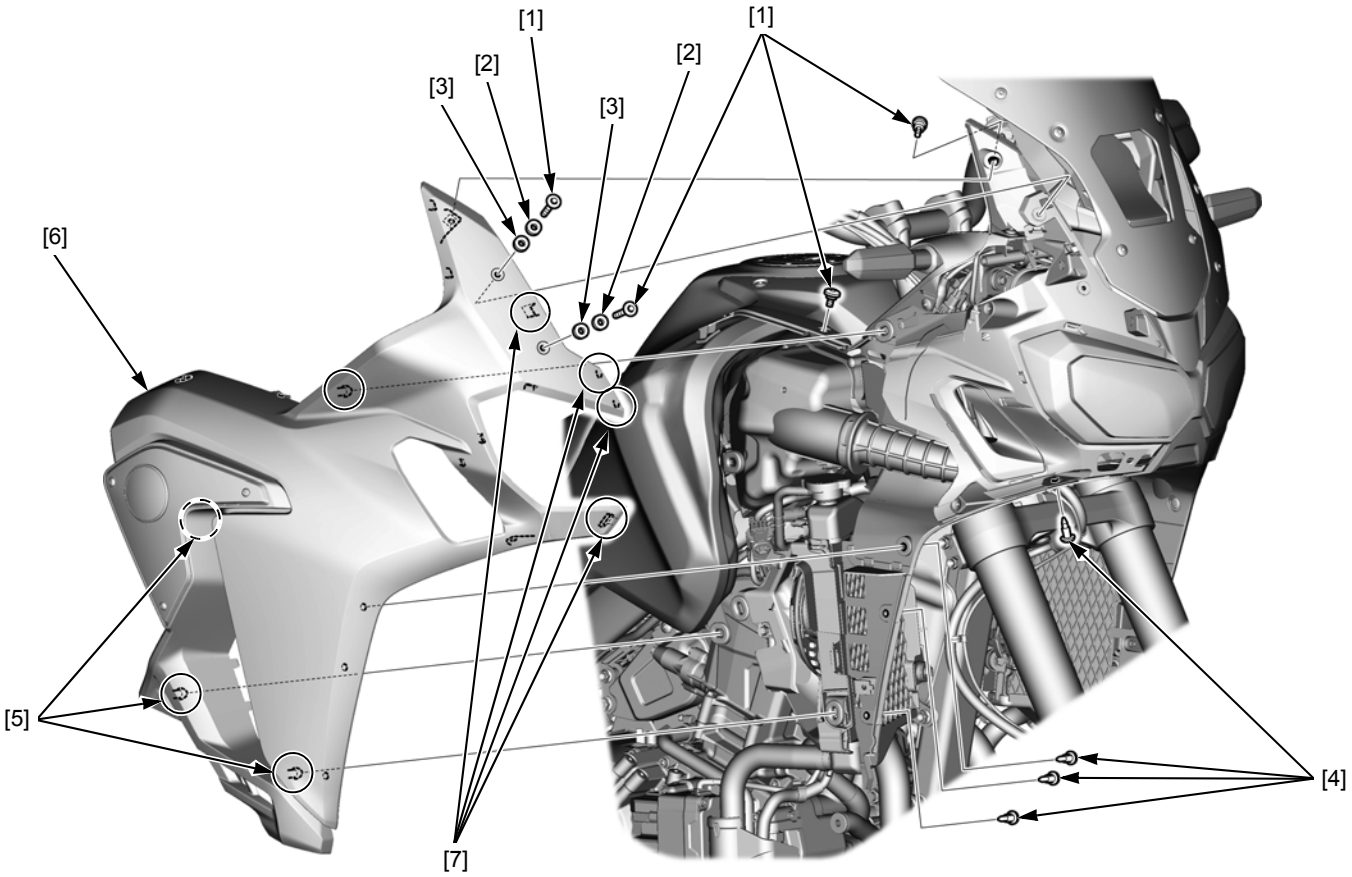
Remove the front side pipe (page 26-47).

Remove the socket bolts [1], plastic washers [2], rubber washers [3] and trim clips [4].

Release the bosses [5].

Remove the middle cowl [6] by releasing the tabs [7].

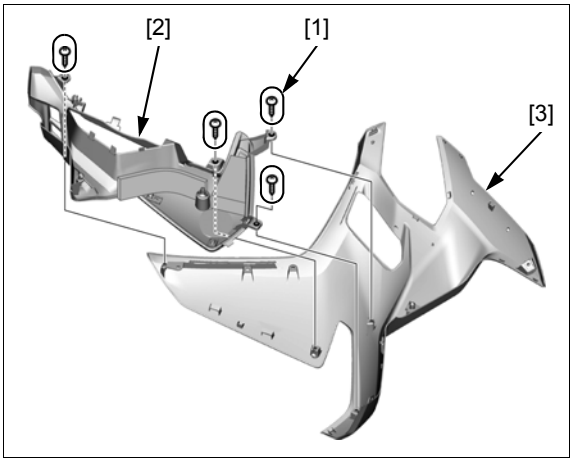
Installation is in the reverse order of removal.



DISASSEMBLY/ASSEMBLY

Remove the middle cowl (page 26-42).

Remove the screws [1] and front side cover [2] from the middle cowl [3].

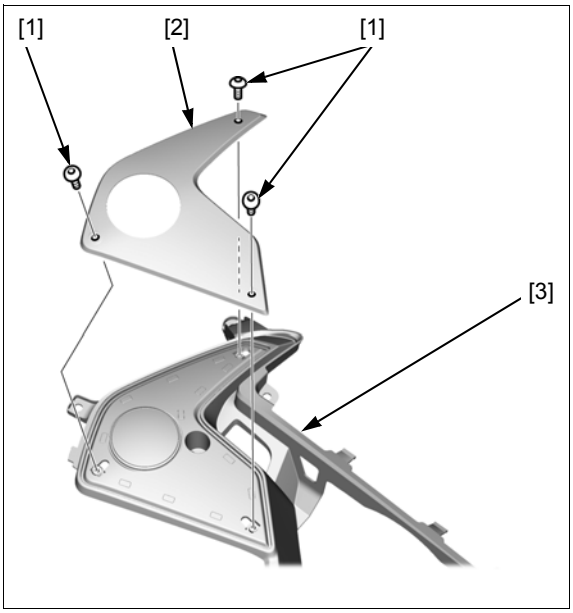


Remove the front side cover mounting screws [1] and front side cover [2] from the middle cowl [3].

Installation is in the reverse order of removal.

TORQUE:

Front side cover mounting screw:
0.42 N·m (0.04 kgf·m, 0.3 lbf·ft)



FRONT COVER

REMOVAL/INSTALLATION

Remove the following:

– Front spoiler (page 2-7)
– Windscreen
  – CRF1000A/AL/D/DL (page 2-5)
  – CRF1000A2/AL2/D2/DL2 (page 26-41)

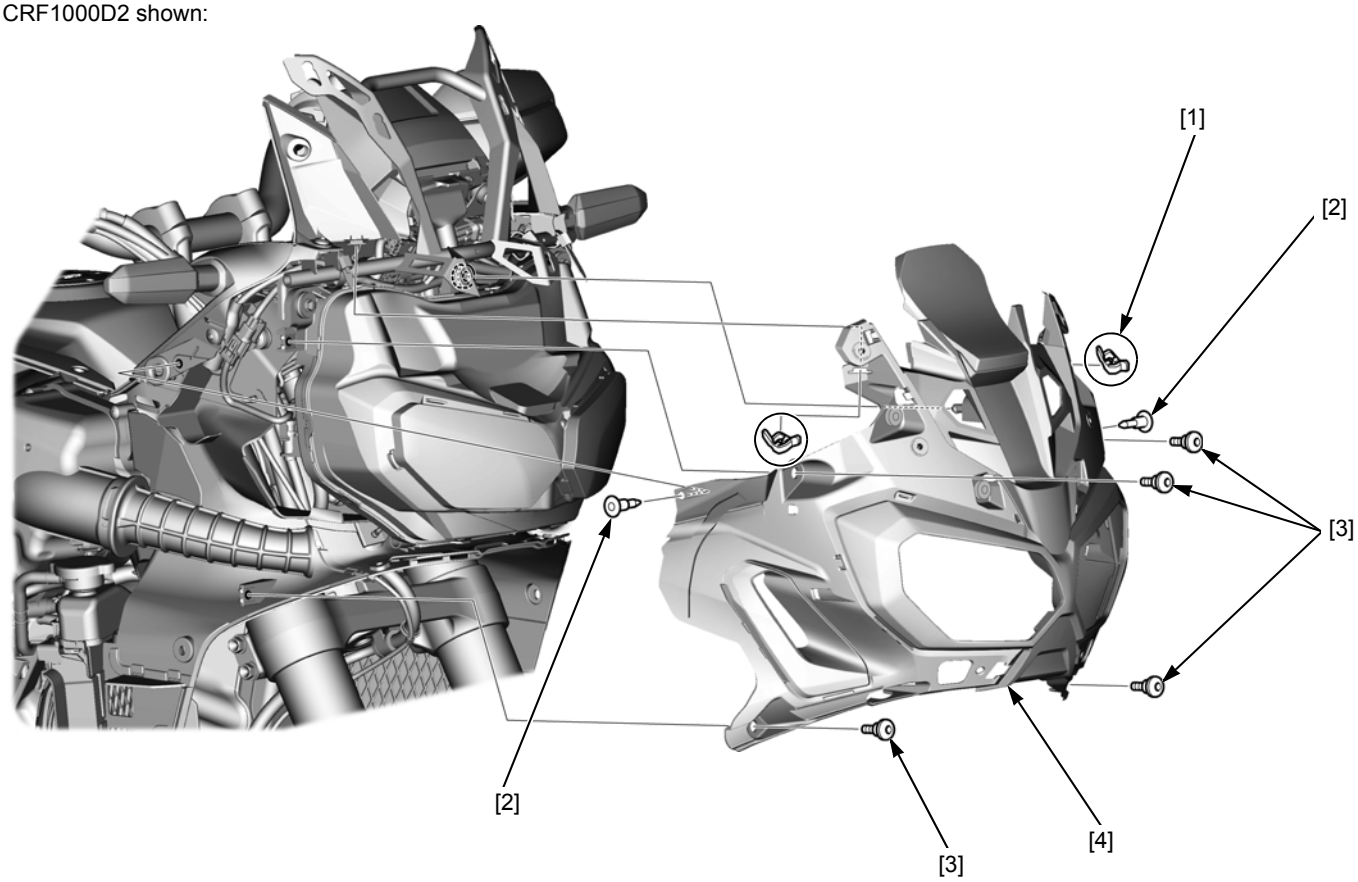
Remove the twist clips [1] and trim clips [2].

Remove the socket bolts [3].

Remove the front cover [4] while pulling it forward.

Installation is in the reverse order of removal.

CRF1000D2 shown:



INNER PANEL COVER

REMOVAL/INSTALLATION (RIGHT SIDE)

Remove the front cover (page 26-44).

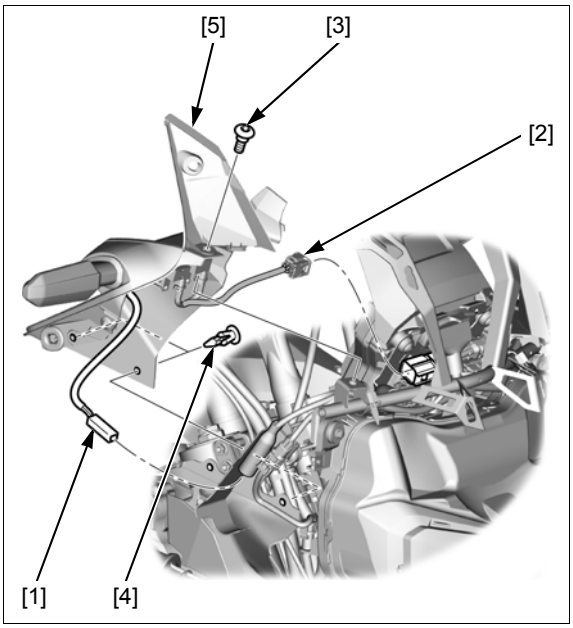
Disconnect the front turn signal light 2P (Light blue) connector [1].

CRF1000A/A2/AL/AL2: Disconnect the rear ABS switch 2P (Black) connector [2].

CRF1000D/D2/DL/DL2: Disconnect the rear ABS/G switch 4P (Black) connector [2].

Remove the socket bolt [3], trim clip [4] and right inner panel cover [5].

Installation is in the reverse order of removal.



REMOVAL/INSTALLATION (LEFT SIDE)

Remove the front cover (page 26-44).

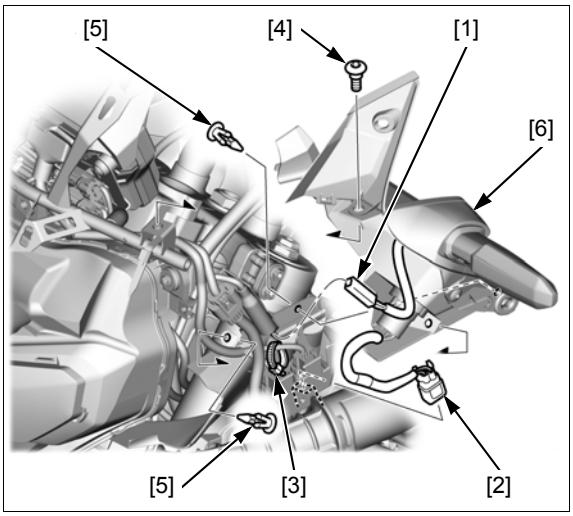
Disconnect the front turn signal light 2P (Orange) connector [1].

CRF1000A2/D2/AL2/DL2: Disconnect the accessory socket 2P (Black) connector [2].

Remove the wire band [3].

Remove the socket bolt [4], trim clips [5] and left inner panel cover [6].

Installation is in the reverse order of removal.

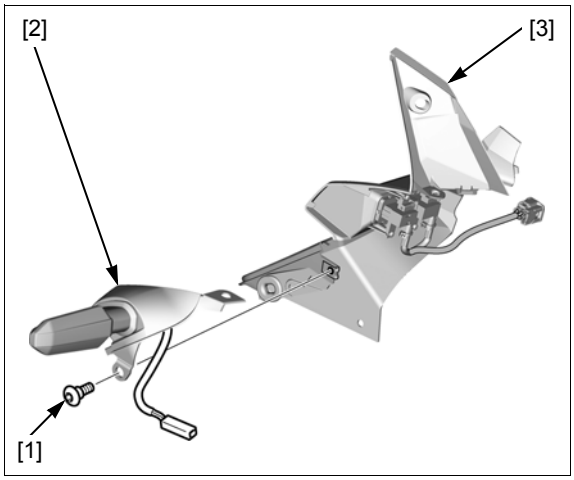


DISASSEMBLY/ASSEMBLY

Remove the socket bolt [1].

Remove the front turn signal cover [2] from the inner panel cover [3].

Assembly is in the reverse order of disassembly.



SKID PLATE

CRF1000A2/AL2/D2/DL2

REMOVAL/INSTALLATION

Remove the bolts [1], washers [2] and collar [3].

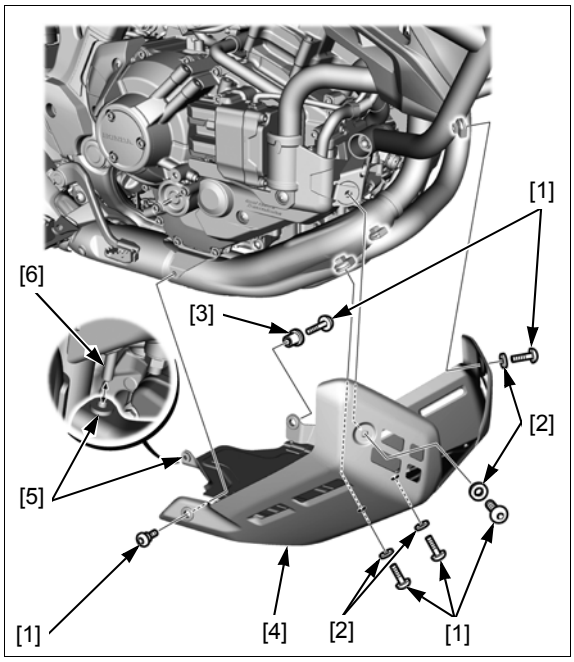
Remove the skid plate [4].

Installation is in the reverse order of removal.

NOTE:

- Align the right rear grommet [5] of the skid plate with the boss [6] of frame.

TORQUE: 26 N·m (2.7 kgf·m, 19 lbf·ft)



FRONT SIDE PIPE

REMOVAL/INSTALLATION

Remove the skid plate (page 26-46).

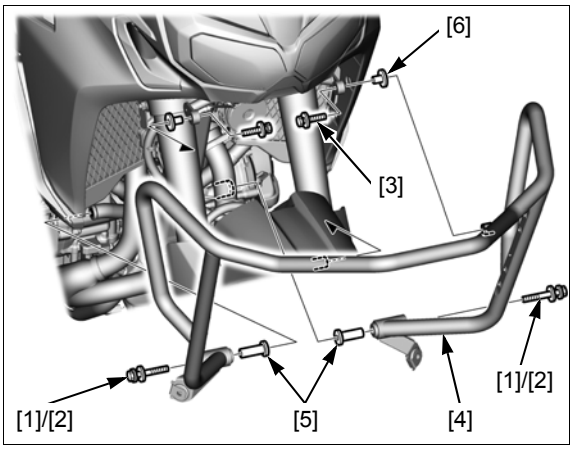
Remove the following:

– Bolts [1]
– Washers [2]
– Bolt/washers [3]
– Front side pipe [4]

Remove the collars [5] from the front side pipe.

Remove the collars [6] from the front side pipe stay.

Installation is in the reverse order of removal.

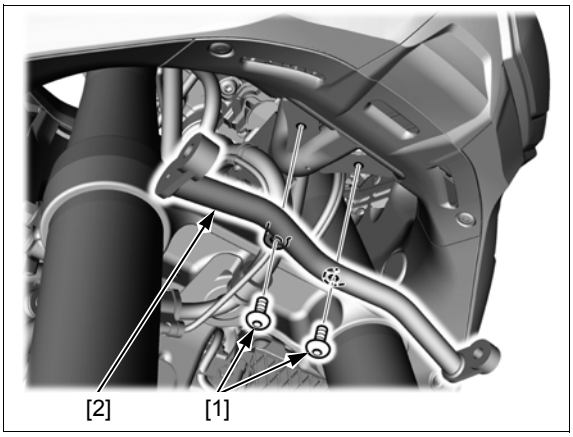


FRONT SIDE PIPE STAY REMOVAL/ INSTALLATION

Remove the front side pipe (page 26-47).

Remove the socket bolts [1] and front side pipe stay [2].

Installation is in the reverse order of removal.

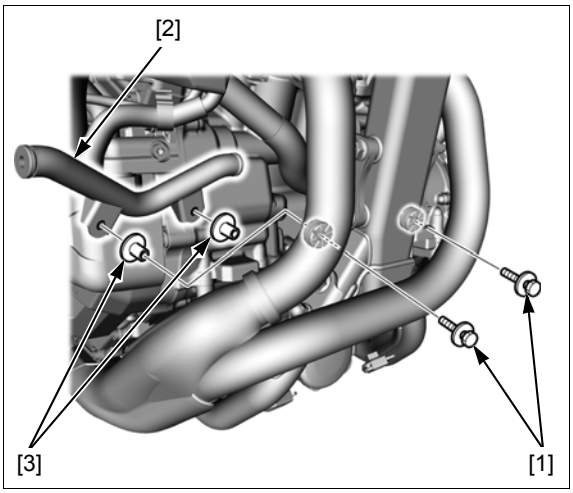


LOWER CROSS PIPE REMOVAL/ INSTALLATION

Remove the bolt/washers [1] and lower cross pipe [2].

Remove the collars [3] from the lower cross pipe bracket.

Installation is in the reverse order of removal.



SEAT CATCH STAY

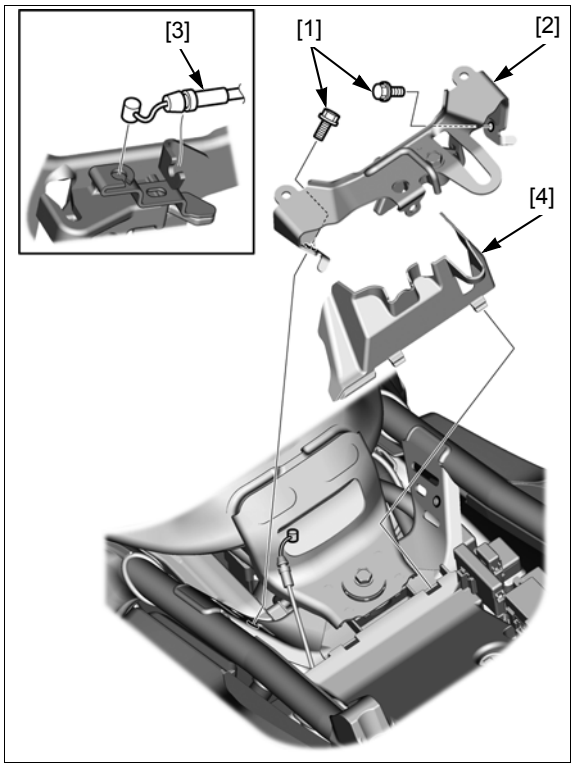
REMOVAL/INSTALLATION

Remove the tank rear cover (page 2-10).

Remove the bolts [1] and pull up the seat catch stay [2].

Disconnect the seat lock cable [3] from the seat catch stay.

Remove the seat lock cover [4].

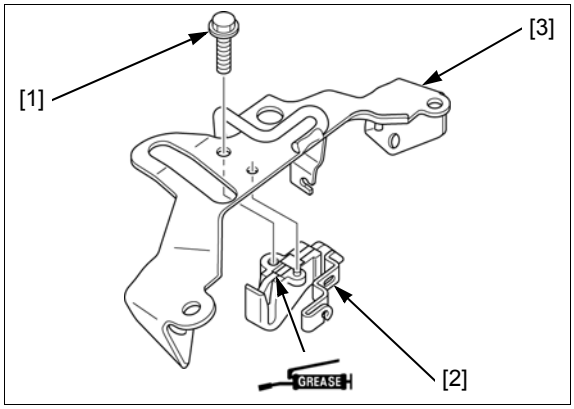


Remove the bolt [1] and seat catch hook [2] from the seat catch stay [3].

Installation is in the reverse order of removal.

NOTE:

- Apply grease to the seat catch hook sliding area.
- Align the seat catch hook boss with the stay hole.
- Align the grooves of the ETC tray with the tabs of the seat lock cover.



ETC TRAY

REMOVAL/INSTALLATION

Remove the seat catch stay (page 26-48).

Release the following:

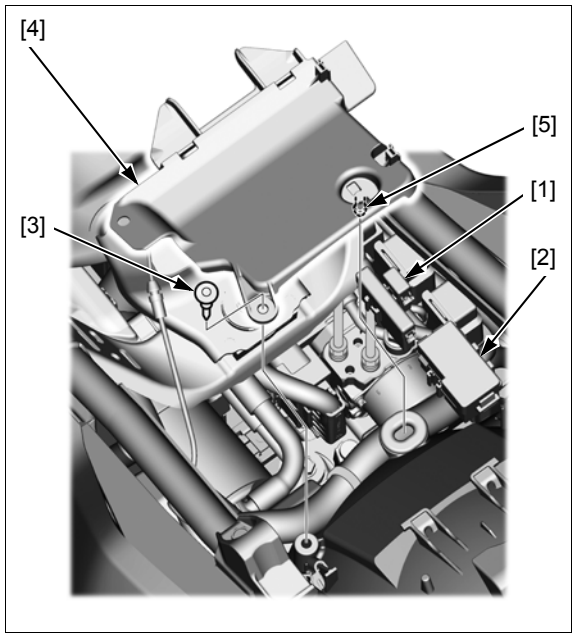
– Fuse box 1/2 [1]
– Fuse box 3 [2]
– Trim clip [3]

Remove the ETC tray [4] by releasing the boss [5].

Installation is in the reverse order of removal.

NOTE:

• Route the wire harnesses properly (page 26-17).



SIDE COVER

REMOVAL/INSTALLATION

RIGHT SIDE

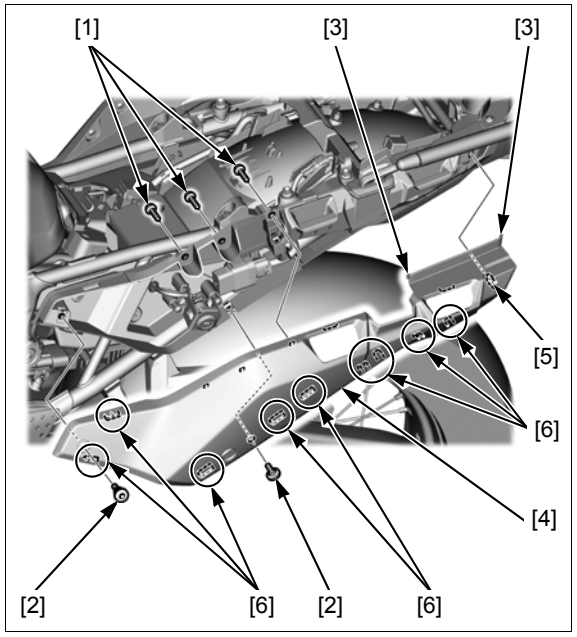
Remove the pillion seat (page 2-11).

Remove the screws [1] and socket bolts [2].

Release the tabs [3] of side cover from the carrier bracket.

Remove the side cover [4] by releasing the snap fit clip [5] and tabs [6].

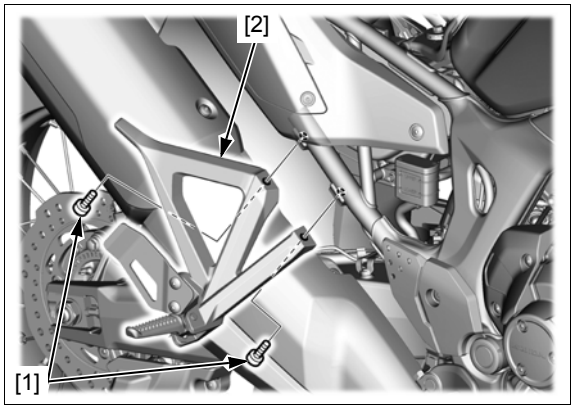
Installation is in the reverse order of removal.



LEFT SIDE

Remove the pillion seat (page 2-11).

Remove the socket bolts [1] and left pillion step bracket [2].



Remove the socket bolts [1] and right rear side lid [2].

Remove the screws [3] and socket bolts [4].

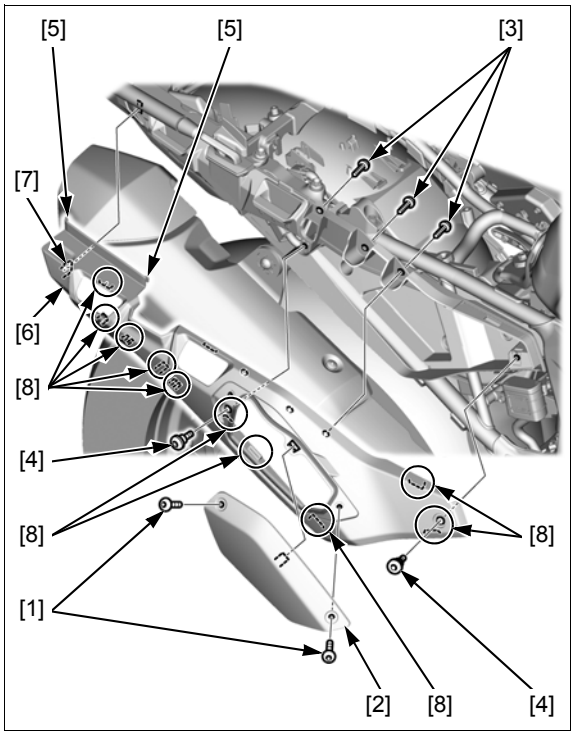
Release the tabs [5] of side cover from the carrier bracket.

Remove the side cover [6] by releasing the snap fit clip [7] and tabs [8].

Installation is in the reverse order of removal.

TORQUE:

Pillion step bracket mounting bolt:
32 N·m (3.3 kgf·m, 24 lbf·ft)



REAR SIDE INNER BODY

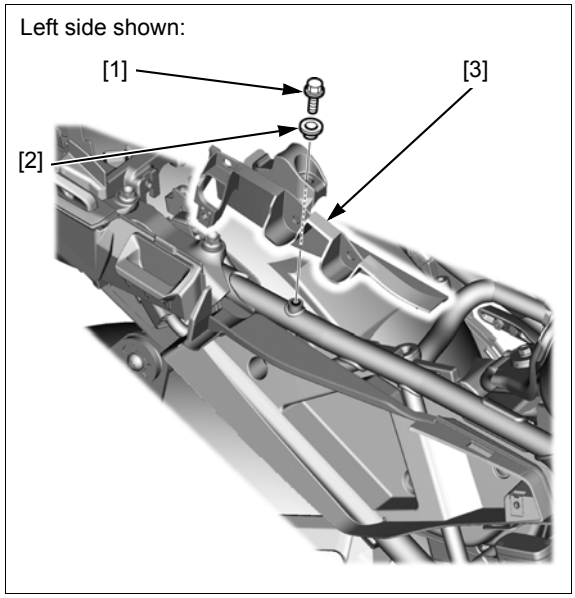
REAR SIDE INNER BODY A

REMOVAL/INSTALLATION

Remove the side cover (page 26-49).

Remove the bolt [1], collar [2] and rear side inner body A [3].

Installation is in the reverse order of removal.



LEFT REAR SIDE INNER BODY B

REMOVAL/INSTALLATION

Remove the following:

– Seat catch stay (page 26-48)
– Rear side inner body A (page 26-51)

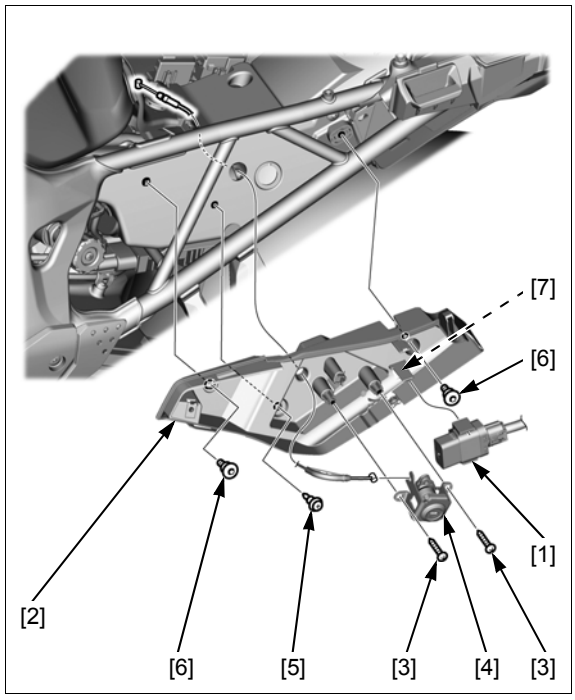
Release the grip heater controller [1] from the left rear side inner body B [2].

Remove the screws [3] and seat lock cylinder [4].

Remove the trim clip [5] and socket bolts [6].

Remove the left rear side inner body B by releasing its tab [7].

Installation is in the reverse order of removal.



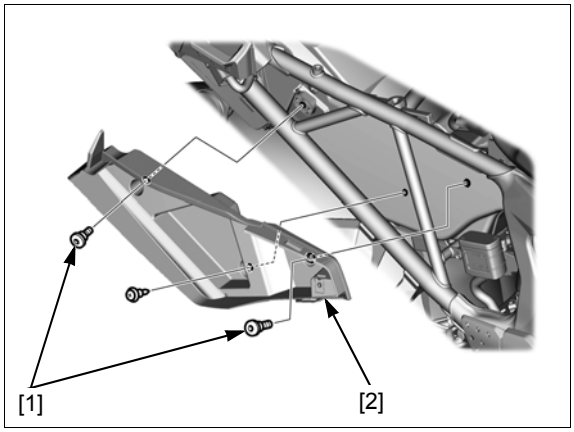
RIGHT REAR SIDE INNER BODY B

REMOVAL/INSTALLATION

Remove the rear side inner body A (page 26-51).

Remove the socket bolts [1] and right rear side inner body B [2].

Installation is in the reverse order of removal.



REAR CARRIER

CRF1000A/AL/D/DL

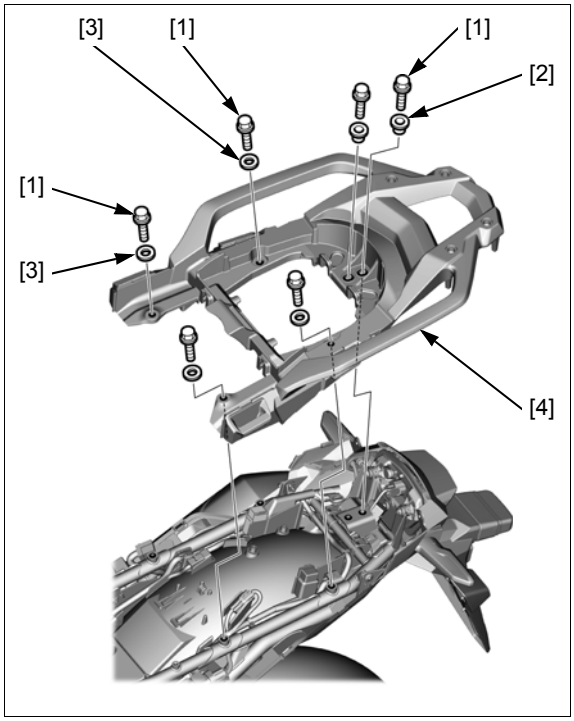
REMOVAL/INSTALLATION

Remove the side covers (page 2-11).

Remove the following:

– Flange bolts [1]
– Collars [2]
– Washers [3]
– Rear carrier [4]

Installation is in the reverse order of removal.



CRF1000A2/AL2/D2/DL2

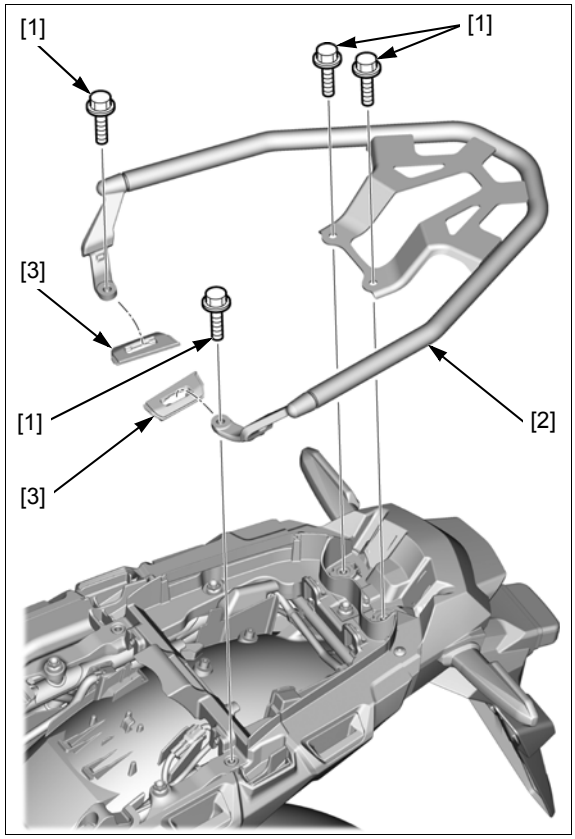
REMOVAL/INSTALLATION

Remove the pillion seat (page 2-11).

Remove the bolts [1] and rear carrier [2].

Remove the carrier rubbers [3] from the rear carrier.

Installation is in the reverse order of removal.



CARRIER BRACKET

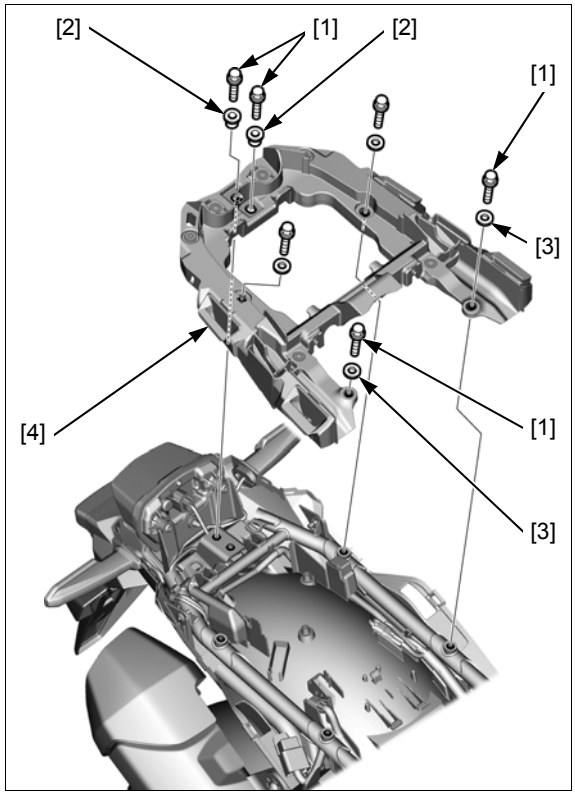
REMOVAL/INSTALLATION

Remove the rear center cowl (page 26-54).

Remove the following:

– Bolts [1]
– Collars [2]
– Washers [3]
– Carrier bracket [4]

Installation is in the reverse order of removal.



REAR CENTER COWL

REMOVAL/INSTALLATION

CRF1000A/AL/D/DL: Remove the rear carrier (page 26-52).

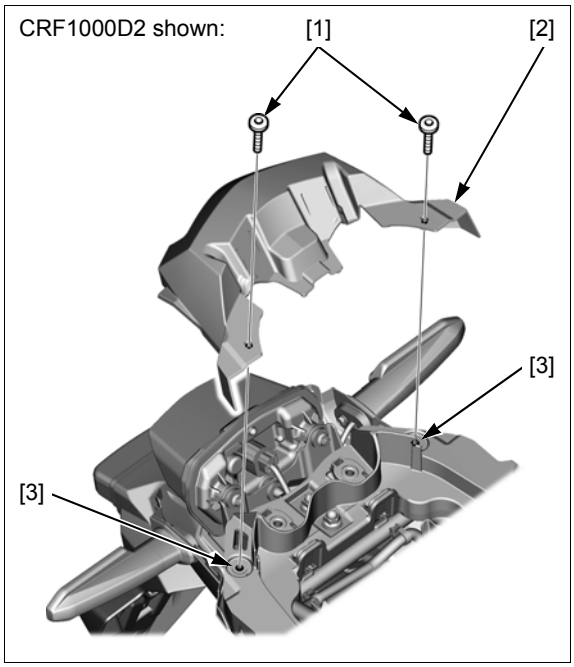
CRF1000A2/AL2/D2/DL2: Remove the following:

– Side cover (page 26-49)
– Rear carrier (page 26-52)

Remove the socket bolts [1] and rear center cowl [2].

Remove the well nuts [3] from the carrier bracket.

Installation is in the reverse order of removal.



REAR FENDER A

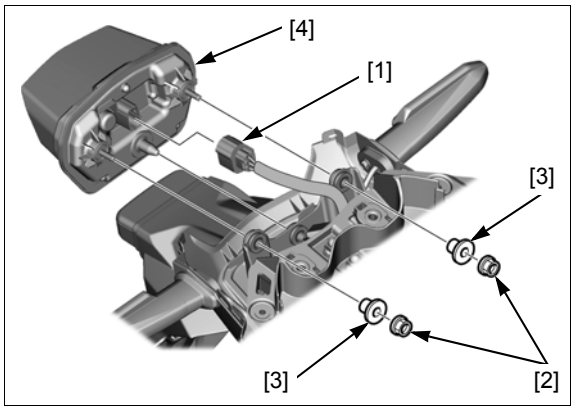
REMOVAL/INSTALLATION

CRF1000A/AL/D/DL: Remove the rear center cowl (page 26-54).

CRF1000A2/AL2/D2/DL2: Remove the carrier bracket (page 26-53).

Disconnect the brake/taillight 3P (Black) connector [1].

Remove the nuts [2], collars [3] and brake/taillight [4].



Remove the wire band [1].

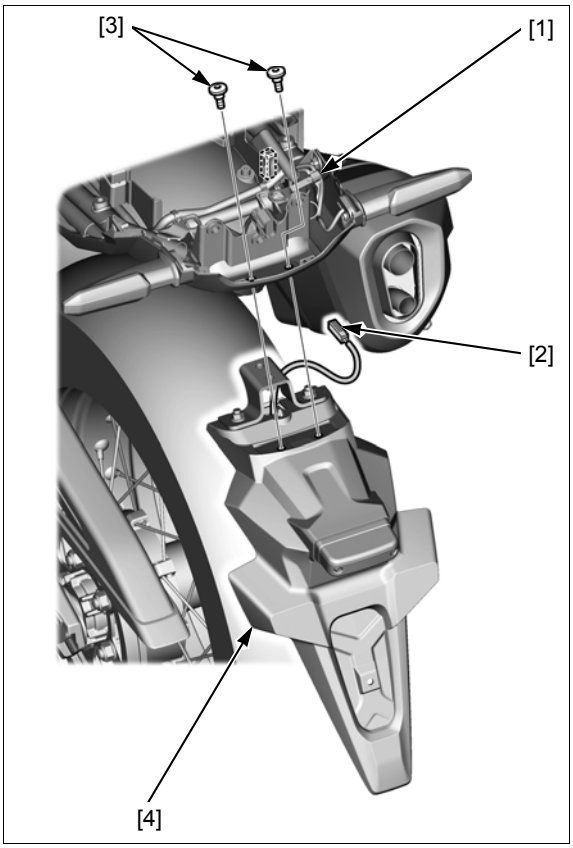
Disconnect the license light 2P (White) connector [2].

Remove the socket bolts [3] and rear fender A [4].

Installation is in the reverse order of removal.

NOTE:

- Route the wires properly (page 26-17).



DISASSEMBLY/ASSEMBLY

Remove the rear fender A (page 26-54).

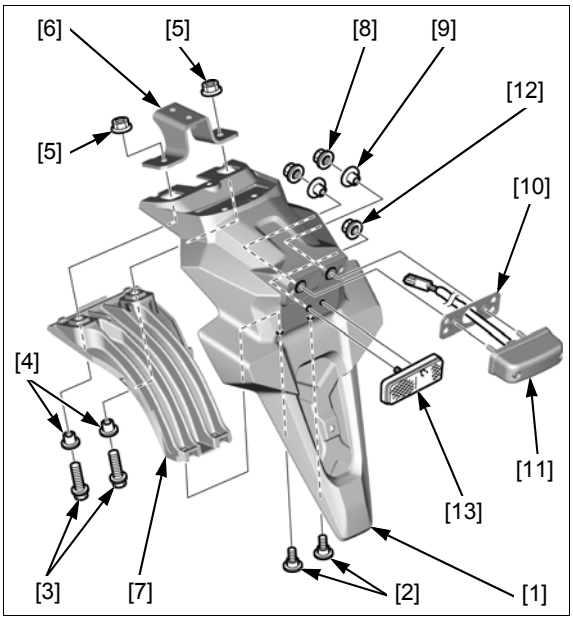
Remove the following parts from the rear fender A [1]:

– Socket bolt [2]
– Bolts [3]
– Collars [4]
– Nuts [5]
– Fender cover bracket [6]
– Rear fender A cover [7]

Remove the nuts [8], collars [9], license light rubber [10] and license light [11].

Remove the nut [12] and reflector [13].

Assembly is in the reverse order of disassembly.



REAR FENDER B

SEAT LOCK CYLINDER (CRF1000A/AL/D/DL/DL)

REMOVAL/INSTALLATION

Remove the ETC tray (page 26-49).

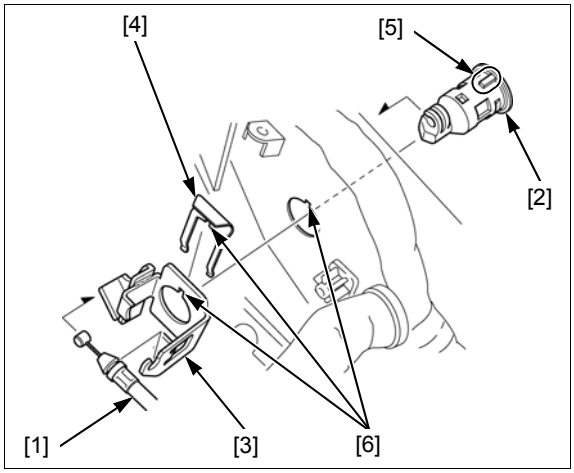
Disconnect the seat lock cable [1] from the seat lock cylinder [2] and stay [3].

Remove the lock spring [4], cylinder, and stay.

Installation is in the reverse order of removal.

NOTE:

- Align the lug [5] of the cylinder with the grooves [6] of the rear fender B, lock spring, and stay.



REMOVAL/INSTALLATION

Remove the following:

- Rear fender A (page 26-54)
- Muffler
  - CRF1000A/AL/D/DL (page 2-16)
  - CRF1000A2/AL2/D2/DL2 (page 26-58)
- Regulator/rectifier (page 21-8)
- ABS modulator (page 26-195)

CRF1000A/A2/AL/AL2: Remove the seat lock cylinder (page 26-56).

CRF1000D/D2/DL/DL2: Remove the following:

- Rear side inner body (page 26-51)
- ETC tray (page 26-49)

ED/KO/TH/FO/MA models: Remove the EVAP canister (page 26-131).

Disconnect the following:

- Rear turn signal light 2P (Light blue) connector [1]
- Rear turn signal light 2P (Orange) connector [2]
- Turn signal light relay 18P (Black) connector (page 2-13)

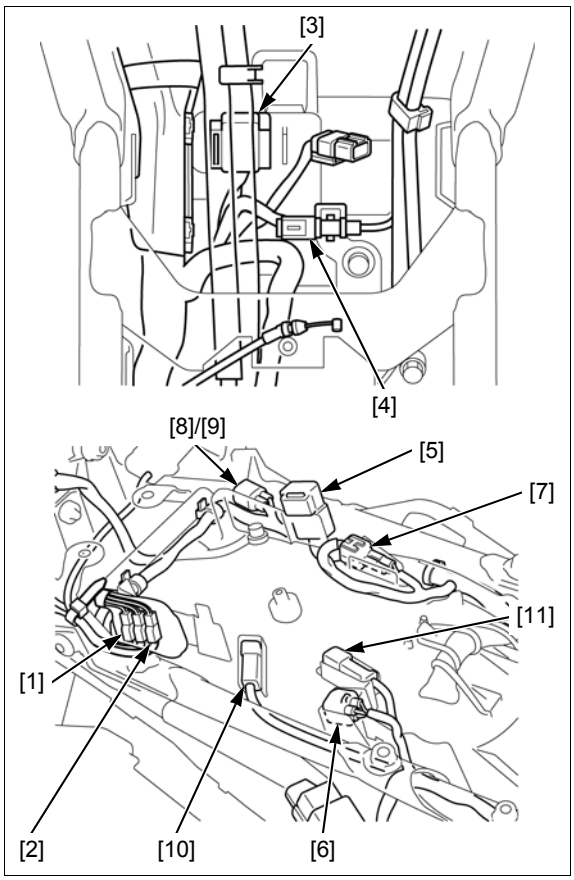
Release the following:

- TBW relay [3]
- Rear wheel speed sensor 2P (Black) connector [4]
- Fan control relay [5]
- DLC [6]
- CKP sensor 2P (Red) connector [7]

IN model: Release the option 4P connector [8].

Except IN model: Release the option 6P connector [9].

CRF1000A/A2/AL/AL2: Release the resistor [10] and diode [11].



Remove the screw [1] and mud guard [2].

NOTE:

- Move the mud guard to the left to release the mud guard tab [3].

Remove the socket bolts [4].

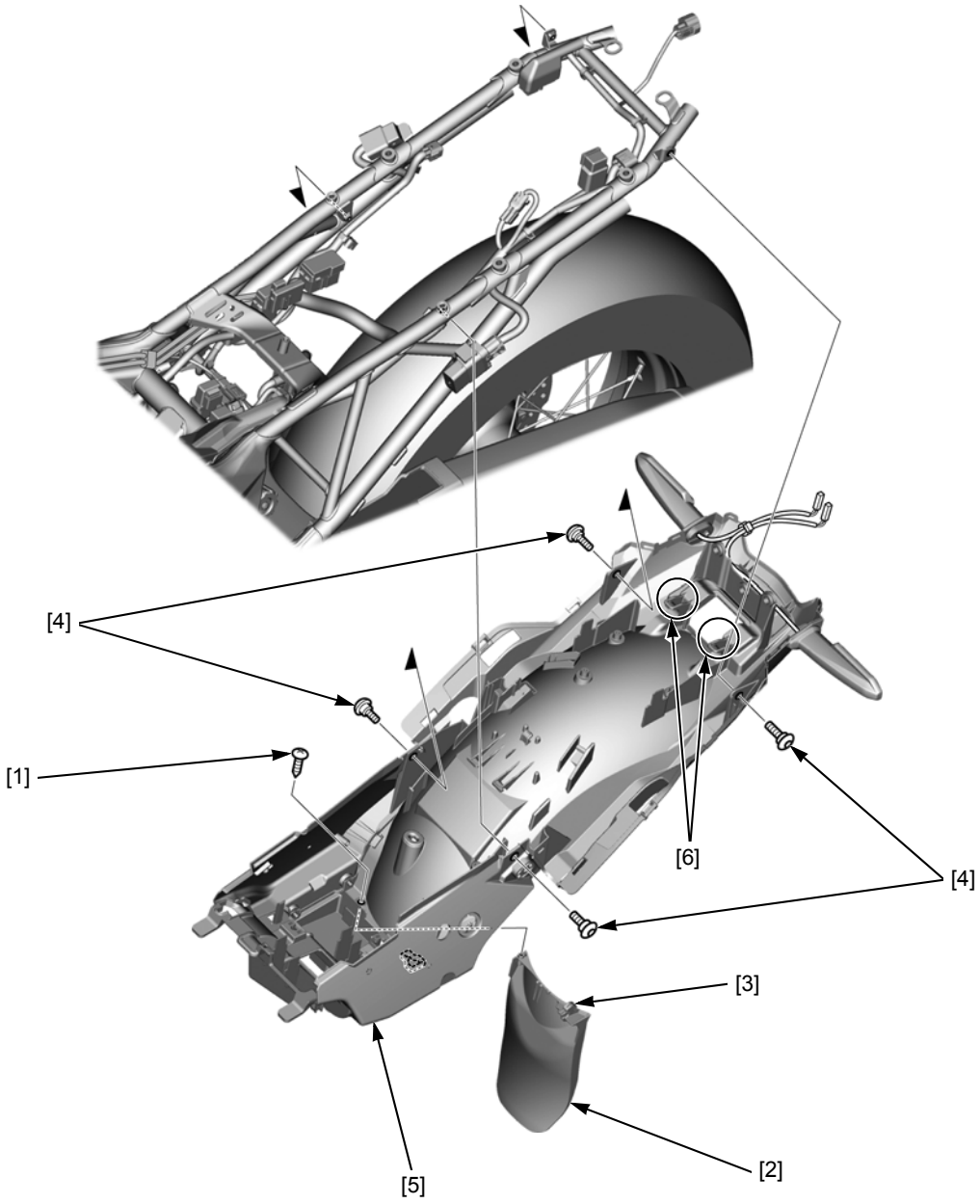
Remove the rear fender B [5] by pulling it rearward.

Remove the turn signal light relay from the rear fender B (page 22-9).

Installation is in the reverse order of removal.

NOTE:

- Place the hooks of rear fender B [6] onto the frame.
- Route the wires, pipes and hoses properly (page 26-17).

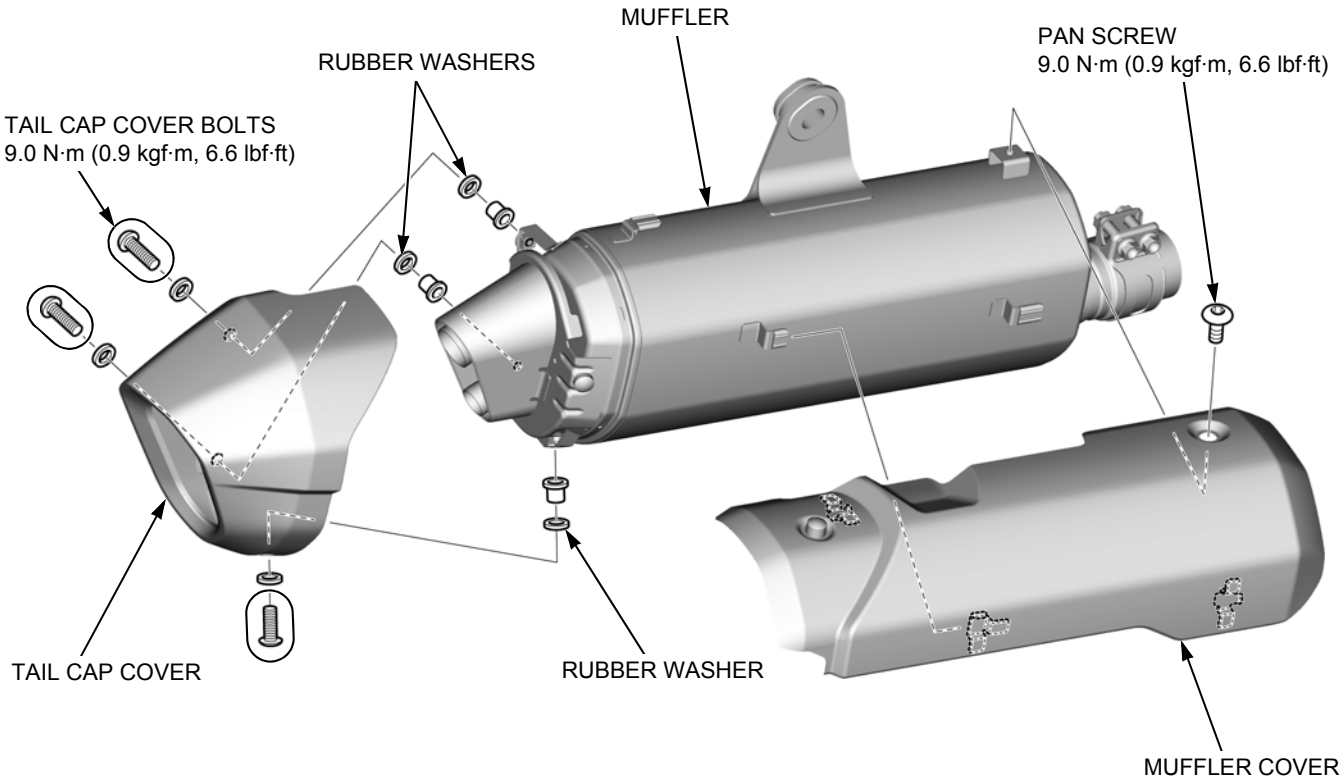


MUFFLER/EXHAUST PIPE

MUFFLER

DISASSEMBLY/ASSEMBLY

Remove the muffler (page 2-16).



NOTE:

- Align the slots of the muffler cover with the bosses of the muffler.

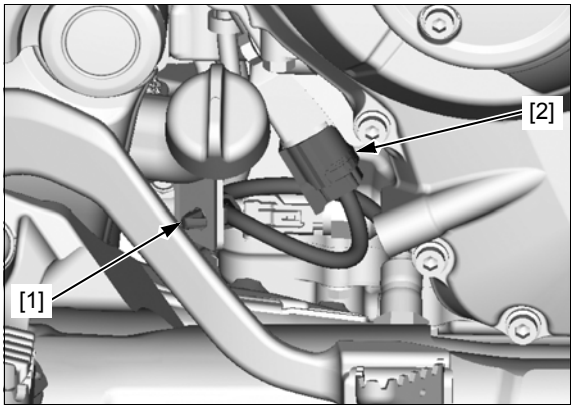
EXHAUST PIPE

REMOVAL/INSTALLATION

Remove the following:

– Skid plate (page 26-46)
– Muffler (page 2-16)

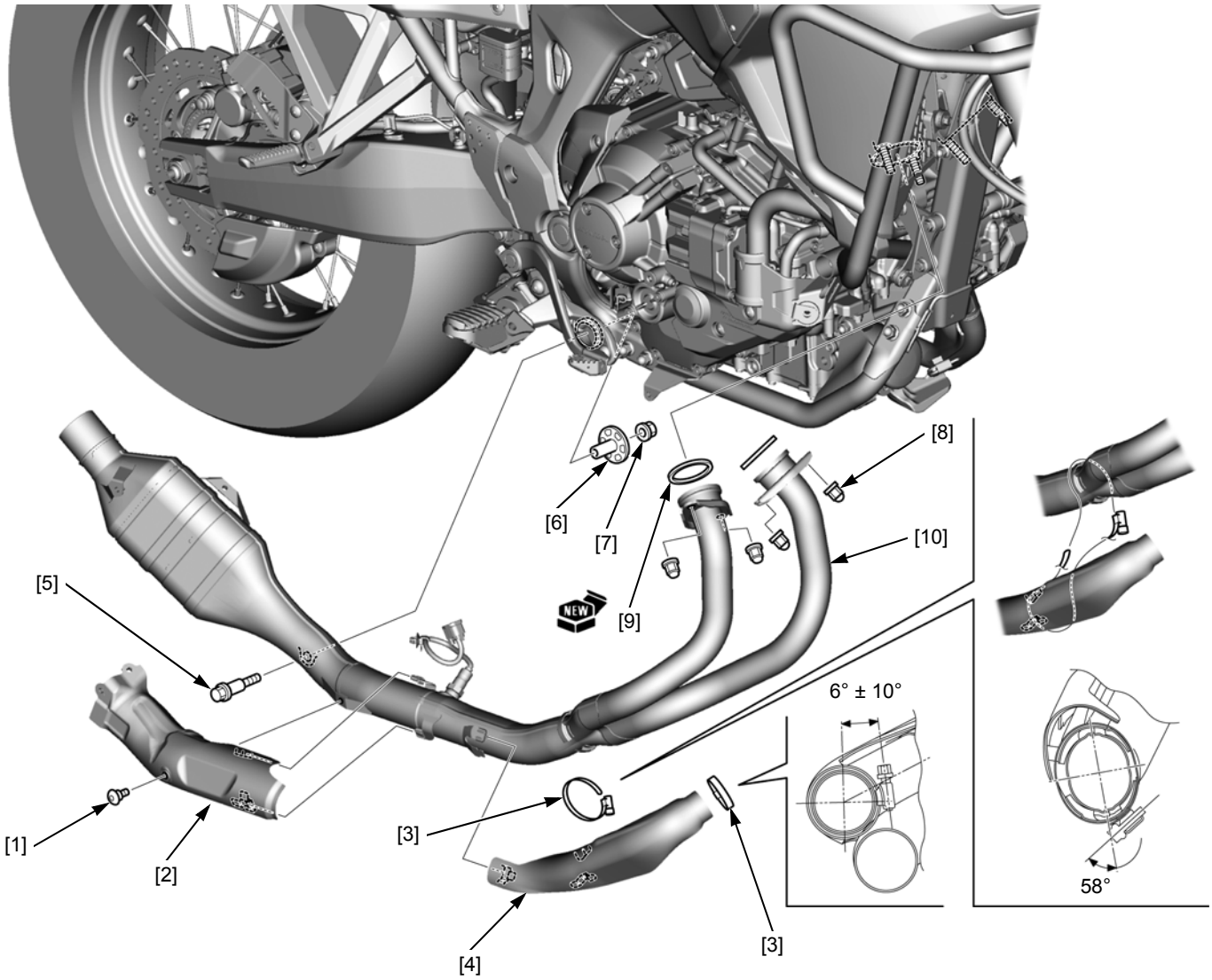
Release the O_2 sensor wire clip [1] and disconnect the 4P (Black) connector [2].



Remove the pan screw [1] and exhaust pipe cover A [2].
Loosen the band screw and remove the band [3] and exhaust pipe cover B [4].

Remove the mounting bolt [5], collar [6], and mounting nut [7].
Remove the exhaust pipe joint nuts [8], gaskets [9], and exhaust pipe [10].

Installation is in the reverse order of removal.



NOTE:

- Always replace the gaskets with new ones.
- When installing the exhaust pipe, loosely install all of the exhaust pipe fasteners.
- Always tighten the joint nuts first, then tighten the mounting bolt.
- Align the slots of the exhaust pipe cover A/B with the bosses of the exhaust pipe.
- For O_2 sensor removal/installation (page 4-42)

TORQUE:

Exhaust pipe joint nut:
20 N·m (2.0 kgf·m, 15 lbf·ft)
Exhaust pipe cover A pan screw:
9.0 N·m (0.9 kgf·m, 6.6 lbf·ft)
Exhaust pipe cover B front band screw:
1.2 N·m (0.1 kgf·m, 0.9 lbf·ft)
Exhaust pipe cover B rear band screw:
3.5 N·m (0.4 kgf·m, 2.6 lbf·ft)

SIDESTAND

REMOVAL/INSTALLATION

Remove the sidestand switch (page 22-27) (not necessary to disconnect the connector).

Support the motorcycle securely using a hoist or equivalent.

Remove the sidestand return springs [1].

Remove the sidestand pivot nut [2] and bolt [3], then remove the sidestand [4] and collar [5].

Apply molybdenum disulfide grease to the sidestand pivot bolt sliding surface and collar outer surface.

Install the sidestand and collar.

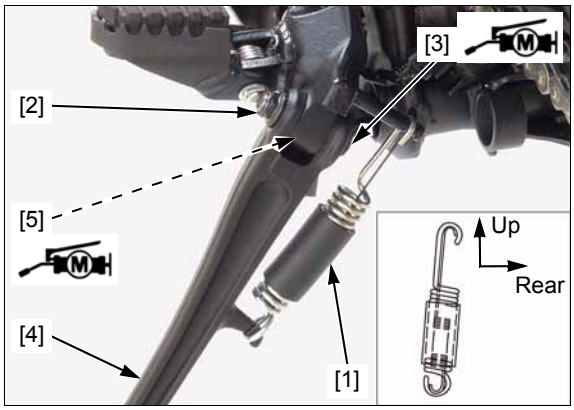
Install and tighten the pivot bolt.

Install and tighten the sidestand pivot nut to the specified torque while holding the sidestand pivot bolt.

TORQUE: 42 N·m (4.3 kgf·m, 31 lbf·ft)

Install the sidestand and return springs in the direction as shown.

Install the sidestand switch (page 22-27).



FRONT NUMBER STAY (IN model only)

CRF1000A2/AL2/D2/DL2

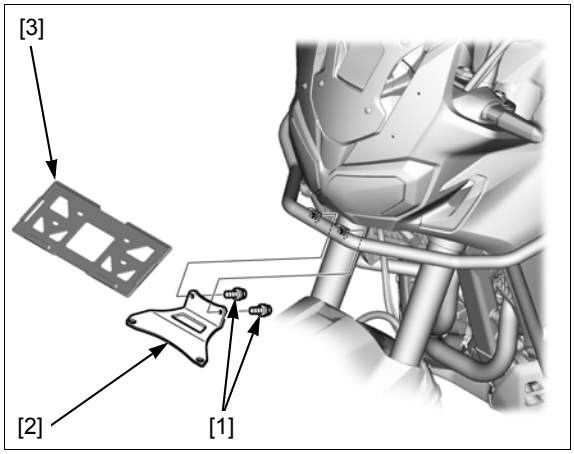
REMOVAL/INSTALLATION

Remove the bolts [1] and front number bracket [2] from the front side pipe.

Installation is in the reverse order of removal.

NOTE:

- The number plate guard [3] must be removed and installed from the front number bracket together with the number plate.



MAINTENANCE SCHEDULE

CRF1000A/AL/AL2 FO/MA Models

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.

	ITEM	NOTE	FREQUENCY (NOTE 1)								ANNUAL CHECK	REGULAR REPLACE	REFER TO PAGE
			x 1,000 km	1	6	12	18	24	30	36			
			x 1,000 mi	0.6	4	8	12	16	20	24			
*	FUEL LINE					I		I		I	I		3-3
*	THROTTLE OPERATION					I		I		I	I		26-63
*	AIR CLEANER	NOTE 2					R			R			3-4
	CRANKCASE BREATHER	NOTE 3			C	C	C	C	C	C			3-5
*	SPARK PLUG			EVERY 24,000 km (16,000 mi): I EVERY 48,000 km (32,000 mi): R									3-5 26-63
*	VALVE CLEARANCE							I					3-8
	ENGINE OIL			R		R		R		R	R		3-11
	ENGINE OIL FILTER			R				R					3-12
	RADIATOR COOLANT	NOTE 5				I		I		I	I	3 years	3-14
*	COOLING SYSTEM					I		I		I	I		3-15
*	SECONDARY AIR SUPPLY SYSTEM							I					3-15
*	EVAPORATIVE EMISSION CONTROL SYSTEM							I					25-21
	DRIVE CHAIN	NOTE 4		EVERY 1,000 km (600 mi): I, L									3-16
	DRIVE CHAIN SLIDER	NOTE 4				I		I		I			3-19
	BRAKE FLUID	NOTE 5			I	I	I	I	I	I	I	2 years	3-19
	BRAKE PADS WEAR				I	I	I	I	I	I	I		3-20
	BRAKE SYSTEM					I		I		I	I		3-20
	BRAKE LIGHT SWITCH					I		I		I	I		3-21
	HEADLIGHT AIM					I		I		I	I		3-22
	CLUTCH SYSTEM				I	I	I	I	I	I	I		3-22
	SIDESTAND					I		I		I	I		3-23
*	SUSPENSION					I		I		I	I		3-23
*	NUTS, BOLTS, FASTENERS	NOTE 4				I		I		I	I		3-25
**	WHEELS/TIRES	NOTE 4			I	I	I	I	I	I	I		3-26
**	STEERING HEAD BEARINGS					I		I		I	I		3-26

* 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 your motorcycle 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. Service more frequently when riding OFF-ROAD.
5. Replacement requires mechanical skill.

CRF1000DL/DL2 MA Model

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.

	ITEM	NOTE	FREQUENCY (NOTE 1)								ANNUAL CHECK	REGULAR REPLACE	REFER TO PAGE
			x 1,000 km	1	6	12	18	24	30	36			
			x 1,000 mi	0.6	4	8	12	16	20	24			
*	FUEL LINE					I		I		I	I		3-3
*	THROTTLE OPERATION					I		I		I	I		26-63
*	AIR CLEANER	NOTE 2					R			R			3-4
	CRANKCASE BREATHER	NOTE 3			C	C	C	C	C	C			3-5
*	SPARK PLUG			EVERY 24,000 km (16,000 mi): I EVERY 48,000 km (32,000 mi): R									3-5 26-63
*	VALVE CLEARANCE							I					3-8
	ENGINE OIL			R		R		R		R	R		3-11
	ENGINE OIL FILTER			R				R					3-12
	CLUTCH OIL FILTER			R				R					3-14
	RADIATOR COOLANT	NOTE 5				I		I		I	I	3 years	3-15
*	COOLING SYSTEM					I		I		I	I		3-15
*	SECONDARY AIR SUPPLY SYSTEM							I					3-3
*	EVAPORATIVE EMISSION CONTROL SYSTEM							I					25-21
	DRIVE CHAIN	NOTE 4		EVERY 1,000 km (600 mi): I, L									3-16
	DRIVE CHAIN SLIDER	NOTE 4				I		I		I			3-19
	BRAKE FLUID	NOTE 5			I	I	I	I	I	I	I	2 years	3-19
	BRAKE PADS WEAR				I	I	I	I	I	I	I		3-20
	BRAKE SYSTEM					I		I		I	I		3-20
	BRAKE LIGHT SWITCH					I		I		I	I		3-21
*	BRAKE LOCK OPERATION				I	I	I	I	I	I			3-21
	HEADLIGHT AIM					I		I		I	I		3-22
	SIDESTAND					I		I		I	I		3-23
*	SUSPENSION					I		I		I	I		3-23
*	NUTS, BOLTS, FASTENERS	NOTE 4				I		I		I	I		3-25
**	WHEELS/TIRES	NOTE 4			I	I	I	I	I	I	I		3-26
**	STEERING HEAD BEARINGS					I		I		I	I		3-26

* 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 your motorcycle after each periodic maintenance is carried out.

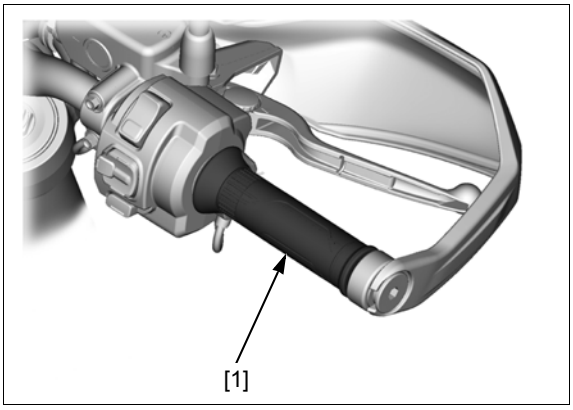
NOTES:

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. Service more frequently when riding OFF-ROAD.
5. Replacement requires mechanical skill.

THROTTLE OPERATION

Check for smooth operation of the throttle grip [1] and that it returns automatically to the fully closed position from any open position and from any steering position.

Clean and apply grease the throttle pipe-to-APS contacting area if throttle operation is not smooth (page 26-116).



SPARK PLUG

PULL THE RADIATOR TO OUTSIDE

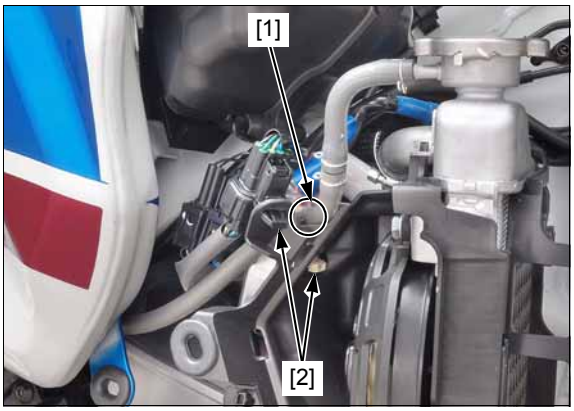
RIGHT SIDE

Remove the inner cover (page 2-8).

Remove the bolts [1] and washers [2].

Release the siphon hose [1].

Release the connector clip [2] from the radiator shroud.



Release the clamps [1] from the radiator shroud.

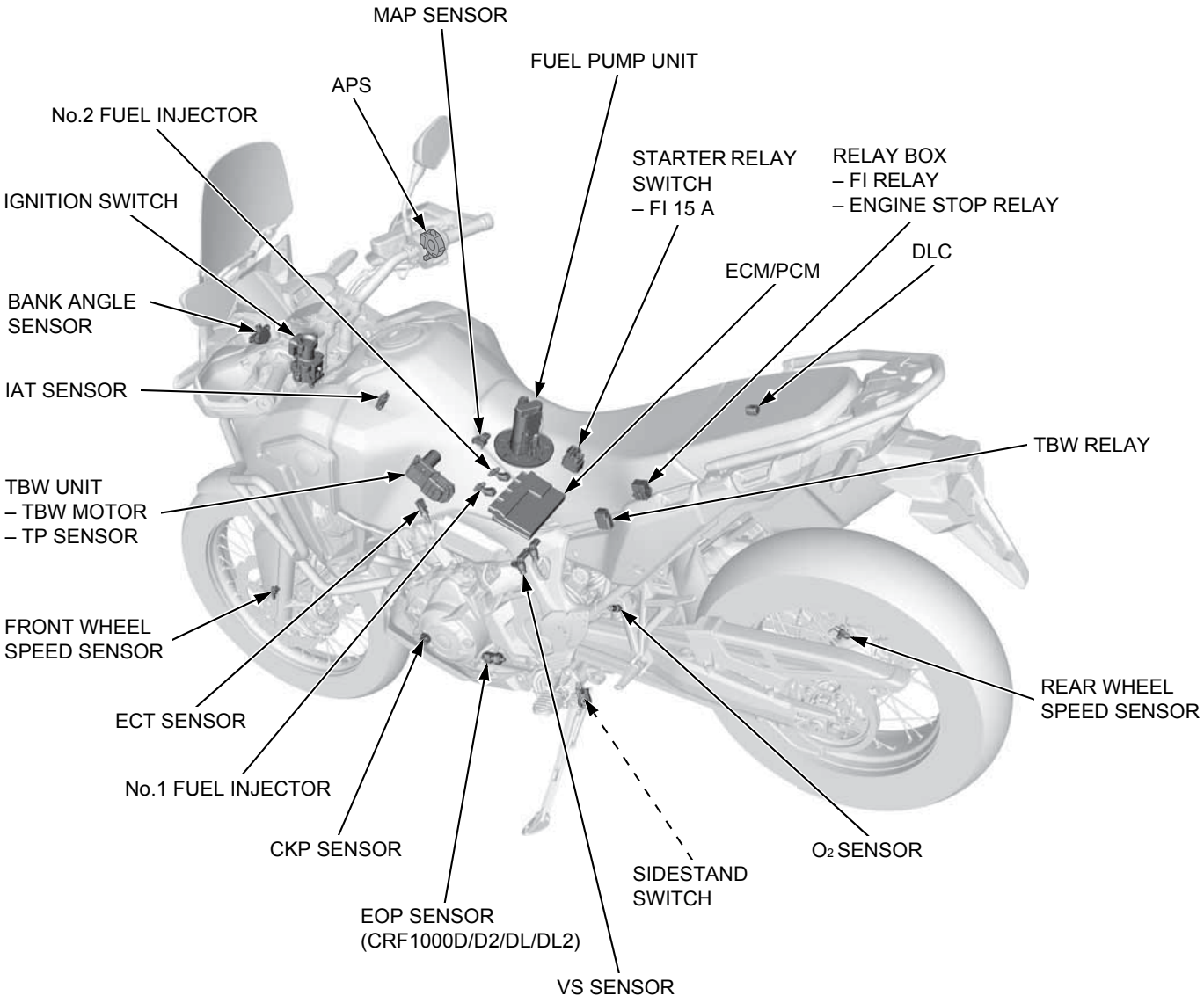
Pull the right radiator to outside.

Installation is in the reverse order of removal.

NOTE:

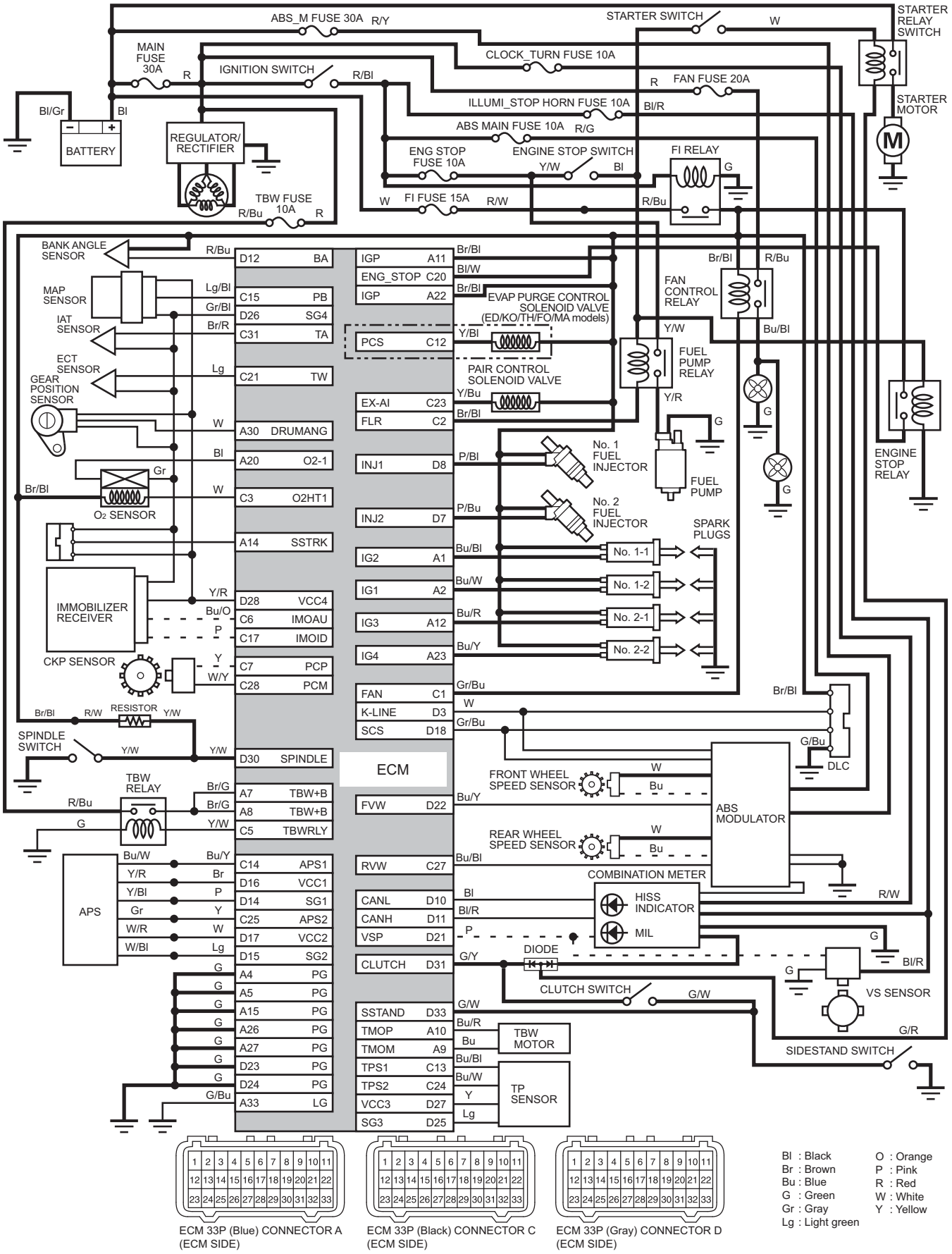
- Route the hose and wire properly (page 26-17).

PGM-FI SYSTEM LOCATION

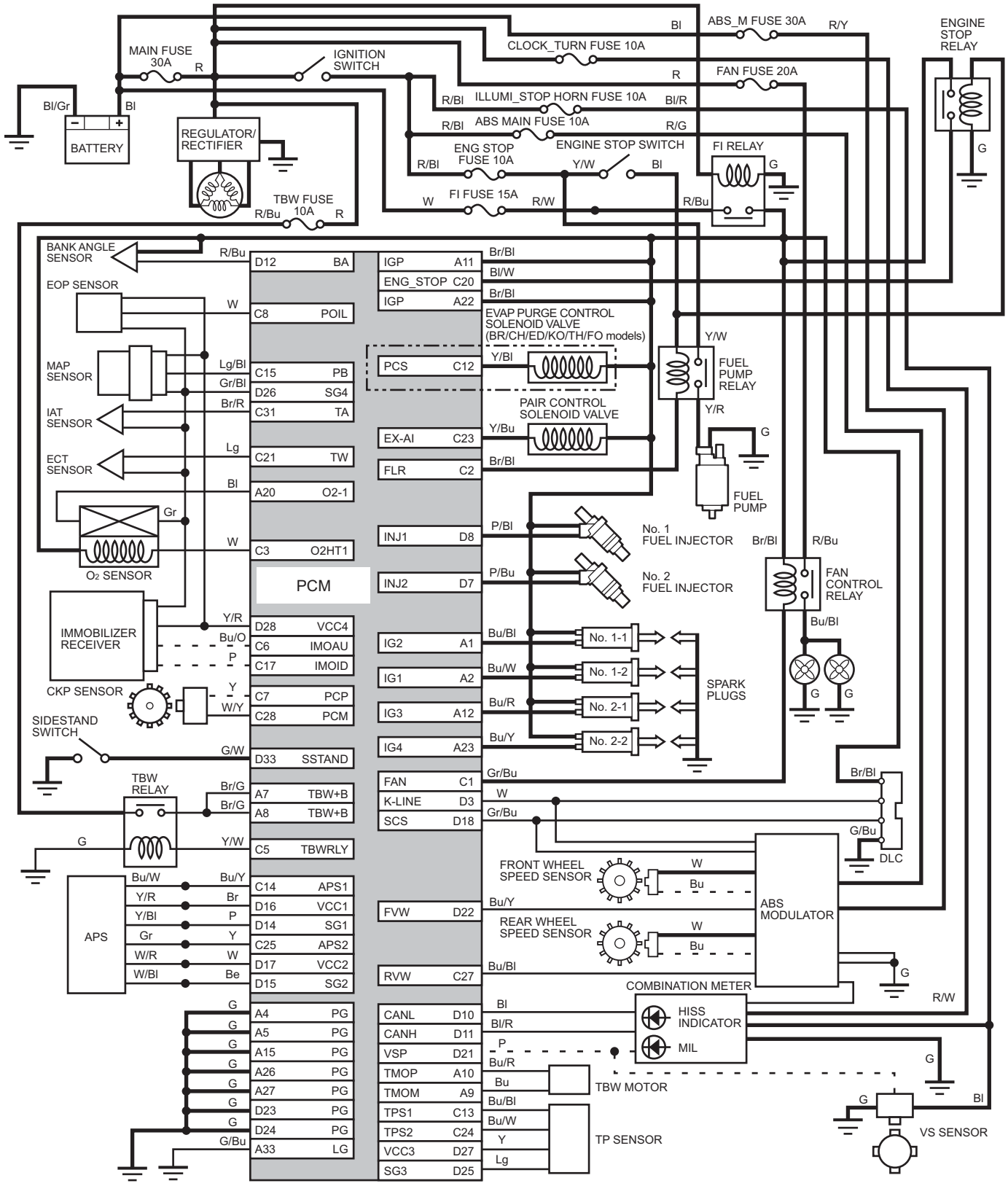


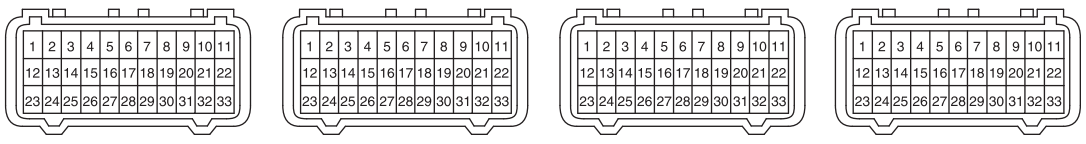
PGM-FI SYSTEM DIAGRAM

CRF1000A/A2/AL/AL2



CRF1000D/D2/DL/DL2





PCM 33P (Blue) CONNECTOR A (PCM SIDE)

PCM 33P (Brown) CONNECTOR B (PCM SIDE)

PCM 33P (Black) CONNECTOR C (PCM SIDE)

PCM 33P (Gray) CONNECTOR D (PCM SIDE)

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

PGM-FI DTC INDEX

NOTE:

- If the MCS is not used, perform all of the inspection on the corresponding main code (digits in front of hyphen) of the Honda code.
- The main code of Honda code (the number in front of hyphen) can be indicated as MIL blinking.
- About Diagnostic Trouble Codes (P code) other than in this DTC INDEX, refer to DCT SYSTEM DTC INDEX (page 26-135).

DTC (Honda code)	Function Failure	Symptom/Fail-safe function	Refer to page
P0107 (1-1)	MAP sensor circuit low voltage (less than 0.029 V) • MAP sensor or its circuit malfunction	• Engine operates normally	26-70
P0108 (1-2)	MAP sensor circuit high voltage (more than 3.809 V) • Loose or poor contact of the MAP sensor connector • MAP sensor or its circuit malfunction	• Engine operates normally	26-71
P1002 (2-1)	MAP sensor performance problem • Loose or poor contact of the MAP sensor hose • MAP sensor malfunction	• Engine operates normally	26-72
P0117 (7-1)	ECT sensor circuit low voltage (less than 0.049 V) • ECT sensor or its circuit malfunction	• Hard start at a low temperature	26-73
P0118 (7-2)	ECT sensor circuit high voltage (more than 4.946 V) • Loose or poor contact of the ECT sensor connector • ECT sensor or its circuit malfunction	• Hard start at a low temperature	26-73
P0112 (9-1)	IAT sensor circuit low voltage (less than 0.049 V) • IAT sensor or its circuit malfunction	• Engine operates normally	26-74
P0113 (9-2)	IAT sensor circuit high voltage (more than 4.946 V) • Loose or poor contact of the sensor unit connector • IAT sensor or its circuit malfunction	• Engine operates normally	26-75
P0500 (11-1)	VS sensor malfunction • Loose or poor contact of the VS sensor connector • VS sensor or its circuit malfunction	• Engine operates normally	26-76
P0201 (12-1)	No. 1 (left) fuel injector malfunction • Loose or poor contact of the fuel injector connector • Fuel injector or its circuit malfunction	• Engine does not start • Fuel injector, fuel pump and ignition coil shut down	26-78
P0202 (13-1)	No. 2 (right) fuel injector malfunction • Loose or poor contact of the fuel injector connector • Fuel injector or its circuit malfunction	• Engine does not start • Fuel injector, fuel pump and ignition coil shut down	
P0131 (21-1)	O_2 sensor circuit low voltage (less than 0.059 V) • O_2 sensor or its circuit malfunction	• Engine operates normally	26-79
P0132 (21-2)	O_2 sensor circuit high voltage (more than 3.008 V) • Loose or poor contact of the O_2 sensor connector • O_2 sensor or its circuit malfunction	• Engine operates normally	26-80
P0135 (23-1)	O_2 sensor heater malfunction • Loose or poor contact of the O_2 sensor connector • O_2 sensor heater or its circuit malfunction	• Engine operates normally	26-81
P062F (33-2)	ECM/PCM EEPROM malfunction	• Engine operates normally • Does not hold the self-diagnosis data	26-83
P1702 (41-1)*1	Gear position sensor malfunction • Loose or poor contact of the gear position sensor connector • Gear position sensor or its circuit malfunction • ECM malfunction	• Engine operates normally • HSTC does not operate	26-83
P1000 (54-1)	Bank angle sensor circuit low voltage (less than 0.020 V) • Bank angle sensor or its circuit malfunction	• Engine operates normally • Engine stop function does not operate	26-85
P1001 (54-2)	Bank angle sensor circuit high voltage (more than 4.976 V) • Loose or poor contact of the bank angle sensor connector • Bank angle sensor or its circuit malfunction	• Engine operates normally • Engine stop function does not operate	26-86
P2158 (66-1)	Rear wheel speed sensor malfunction • Loose or poor contact of the rear wheel speed sensor connector • Faulty rear wheel speed sensor or its circuit malfunction	• Engine operates normally	26-87

DTC (Honda code)	Function Failure	Symptom/Fail-safe function	Refer to page
P1500 (67-1)	Front wheel speed sensor malfunction • Loose or poor contact of the front wheel speed sensor connector • Faulty front wheel speed sensor or its circuit malfunction	• Engine operates normally	26-88
P0122 (71-1)	TP sensor 1 low voltage • TP sensor 1 or its circuit malfunction	• Vehicle speed limit: approximately 120 km/h (75 mph) • HSTC does not operate	26-89
P0123 (71-2)	TP sensor 1 high voltage • Loose or poor contact of the TP sensor 1 connector • TP sensor 1 or its circuit malfunction	• Vehicle speed limit: approximately 120 km/h (75 mph) • HSTC does not operate	26-90
P0222 (72-1)	TP sensor 2 low voltage • TP sensor 2 or its circuit malfunction	• Vehicle speed limit: approximately 120 km/h (75 mph) • HSTC does not operate	26-91
P0223 (72-2)	TP sensor 2 high voltage • Loose or poor contact of the TP sensor 2 connector • TP sensor 2 or its circuit malfunction	• Vehicle speed limit: approximately 120 km/h (75 mph) • HSTC does not operate	26-92
P2135 (73-1)	TP sensors 1 and 2 voltage correlation malfunction • TP sensor or its circuit malfunction	• Engine operates at idle speed • HSTC does not operate	26-93
P2135 (73-2)	TP sensors 1 and 2 short circuit • TP sensor or its circuit malfunction	• Engine operates at idle speed • HSTC does not operate	
P2122 (74-1)	APS 1 (TCP) low voltage • Loose or poor contact of the APS connector • APS 1 or its circuit malfunction	• Engine operates at idle speed • HSTC does not operate	26-94
P2123 (74-2)	APS 1 (TCP) high voltage • APS 1 or its circuit malfunction	• Engine operates at idle speed • HSTC does not operate	26-95
P2127 (75-1)	APS 2 (TCP) low voltage • Loose or poor contact of the APS connector • APS 2 or its circuit malfunction	• Engine operates at idle speed • HSTC does not operate	26-96
P2128 (75-2)	APS 2 (TCP) high voltage • APS 2 or its circuit malfunction	• Engine operates at idle speed • HSTC does not operate	26-97
P2138 (76-1)	APS 1 – 2 (TCP) voltage correlation malfunction • APS or its circuit malfunction	• Engine operates at idle speed • HSTC does not operate	26-98
P1684 (77-1)	TBW return spring malfunction	• Vehicle speed limit: approximately 120 km/h (75 mph) • HSTC does not operate	26-99
P2118 (78-1)	TBW motor malfunction • TBW motor circuit malfunction	• Engine operates at idle speed • HSTC does not operate	26-100
P2101 (79-1)	TP sensor 2 low voltage • TP sensor 2 or its circuit malfunction	• Vehicle speed limit: approximately 120 km/h (75 mph) • HSTC does not operate	26-101
P055C (83-1)*2	EOP sensor low voltage (less than 0.059 V) • EOP sensor or its circuit malfunction	• Engine operates normally	26-101
P055D (83-2)*2	EOP sensor high voltage (more than 4.883 V) • Loose or poor contact of the EOP sensor connector • EOP sensor or its circuit malfunction	• Engine operates normally	26-102
P0606 (84-1)	CPU in the ECM/PCM malfunction • Faulty ECM/PCM	• Engine operates normally	26-103
P1658 (85-1)	TBW relay failure (ON side) • TBW relay or its circuit malfunction	• Vehicle speed limit: approximately 120 km/h (75 mph) • HSTC does not operate	26-103
P1659 (85-2)	TBW relay failure (OFF side) • TBW relay or its circuit malfunction	• Engine operates at idle speed • HSTC does not operate	
P0443 (88-1)*3	EVAP purge control solenoid valve malfunction • Loose or poor contact of the EVAP purge control solenoid valve connector • EVAP purge control solenoid valve or its circuit malfunction	• Engine operates normally	26-105
P0412 (89-1)	PAIR control solenoid valve malfunction • Loose or poor contact of the PAIR control solenoid valve connector • PAIR control solenoid valve or its circuit malfunction	• Engine operates normally	26-106

DTC (Honda code)	Function Failure	Symptom/Fail-safe function	Refer to page
P0351 (91-1)	No.1-1 (No.1 cylinder main) ignition coil circuit malfunction • Loose or poor contact of the ignition coil connector • Ignition coil or its circuit malfunction	• No.1 Injector and main ignition coil shut down	26-108
P0352 (92-1)	No.2-1 (No.2 cylinder main) ignition coil circuit malfunction • Loose or poor contact of the ignition coil connector • Ignition coil or its circuit malfunction	• No.2 Injector and main ignition coil shut down	
P0353 (93-1)	No.1-2 (No.1 cylinder sub) ignition coil circuit malfunction • Loose or poor contact of the ignition coil connector • Ignition coil or its circuit malfunction	• No.1 Injector and sub ignition coil shut down	
P0354 (94-1)	No.2-2 (No.2 cylinder sub) ignition coil circuit malfunction • Loose or poor contact of the ignition coil connector • Ignition coil or its circuit malfunction	• No.2 Injector and sub ignition coil shut down	
U0001 (103-1)	CAN communication malfunction • ECM/PCM failure • Combination meter failure • CAN communication circuit malfunction	• Engine operates normally • HSTC does not operate	26-110
U0155 (103-2)	CAN communication malfunction • Combination meter failure • CAN communication circuit malfunction	• Engine operates normally • HSTC does not operate	26-111
P170D (107-1)*1	Shift stroke sensor circuit low voltage • Loose or poor contact of the Shift stroke sensor connector • Shift stroke sensor or its circuit malfunction	• Engine operates normally • Quickshifter (Optional) does not operate	26-112
P1708 (108-1)*1	Shift spindle switch circuit low voltage • Shift spindle switch or its circuit malfunction	• Engine operates normally • Quickshifter (Optional) does not operate	26-113
P0704 (113-1)*1	Clutch switch circuit low voltage • Clutch switch or its circuit malfunction	• Engine operates normally • Quickshifter (Optional) does not operate	26-114

- *1: CRF1000A/A2/AL/AL2
- *2: CRF1000D/D2/DL/DL2
- *3: ED/KO/TH/FO/MA models

PGM-FI DTC TROUBLESHOOTING

NOTE:

- If the ECM/PCM is replaced, perform the Key Registration Procedure (page 23-3).
- CRF1000D/D2/DL/DL2: If the PCM is replaced, perform the Clutch Initialize Learning Procedure (page 13-82).

DTC P0107 (MAP SENSOR LOW VOLTAGE)

1. MAP sensor system inspection

Check the MAP sensor with the GST or MCS.

Is about 0 V indicated?

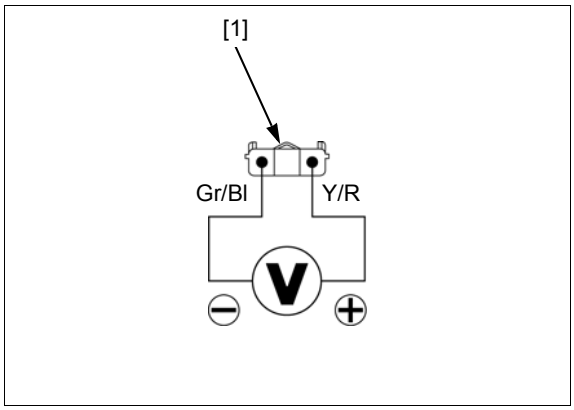
YES – GO TO STEP 2.

NO – Intermittent failure

2. MAP Sensor Input Voltage Inspection

Turn the ignition switch OFF.
Disconnect the MAP sensor 3P (Black) connector (page 26-128).
Turn the ignition switch ON.
Measure the voltage at the wire harness side 3P (Black) connector [1].

Connection: Yellow/red (+) – Gray/black (–)



Is the voltage within 4.75 – 5.25 V?

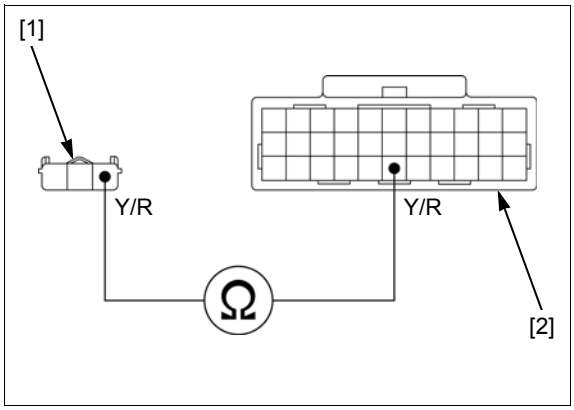
YES – GO TO STEP 4.

NO – GO TO STEP 3.

3. MAP Sensor Input Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 3P (Black) connector [1] and 33P (Gray) connector [2].

TOOL:
Test probe **07ZAJ-RDJA110**



Connection: Yellow/red – Yellow/red

Is there continuity?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Open circuit in the Yellow/red wire

4. MAP Sensor Signal Line Short Circuit Inspection

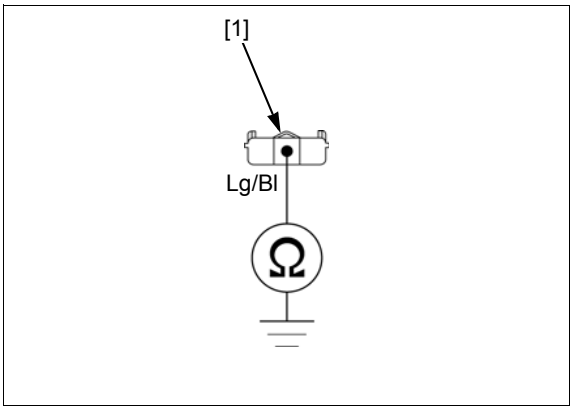
Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Gray) connector (page 4-39).
Check for continuity between 3P (Black) connector [1] and ground.

Connection: Light green/black – Ground

Is there continuity?

YES – Short circuit in the Light green/black wire

NO – GO TO STEP 5.



5. MAP Sensor Inspection

Replace the MAP sensor with a known good one (page 26-128).
Connect the 33P (Gray) connector.
Erase the DTC (page 25-25).
Check the MAP sensor with the GST or MCS.

Is DTC P0107 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original MAP sensor

DTC P0108 (MAP SENSOR HIGH VOLTAGE)

NOTE:

- Before starting the inspection, check for loose or poor contact on the MAP sensor 3P (Black), ECM/PCM 33P (Black) and 33P (Gray) connectors, and recheck the DTC.

1. MAP sensor system inspection

Check the MAP sensor with the GST or MCS.

Is about 5 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. MAP Sensor Input Voltage Inspection

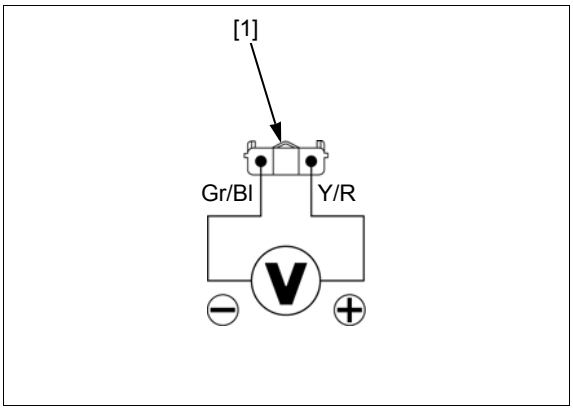
Turn the ignition switch OFF.
Disconnect the MAP sensor 3P (Black) connector (page 26-128).
Turn the ignition switch ON.
Measure the voltage at the wire harness side 3P (Black) connector [1].

Connection: Yellow/red (+) – Gray/black (–)

Is the voltage within 4.75 – 5.25 V?

YES – GO TO STEP 3.

NO – Open circuit in the Gray/black wire



3. MAP Sensor System Inspection with Jumper Wire

Turn the ignition switch OFF.
Connect the wire harness side 3P (Black) connector [1] terminals with a jumper wire [2].

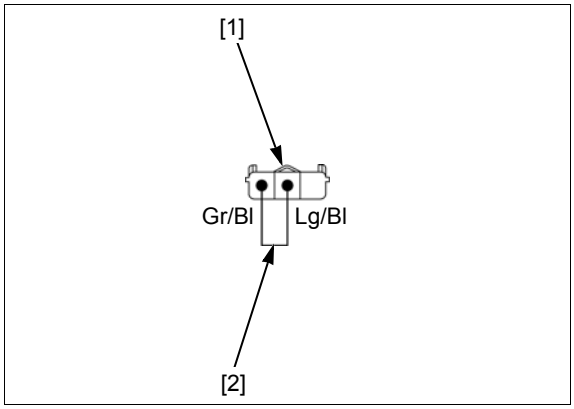
Connection: Light green/black – Gray/black

Check the MAP sensor with the GST or MCS.

Is about 0 V indicated?

YES – Faulty MAP sensor

NO – GO TO STEP 4.



4. MAP Sensor Signal Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Black) connector (page 4-39).
Check for continuity between the wire harness side 3P (Black) connector [1] and 33P (Black) connector [2].

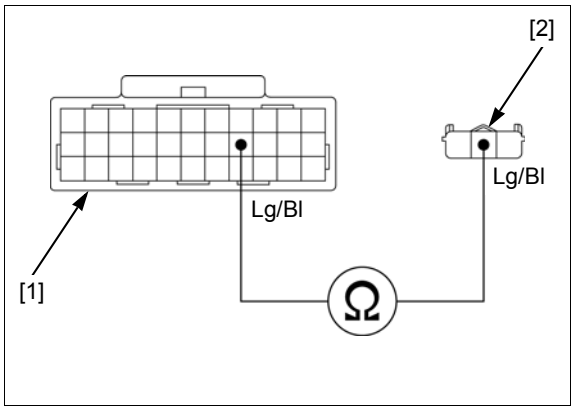
TOOL:
Test probe 07ZAJ-RDJA110

Connection:
Light green/black – Light green/black

Is there continuity?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Open circuit in the Light green/black wire



DTC P1002 (MAP SENSOR PERFORMANCE PROBLEM)

1. MAP Sensor System Inspection

Connect the GST or MCS.
Start the engine and check the MAP sensor with the MCS at idle speed.

Is the reading changed?

YES – Intermittent failure

NO – GO TO STEP 2.

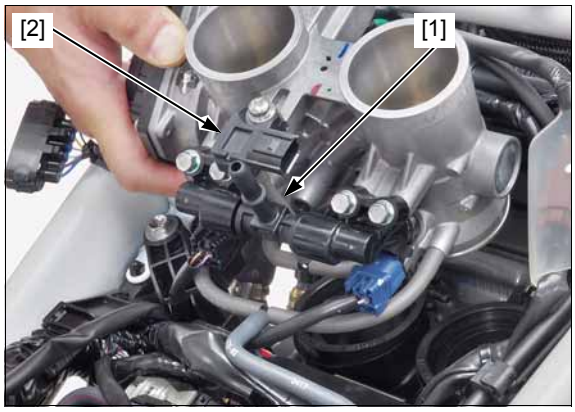
2. MAP Sensor Hose Inspection

Turn the ignition switch OFF.
Check that the hose [1] is connected to the MAP sensor [2] properly.

Is the hose connected properly?

YES – GO TO STEP 3.

NO – Correct the hose connection



3. MAP Sensor System Inspection

Replace the MAP sensor with a known good one (page 26-128).
Connect the GST or MCS.
Start the engine and check the MAP sensor with the MCS at idle speed.

Has the reading changed?

YES – Faulty original MAP sensor

NO – Replace the ECM/PCM with a known good one and recheck (page 4-39).

DTC P0117 (ECT SENSOR LOW VOLTAGE)

1. ECT Sensor System Inspection

Check the ECT sensor with the GST or MCS.

Is about 0 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. ECT Sensor System Inspection with Connector Disconnected

Turn the ignition switch OFF.
Disconnect the ECT sensor 2P (Black) connector (page 4-41).
Check the ECT sensor with the GST or MCS.

Is about 0 V indicated?

YES – GO TO STEP 3.

NO – Faulty ECT sensor

3. ECT Sensor Output Line Short Circuit Inspection

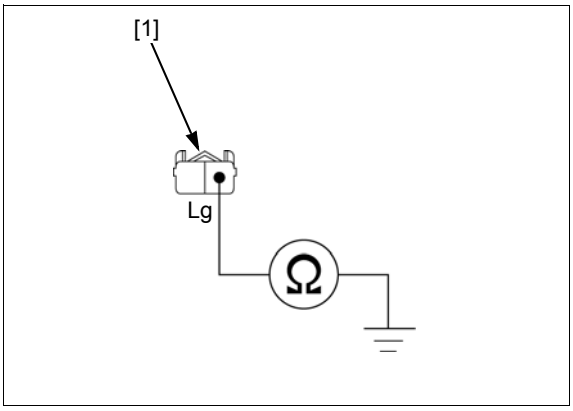
Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Black) connector (page 4-39).
Check for continuity between the wire harness side 2P (Black) connector [1] and ground.

Connection: Light green – Ground

Is there continuity?

YES – Short circuit in the Light green wire

NO – Replace the ECM/PCM with a known good one and recheck (page 4-39).



DTC P0118 (ECT SENSOR HIGH VOLTAGE)

NOTE:

- Before starting the inspection, check for loose or poor contact on the ECT sensor 2P (Black), ECM/PCM 33P (Black) and 33P (Gray) connectors, and recheck the DTC.

1. ECT Sensor System Inspection

Check the ECT sensor with the GST or MCS.

Is about 5 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. ECT Sensor System Inspection with Jumper Wire

Turn the ignition switch OFF.
Disconnect the ECT sensor 2P (Black) connector (page 4-41).
Connect the wire harness side 2P (Black) connector [1] terminals with a jumper wire [2].

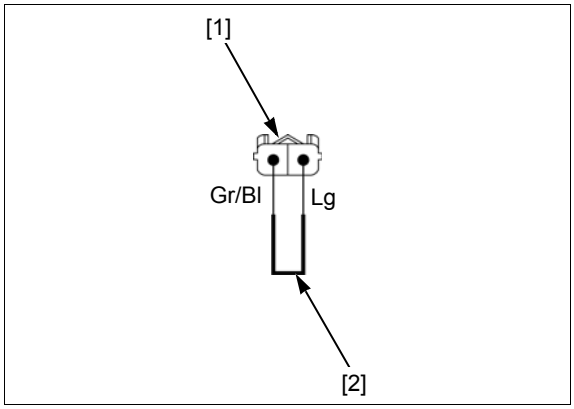
Connection: Light green – Gray/black

Check the ECT sensor with the GST or MCS.

Is about 0 V indicated?

YES – Faulty ECT sensor

NO – GO TO STEP 3.



3. ECT Sensor Output Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Black) connector (page 4-39).
Check for continuity between the wire harness side 2P (Black) connector [1] and 33P (Black) connector [2].

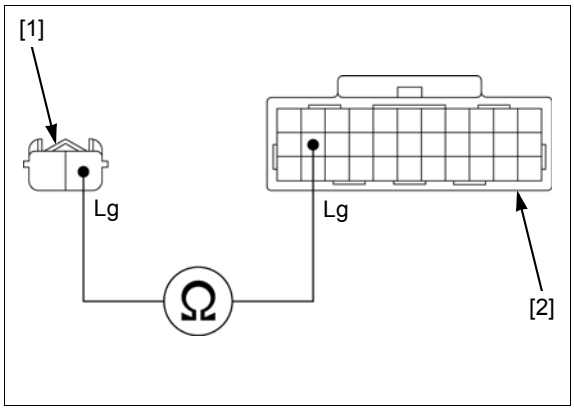
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Light green – Light green

Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Light green wire



4. ECT Sensor Ground Line Open Circuit Inspection

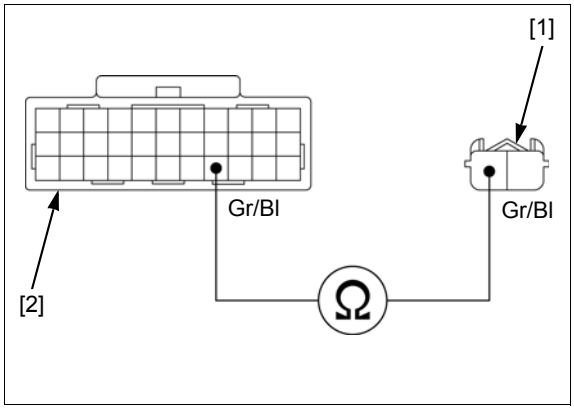
Disconnect the ECM/PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 2P (Black) connector [1] and 33P (Gray) connector [2].

Connection: Gray/black – Gray/black

Is there continuity?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Open circuit in the Gray/black wire



DTC P0112 (IAT SENSOR LOW VOLTAGE)

1. IAT Sensor System Inspection

Check the IAT sensor with the GST or MCS.

Is about 0 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. IAT Sensor System Inspection with Connector Disconnected

Turn the ignition switch OFF.
Disconnect the IAT sensor 2P (Blue) connector (page 7-11).
Check the IAT sensor with the GST or MCS.

Is about 0 V indicated?

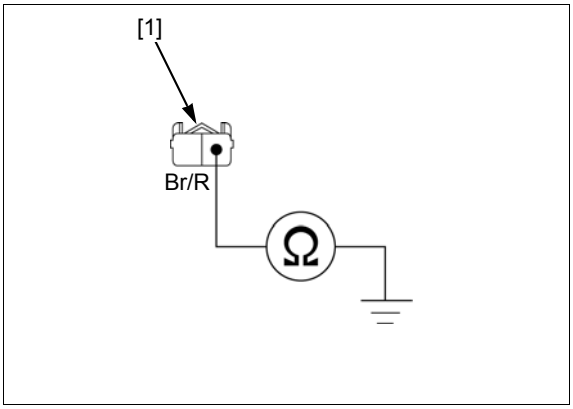
YES – GO TO STEP 3.

NO – Faulty IAT sensor

3. IAT Sensor Output Line Short Circuit Inspection

Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Black) connector (page 4-39).
Check for continuity between the wire harness side 2P (Blue) connector [1] and ground.

Connection: Brown/red – Ground



Is there continuity?

YES – Short circuit in the Brown/red wire

NO – Replace the ECM/PCM with a known good one and recheck (page 4-39).

DTC P0113 (IAT SENSOR HIGH VOLTAGE)

NOTE:

- Before starting the inspection, check for loose or poor contact on the IAT sensor 2P (Blue), ECM/PCM 33P (Black) and 33P (Gray) connectors, and recheck the DTC.

1. IAT Sensor System Inspection

Check the IAT sensor with the GST or MCS.

Is about 5 V indicated?

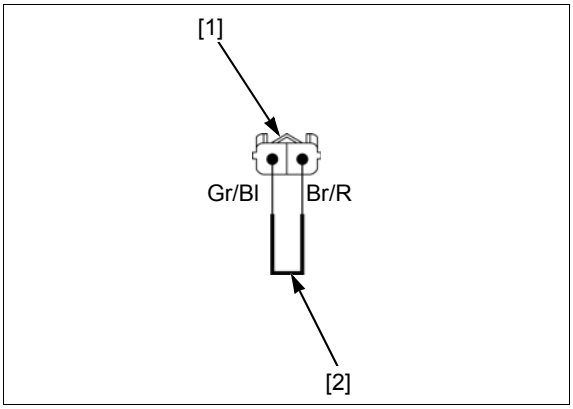
YES – GO TO STEP 2.

NO – Intermittent failure

2. IAT Sensor System Inspection with Jumper Wire

Turn the ignition switch OFF.
Disconnect the IAT sensor 2P (Blue) connector (page 7-11).
Connect the wire harness side 2P (Blue) connector [1] terminals with a jumper wire [2].

Connection: Brown/red – Gray/black



Check the IAT sensor with the GST or MCS.

Is about 0 V indicated?

YES – Faulty IAT sensor

NO – GO TO STEP 3.

3. IAT Sensor Output Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Black) connector (page 4-39).
Check for continuity between the wire harness side 2P (Blue) connector [1] and 33P (Black) connector [2].

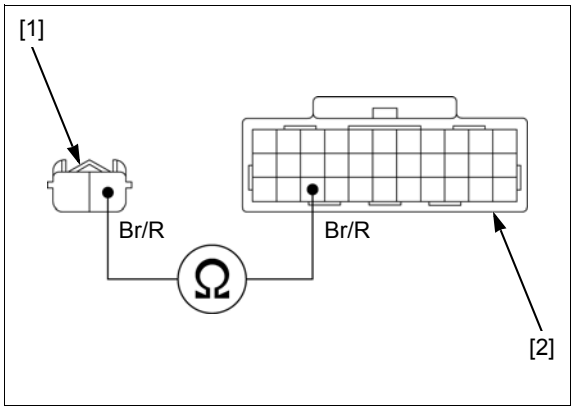
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Brown/red – Brown/red

Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Brown/red wire



4. IAT Sensor Ground Line Open Circuit Inspection

Disconnect the ECM/PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 2P (Blue) connector [1] and 33P (Gray) connector [2].

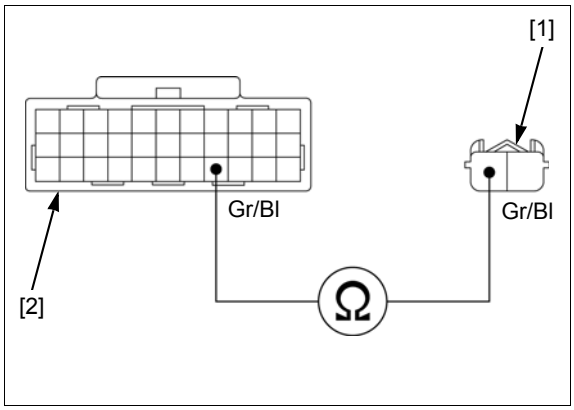
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Gray/black – Gray/black

Is there continuity?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Open circuit in the Gray/black wire



DTC P0500 (VS SENSOR)

NOTE:

- Before starting the inspection, check for loose or poor contact on the VS sensor 3P (Black) and ECM/PCM 33P (Gray) connectors, and recheck the DTC.

1. DTC Recheck

Erase the DTC (page 25-25).
Test-ride the motorcycle above 3,400 min^{-1} (rpm).
Stop the engine.
Check the DTC with the GST or MCS.

Is DTC P0500 indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. VS Sensor Ground Line Open Circuit Inspection

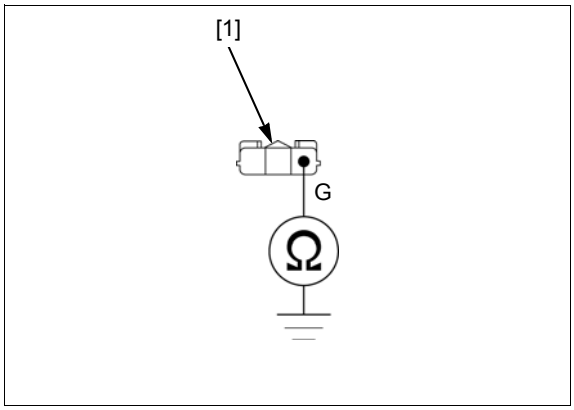
Turn the ignition switch OFF.
Disconnect the VS sensor 3P (Black) connector (page 4-42).
Check for continuity between the wire harness side 3P (Black) connector [1] and ground.

Connection: Green – Ground

Is there continuity?

YES – GO TO STEP 3.

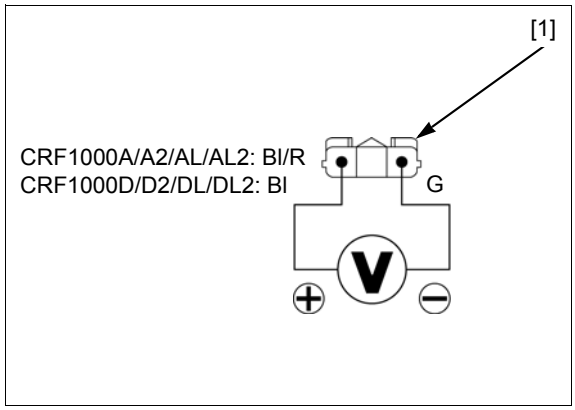
NO – Open circuit in the Green wire



3. VS Sensor Input Line Open Circuit Inspection

Temporarily install the removed electrical parts in the reverse order of removal.
Turn the ignition switch ON.
Measure the voltage between the wire harness side 3P (Black) connector [1] and ground.

Connection:
CRF1000A/A2/AL/AL2:
Black/red (+) – Green (–)
CRF1000D/D2/DL/DL2:
Black (+) – Green (–)



Is there battery voltage?

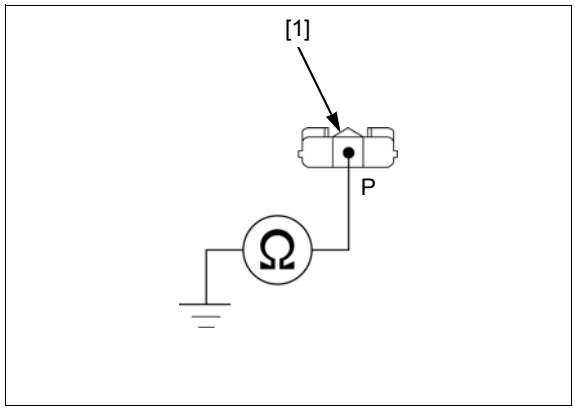
YES – GO TO STEP 4.

NO – • Open circuit in the Black/red wire (CRF1000A/A2/AL/AL2)
• Open circuit in the Black and Black/red wire (CRF1000D/D2/DL/DL2)

4. VS Sensor Signal Line Short Circuit Inspection

Turn the ignition switch OFF.
Check for continuity between the wire harness side 3P (Black) connector [1] and ground.

Connection: Pink – Ground



Is there continuity?

YES – Short circuit in the Pink wire

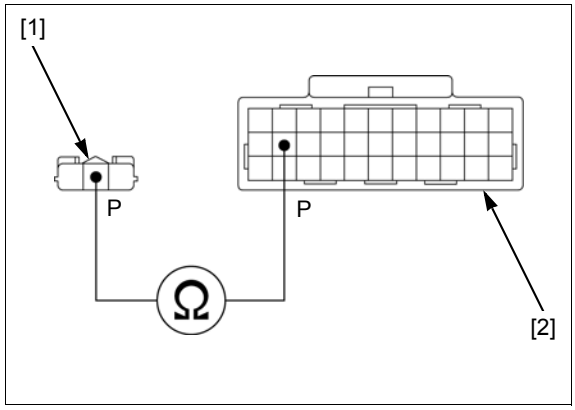
NO – GO TO STEP 5.

5. VS Sensor Signal Line Open Circuit Inspection

Disconnect the ECM/PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 3P (Black) connector [1] and 33P (Gray) connector [2].

TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Pink – Pink



Is there continuity?

YES – GO TO STEP 6.

NO – Open circuit in the Pink wire

6. VS Sensor Inspection

Replace the VS sensor with a known good one (page 4-42).
Connect the 33P (Gray) connector.
Erase the DTC (page 25-25).
Test-ride the motorcycle above 3,400 min^{-1} (rpm).
Stop the engine.
Check the DTC with the GST or MCS.

Is the DTC P0500 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original VS sensor

DTC P0201 (No. 1 FUEL INJECTOR)/ DTC P0202 (No. 2 FUEL INJECTOR)

NOTE:

- Before starting the inspection, check for loose or poor contact on the fuel injector 2P (No.1: Black/ No.2: Blue) and ECM/PCM 33P (Gray) connectors, and recheck the DTC.

1. DTC Recheck

Erase the DTC (page 25-25).
Check the DTC with the GST or MCS.

Is the DTC P0201 or P0202 indicated?

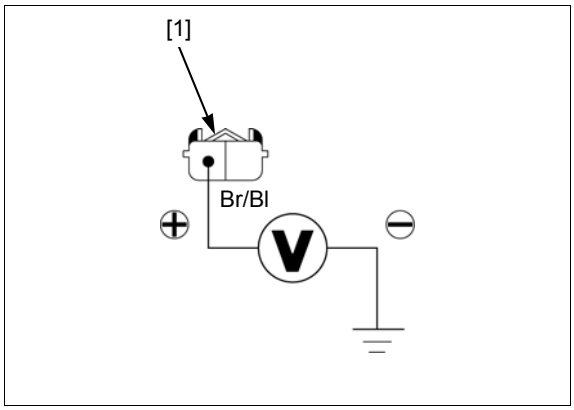
YES – GO TO STEP 2.

NO – Intermittent failure

2. Fuel Injector Input Voltage Inspection

Turn the ignition switch OFF.
Disconnect the fuel injector 2P (No.1: Black/No.2: Blue) connector (page 26-128).
Turn the ignition switch ON.
Measure the voltage between the wire harness side 2P connector [1] and ground.

Connection: Brown/black (+) – Ground (–)



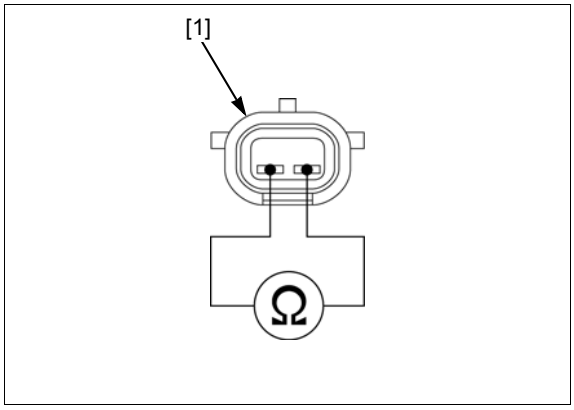
Is there battery voltage?

YES – GO TO STEP 3.

NO – Open circuit in the Brown/black wire

3. Fuel Injector Resistance Inspection

Turn the ignition switch OFF.
Measure the resistance at the injector side 2P connector [1].



Is the resistance within 11 – 13 Ω (20°C/68°F)?

YES – GO TO STEP 4.

NO – Faulty fuel injector

4. Fuel Injector Signal Line Open Circuit Inspection

Disconnect the ECM/PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side No.1 fuel injector 2P connector [1] and 33P (Gray) connector [2].
Check for continuity between the wire harness side No.2 fuel injector 2P connector [3] and 33P (Gray) connector.

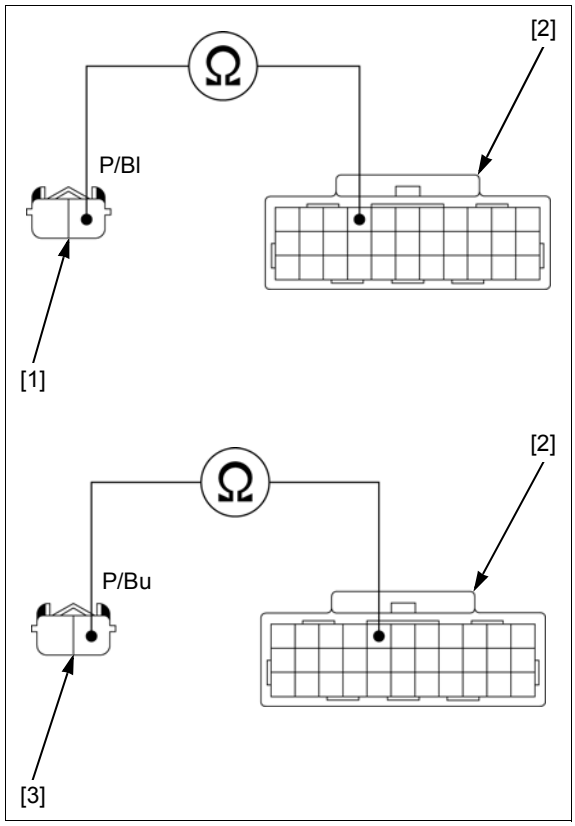
TOOL:
Test probe **07ZAJ-RDJA110**

Connection:
No.1: Pink/black – Pink/black
No.2: Pink/blue – Pink/blue

Is there continuity?

YES – GO TO STEP 5.

NO – • Open circuit in the Pink/black wire
• Open circuit in the Pink/blue wire



5. Fuel Injector Signal Line Short Circuit Inspection

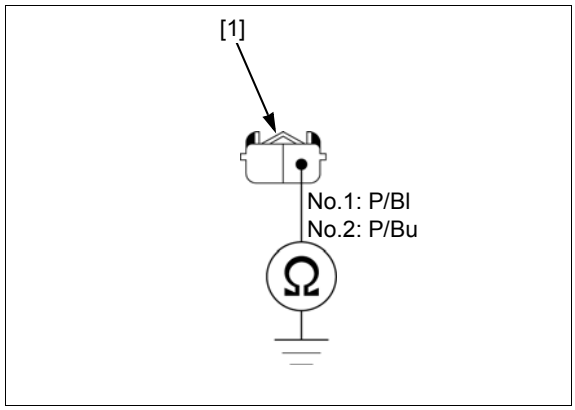
Check for continuity between the wire harness side 2P connector [1] and ground.

Connection:
No.1: Pink/black – Ground
No.2: Pink/blue – Ground

Is there continuity?

YES – • Short circuit in the Pink/black wire
• Short circuit in the Pink/blue wire

NO – Replace the ECM/PCM with a known good one and recheck (page 4-39).



DTC P0131 (O_2 SENSOR LOW VOLTAGE)

1. DTC Recheck

Erase the DTC (page 25-25).
Start the engine and warm it up until the coolant temperature is 80°C (176°F).
Stop the engine.
Check the DTC with the GST or MCS.

Is the DTC P0131 indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. O_2 Sensor Output Line Short Circuit Inspection

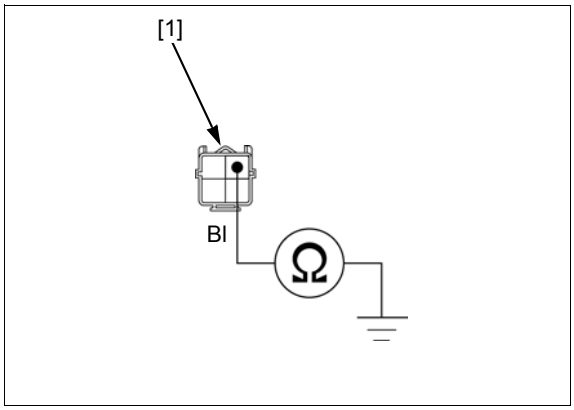
Turn the ignition switch OFF.
Disconnect the O_2 sensor 4P (Black) connector (page 26-58).
Check for continuity between the wire harness side 4P (Black) connector [1] and ground.

Connection: Black – Ground

Is there continuity?

YES – Short circuit in the Black wire

NO – GO TO STEP 3.



3. O_2 Sensor Inspection

Replace the O_2 sensor with a known good one (page 4-42).
Erase the DTC (page 25-25).
Start the engine and warm it up until the coolant temperature is 80°C (176°F).
Stop the engine.
Check the O_2 sensor with the GST or MCS.

Is the DTC P0131 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original O_2 sensor

DTC P0132 (O_2 SENSOR HIGH VOLTAGE)

NOTE:

- Before starting the inspection, check for loose or poor contact on the O_2 sensor 4P (Black), ECM/PCM 33P (Blue) and 33P (Gray) connectors, and recheck the DTC.

1. DTC Recheck

Erase the DTC (page 25-25).
Start the engine and warm it up until the coolant temperature is 80°C (176°F).
Stop the engine.
Check the DTC with the GST or MCS.

Is the DTC P0132 indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. O_2 Sensor Output Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the O_2 sensor 4P (Black) connector (page 26-58).
Disconnect the ECM/PCM 33P (Blue) connector (page 4-39).
Check for continuity between the wire harness side 4P (Black) connector [1] and 33P (Gray) connector [2].

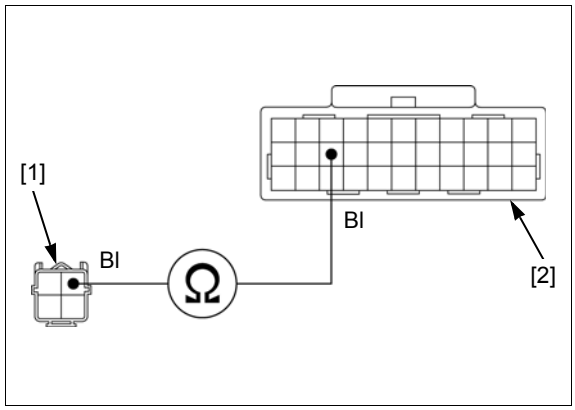
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Black – Black

Is there continuity?

YES – GO TO STEP 3.

NO – Open circuit in the Black wire



3. O_2 Sensor Ground Line Open Circuit Inspection

Disconnect the ECM/PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 4P (Black) connector [1] and 33P (Gray) connector [2].

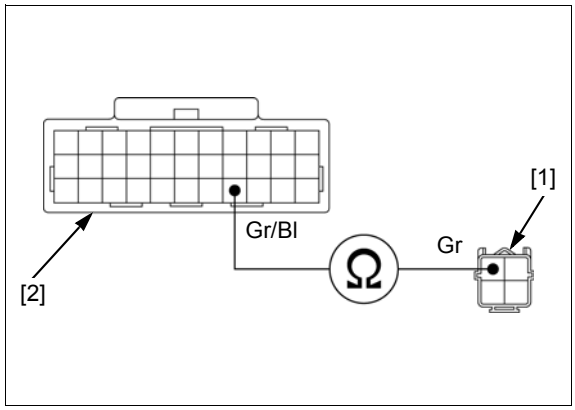
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Gray – Gray/black

Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Gray or Gray/black wire



4. O_2 Sensor Inspection

Replace the O_2 sensor with a known good one (page 4-42).
Connect the ECM/PCM 33P (Blue and Gray) connectors.
Erase the DTC (page 25-25).
Start the engine and warm it up until the coolant temperature is 80°C (176°F).
Stop the engine.
Check the O_2 sensor with the GST or MCS.

Is the DTC P0132 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original O_2 sensor

DTC P0135 (O_2 SENSOR HEATER)

NOTE:

- Before starting the inspection, check for loose or poor contact on the O_2 sensor 4P (Black) and ECM/PCM 33P (Black) connectors, and recheck the DTC.

1. DTC Recheck

Erase the DTC (page 25-25).
Start the engine and check the DTC with the GST or MCS.

Is DTC P0135 indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. O_2 Sensor Heater Resistance Inspection

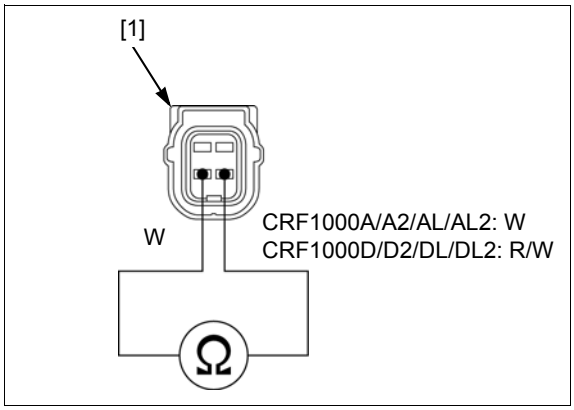
Turn the ignition switch OFF.
Disconnect the O_2 sensor 4P (Black) connector (page 26-58).
Measure the resistance at the sensor side 4P (Black) connector [1].

Connection:
CRF1000A/A2/AL/AL2:
White – White
CRF1000D/D2/DL/DL2:
Red/white – White

Is the resistance within 6.7 – 10.5 Ω (20°C/68°F)?

YES – GO TO STEP 3.

NO – Faulty O_2 sensor



3. O_2 Sensor Heater Input Voltage Inspection

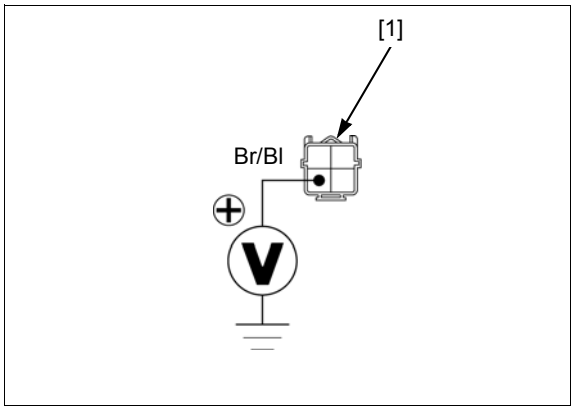
Turn the ignition switch ON.
Measure the voltage between the wire harness side 4P (Black) connector [1] and ground.

Connection: Brown/black (+) – Ground (–)

Is there battery voltage?

YES – GO TO STEP 4.

NO – Open circuit in the Brown/black wire



4. O_2 Sensor Heater Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Black) connector (page 4-39).
Check for continuity between the wire harness side 4P (Black) connector [1] and 33P (Black) connector [2].

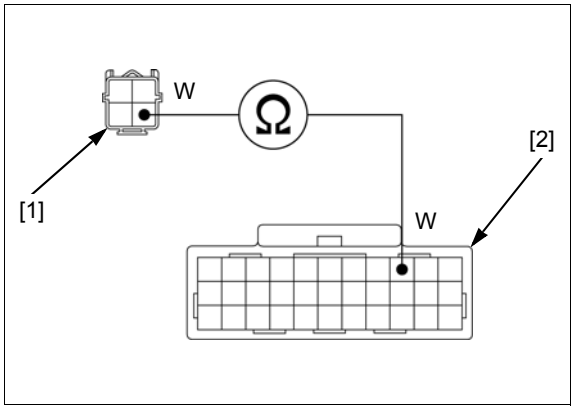
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: White – White

Is there continuity?

YES – GO TO STEP 5.

NO – Open circuit in the White wire



5. O_2 Sensor Heater Line Short Circuit Inspection

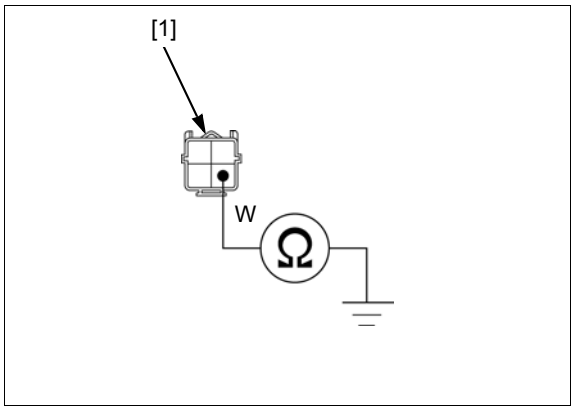
Check for continuity between the wire harness side 4P (Black) connector [1] and ground.

Connection: White – Ground

Is there continuity?

YES – Short circuit in the White wire

NO – Replace the ECM/PCM with a known good one and recheck (page 4-39).



DTC P062F (ECM/PCM EEPROM)

1. Recheck DTC

Erase the DTC (page 25-25).
Check the DTC with the GST or MCS.

Is the DTC P062F indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Intermittent failure

DTC P1702 (GEAR POSITION SENSOR) (CRF1000A/A2/AL/AL2)

NOTE:

- Before starting the inspection, check for loose or poor contact on the gear position sensor 3P (Black), PCM 33P (Blue) and 33P (Gray) connectors, and recheck the DTC.

1. Gear Position Sensor System Inspection

Check the gear position sensor with the GST or MCS.

Is about 0 V or 5 V indicated?

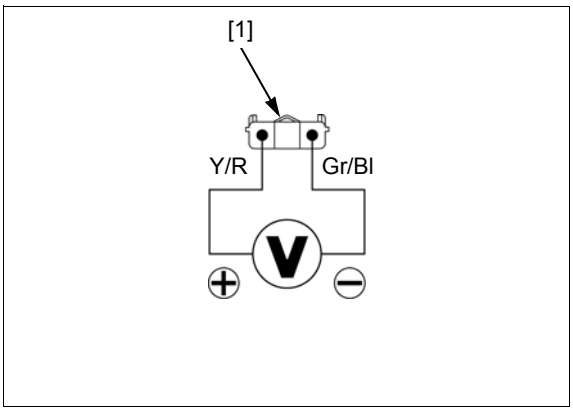
YES – GO TO STEP 2.

NO – Intermittent failure

2. Gear Position Sensor Input Voltage Inspection

Turn the ignition switch OFF.
Disconnect the gear position sensor 3P (Black) connector (page 26-205).
Turn the ignition switch ON.
Measure the voltage at the wire harness side 3P (Black) connector [1].

Connection: Yellow/red (+) – Gray/black (–)



Is the voltage within 4.75 – 5.25 V?

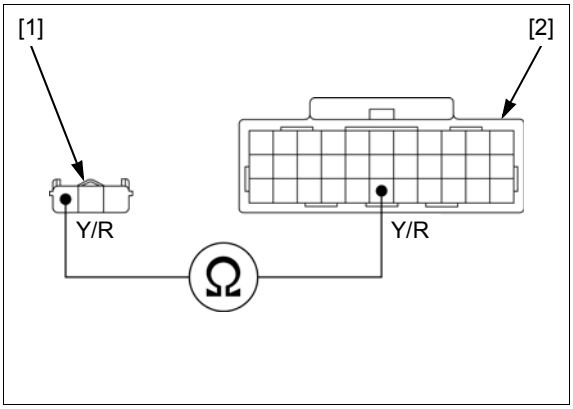
YES – GO TO STEP 5.

NO – GO TO STEP 3.

3. Gear Position Sensor Input Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the ECM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 3P (Black) connector [1] and 33P (Gray) connector [2].

TOOL:
Test probe **07ZAJ-RDJA110**



Connection: Yellow/red – Yellow/red

Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Yellow/red wire

4. Gear Position Sensor Ground Line Open Circuit Inspection

Check for continuity between the wire harness side 33P (Gray) connector [1] and 3P (Black) connector [2].

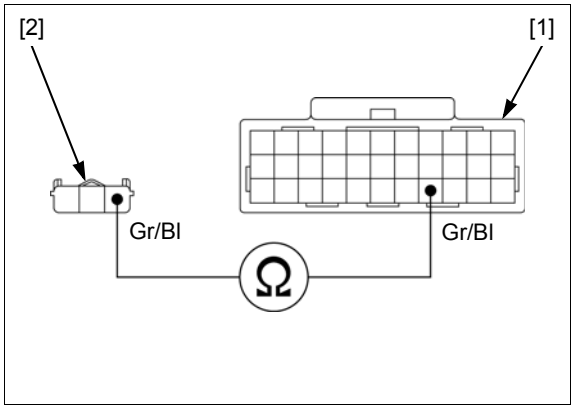
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Gray/black – Gray/black

Is there continuity?

YES – Replace the ECM with a known good one and recheck (page 4-39).

NO – Open circuit in the Gray/black wire



5. Gear Position Sensor Signal Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the ECM 33P (Blue) connector (page 4-39).
Check for continuity between the wire harness side 3P (Black) connector [1] and 33P (Blue) connector [2].

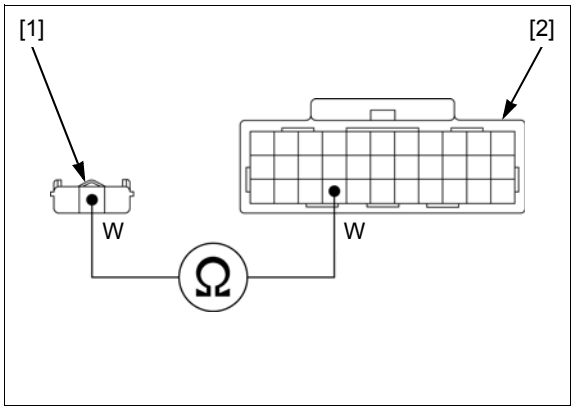
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: White – White

Is there continuity?

YES – GO TO STEP 6.

NO – Open circuit in the White wire



6. Gear Position Sensor Output Line Short Circuit Inspection

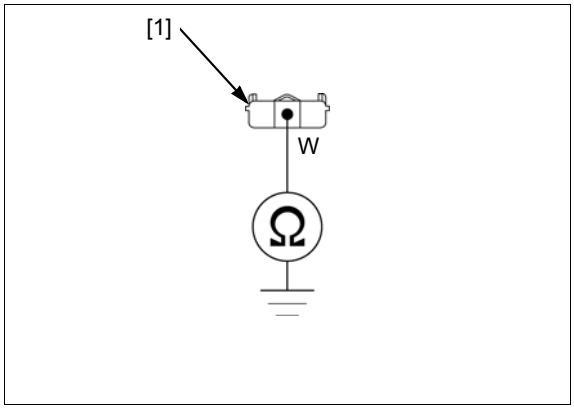
Check for continuity between the wire harness side 3P (Black) connector [1] and ground.

Connection: White – Ground

Is there continuity?

YES – Short circuit in the White wire

NO – GO TO STEP 7.



7. Gear Position Sensor Inspection

Replace the gear position sensor with a known good one (page 26-205).
Connect the 3P (Black) connector, 33P (Blue) connector and 33P (Gray) connector.
Check the gear position sensor with the GST or MCS.

Is about 0 V or 5 V indicated?

YES – Replace the ECM with a known good one and recheck (page 4-39).

NO – Faulty original gear position sensor

DTC P1000 (BANK ANGLE SENSOR LOW VOLTAGE)

NOTE:

- Before starting the inspection, check for loose or poor contact on the bank angle sensor 2P (Black) and ECM/PCM 33P (Gray) connectors, and recheck the DTC.

1. Bank Angle Sensor System Inspection

Erase the DTC (page 25-25).
Check the bank angle sensor with the GST or MCS.

Is about 0 V indicated?

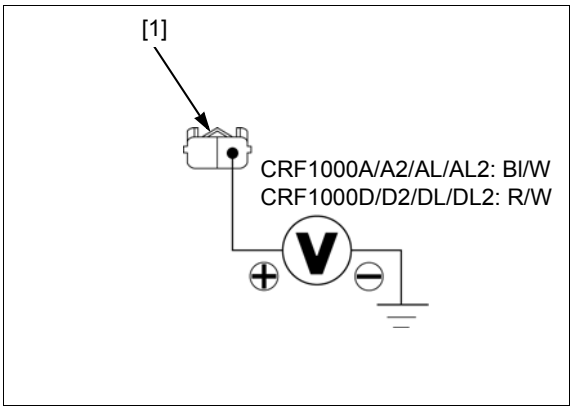
YES – GO TO STEP 2.

NO – Intermittent failure

2. Bank Angle Sensor Input Voltage Inspection

Turn the ignition switch OFF.
Disconnect the bank angle sensor 2P (Black) connector (page 22-4).
Turn the ignition switch ON.
Measure the voltage between the wire harness side 2P (Black) connector [1] and ground.

Connection:
CRF1000A/A2/AL/AL2:
Black/white (+) – Ground (–)
CRF1000D/D2/DL/DL2:
Red/white (+) – Ground (–)



Is there battery voltage?

YES – GO TO STEP 3.

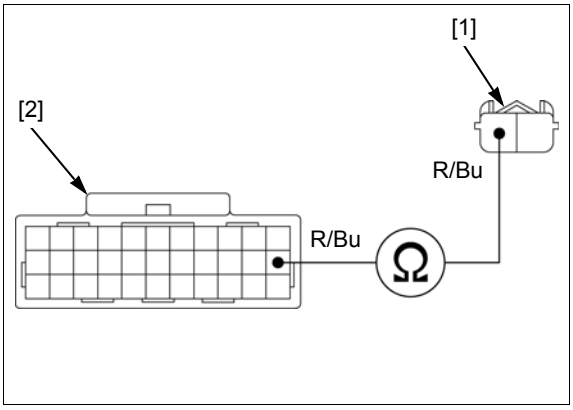
NO – Open circuit in the Black/white or Red/white wire

3. Bank Angle Sensor Signal Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 2P (Black) connector [1] and 33P (Gray) connector [2].

TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Red/blue – Red/blue



Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Red/blue wire

4. Bank Angle Sensor Signal Line Short Circuit Inspection

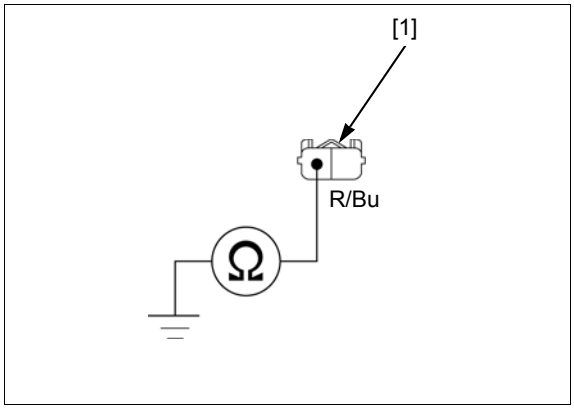
Check for continuity between the wire harness side 2P (Black) connector [1] and ground.

Connection: Red/blue – Ground

Is there continuity?

YES – Short circuit in the Red/blue wire

NO – GO TO STEP 5.



5. Bank Angle Sensor Inspection

Replace the bank angle sensor with a known good one (page 4-42).
Connect the ECM/PCM 33P (Gray) connector.
Erase the DTC (page 25-25).
Check the DTC with the GST or MCS.

Is DTC P1000 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original bank angle sensor

DTC P1001 (BANK ANGLE SENSOR HIGH VOLTAGE)

1. Bank Angle Sensor System Inspection

Erase the DTC (page 25-25).
Check the bank angle sensor with the GST or MCS.

Is about 5 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. Bank Angle Sensor Inspection

Replace the bank angle sensor with a known good one (page 4-42).
Erase the DTC (page 25-25).
Check the DTC with the GST or MCS.

Is DTC P1001 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original bank angle sensor

DTC P2158 (REAR WHEEL SPEED SENSOR SIGNAL)

1. DTC Recheck

Erase the DTC (page 25-25).
Test-ride the motorcycle above 20 km/h (12 mph) for more than 20 seconds.
Stop the engine.
Check the DTC with the GST or MCS.

Is DTC P2158 indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. ABS DTC Check

Check the ABS DTC (page 20-6).

Does the ABS modulator have any DTC?

YES – Follow the ABS DTC index (page 26-184).

NO – GO TO STEP 3.

3. Rear Wheel Speed Sensor Signal Output Line Open Circuit Inspection

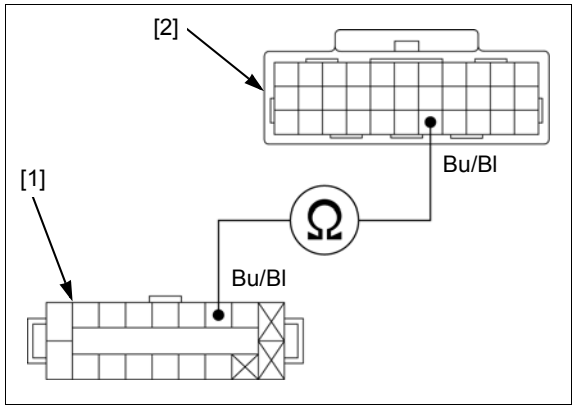
Turn the ignition switch OFF.

Disconnect the following:
– ABS modulator 18P (Black) connector (page 20-6)
– ECM/PCM 33P (Black) connector (page 4-39)

Check for continuity between the wire harness side 18P (Black) connector [1] and 33P (Black) connector [2].

TOOL:
Test probe 07ZAJ-RDJA110

Connection: Blue/black – Blue/black



Is there continuity?

YES – GO TO STEP 4.

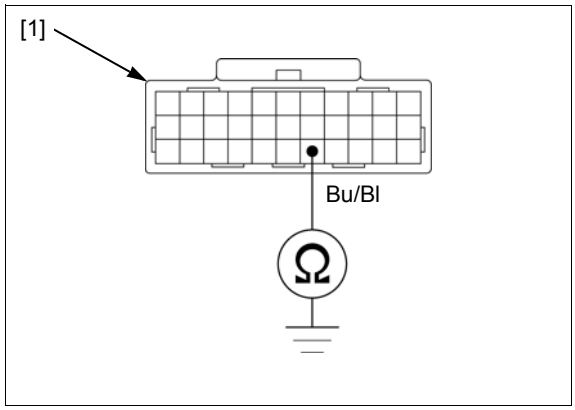
NO – Open circuit in the Blue/black wire

4. Rear Wheel Speed Sensor Signal Output Line Short Circuit Inspection

Check for continuity between the wire harness side 33P (Black) connector [1] and ground.

TOOL:
Test probe 07ZAJ-RDJA110

Connection: Blue/black – Ground



Is there continuity?

YES – Short circuit in the Blue/black wire

NO – GO TO STEP 5.

5. ECM/PCM Inspection

Replace the ECM/PCM with a known good one (page 4-39).
Connect the ABS modulator 18P (Black) connector.
Erase the DTC (page 25-25).
Test-ride the motorcycle above 20 km/h (12 mph) for more than 20 seconds.
Stop the engine.
Check the DTC with the GST or MCS.

Is DTC P2158 indicated?

YES – Replace the ABS modulator with a known good one and recheck (page 26-195).

NO – Faulty original ECM/PCM

DTC P1500 (FRONT WHEEL SPEED SENSOR SIGNAL)

1. DTC Recheck

Erase the DTC (page 25-25).
Test-ride the motorcycle above 20 km/h (12 mph) for more than 30 seconds.
Stop the engine.
Check the DTC with the GST or MCS.

Is DTC P1500 indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. ABS DTC Check

Check the ABS DTC (page 20-6).

Does the ABS modulator have any DTC?

YES – Follow the ABS DTC index (page 26-184).

NO – GO TO STEP 3.

3. Front Wheel Speed Sensor Signal Output Line Open Circuit Inspection

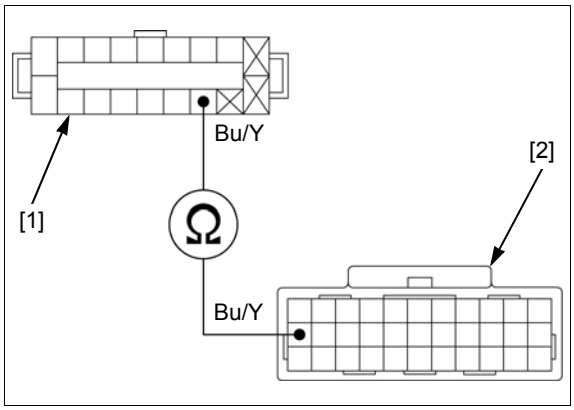
Turn the ignition switch OFF.

Disconnect the following:
– ABS modulator 18P (Black) connector (page 20-6)
– ECM/PCM 33P (Gray) connector (page 4-39)

Check for continuity between the wire harness side 18P (Black) connector [1] and 33P (Gray) connector [2].

TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Blue/yellow – Blue/yellow



Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Blue/yellow wire

4. Front Wheel Speed Sensor Signal Output Line Short Circuit Inspection

Check for continuity between the wire harness side 33P (Gray) connector [1] and ground.

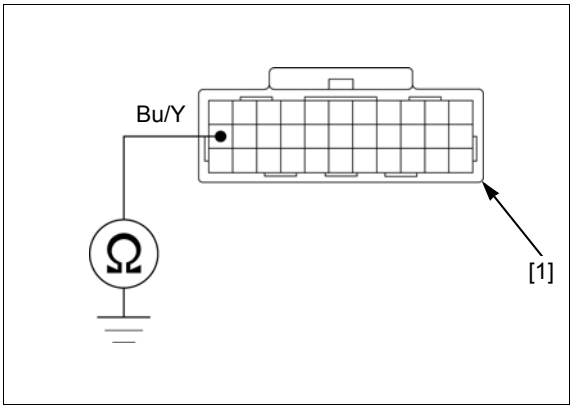
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Blue/yellow – Ground

Is there continuity?

YES – Short circuit in the Blue/yellow wire

NO – GO TO STEP 5.



5. ECM/PCM Inspection

Replace the ECM/PCM with a known good one (page 4-39).
Connect the ABS modulator 18P (Black) connector.
Erase the DTC (page 25-25).
Test-ride the motorcycle above 20 km/h (12 mph) for more than 30 seconds.
Stop the engine.
Check the DTC with the GST or MCS.

Is DTC P1500 indicated?

YES – Replace the ABS modulator with a known good one and recheck (page 26-195).

NO – Faulty original ECM/PCM

DTC P0122 (TP SENSOR 1 LOW VOLTAGE)

1. TP Sensor 1 System Inspection

Erase the DTC (page 25-25).
Check the TP sensor with the GST or MCS.

Is about 0.096 V and below indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. TP Sensor 1 Input Voltage Inspection

Turn the ignition switch OFF.
Disconnect the TBW unit 6P (Black) connector (page 26-128).
Turn the ignition switch ON with the engine stop switch "".
Measure the voltage between the TBW unit connector [1] terminals at the harness side.

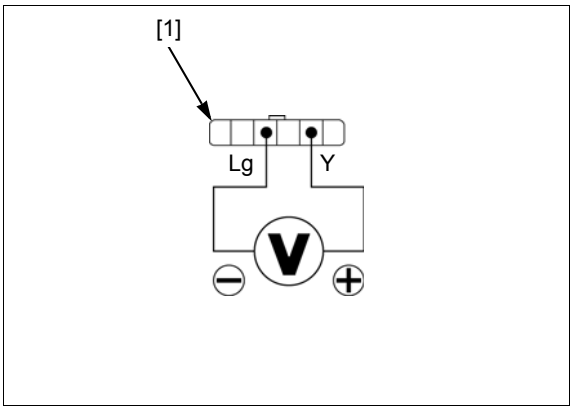
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Yellow (+) – Light green (–)

Is about 5 V indicated?

YES – GO TO STEP 3.

NO – • Open or short circuit in the Yellow wire
• If the wire is OK, replace the ECM with a known good one, and recheck.



3. TP Sensor 1 Output Line Short Circuit Inspection

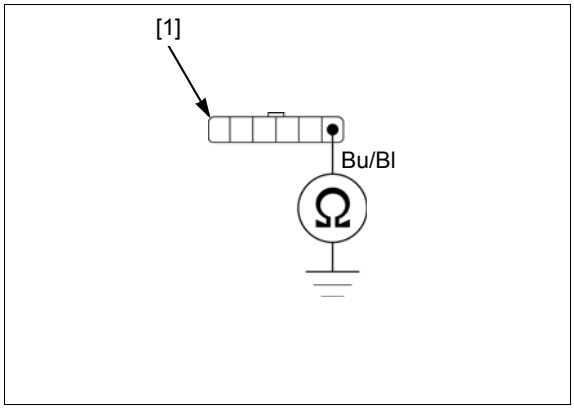
Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Black) connector (page 4-39).
Check for continuity between the TBW unit connector [1] terminal at the harness side and ground.

Connection: Blue/Black – Ground

Is there continuity?

YES – Short circuit in the Blue/Black wire

NO – GO TO STEP 4.



4. TP Sensor 1 Inspection

- If the TP sensor 1 is faulty, replace the throttle body/TBW unit assembly.

Replace the throttle body (page 26-128).
Connect the ECM and TBW unit connectors.
Erase the DTC (page 25-25).
Turn the ignition switch ON with the engine stop switch "".
Check the TP sensor 1 with the MCS.

Is DTC P0122 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original TBW unit (TP Sensor)

DTC P0123 (TP SENSOR 1 HIGH VOLTAGE)

1. TP Sensor 1 System Inspection

Erase the DTC (page 25-25).
Check the TP sensor with the GST or MCS.

Is about 4.762 V and above indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. TP Sensor 1 Input Voltage Inspection

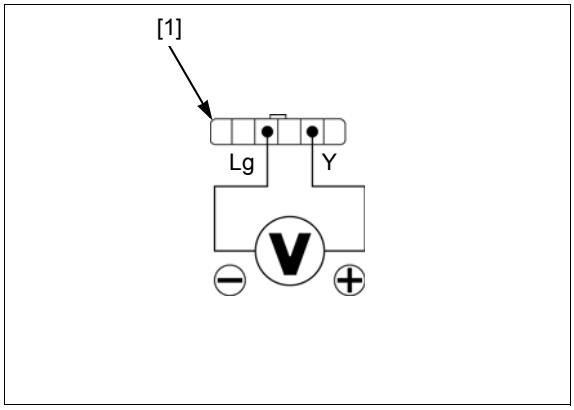
Turn the ignition switch OFF.
Disconnect the TBW unit 6P (Black) connector (page 26-128).
Turn the ignition switch ON with the engine stop switch "".
Measure the voltage between the TBW unit connector [1] terminals at the harness side.

Connection: Yellow (+) – Light green (–)

Is about 5 V indicated?

YES – GO TO STEP 3.

NO – • Open circuit in the Light green wire
• If the wire is OK, replace the ECM/PCM with a known good one and recheck (page 4-39).



3. TP Sensor 1 Output Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Black) connector (page 4-39).
Check for continuity between the TBW unit connector [1] and ECM/PCM connector [2] terminals at the wire side.

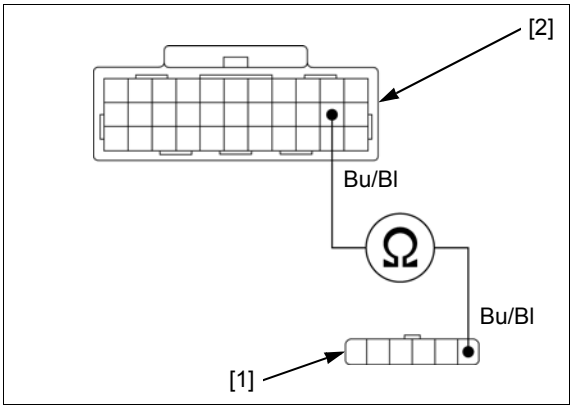
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Blue/Black – Blue/Black

Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Blue/Black wire



4. TP Sensor 1 Inspection

- If the TP sensor 1 is faulty, replace the throttle body/TBW unit assembly.

Replace the throttle body (page 26-128).
Connect the ECM/PCM and TBW unit connectors.
Erase the DTC (page 25-25).
Check the TP sensor 1 with the GST or MCS.

Is DTC P0123 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original TBW unit (TP Sensor)

DTC P0222 (TP SENSOR 2 LOW VOLTAGE)

1. TP Sensor 2 System Inspection

Erase the DTC (page 25-25).
Check the TP sensor with the GST or MCS.

Is about 0.063 V and below indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. TP Sensor 2 Input Voltage Inspection

Turn the ignition switch OFF.
Disconnect the TBW unit 6P (Black) connector [1] (page 26-128).
Turn the ignition switch ON with the engine stop switch "".
Measure the voltage between the TBW unit connector [1] terminals at the harness side.

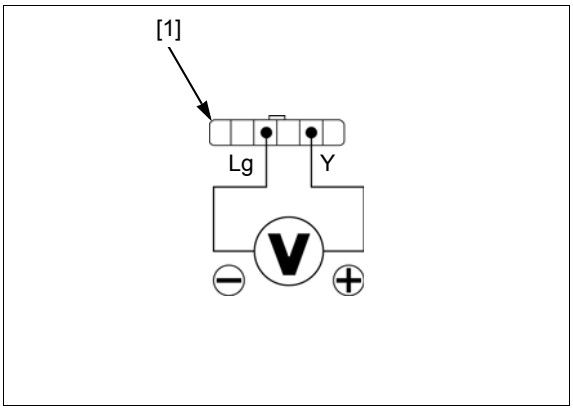
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Yellow (+) – Light green (–)

Is about 5 V indicated?

YES – GO TO STEP 3.

NO –
- Open or short circuit in the Yellow wire
- If the wire is OK, replace the ECM/PCM with a known good one and recheck (page 4-39).



3. TP Sensor 2 Output Line Short Circuit Inspection

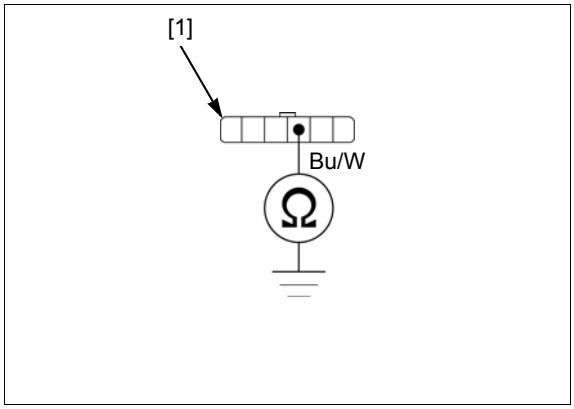
Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Black) connector (page 4-39).
Check for continuity between the TBW unit connector terminal at the harness side and ground.

Connection: Blue/white – Ground

Is there continuity?

YES – Short circuit in the Blue/white wire

NO – GO TO STEP 4.



4. TP Sensor 2 Inspection

- If the TP sensor 2 is faulty, replace the throttle body/TBW unit assembly.

Replace the throttle body (page 26-128).
Connect the ECM/PCM and TBW unit connectors.
Erase the DTC (page 25-25).
Check the TP sensor 2 with the GST or MCS.

Is DTC P0222 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original TBW unit (TP Sensor)

DTC P0223 (TP SENSOR 2 HIGH VOLTAGE)

1. TP Sensor 2 System Inspection

Erase the DTC (page 25-25).
Check the TP sensor with the GST or MCS.

Is about 4.761 V and above indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. TP Sensor 2 Input Voltage Inspection

Turn the ignition switch OFF.
Disconnect the TBW unit 6P (Black) connector [1] (page 26-128).
Turn the ignition switch ON with the engine stop switch "○".
Measure the voltage between the TBW unit connector [1] terminals at the harness side.

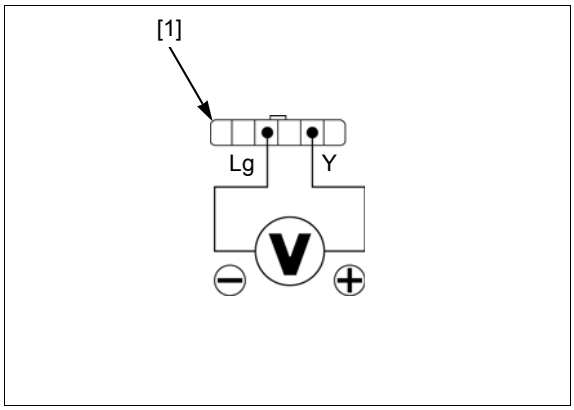
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Yellow (+) – Light green (–)

Is about 5 V indicated?

YES – GO TO STEP 3.

NO – • Open circuit in the Light green wire
• If the wire is OK, replace the ECM/PCM with a known good one and recheck (page 4-39).



3. TP Sensor 2 Output Line Open Circuit Inspection

Turn the ignition switch OFF.
Check for continuity between the TBW sensor connector [1] and ECM/PCM connector [2] terminals at the harness side.

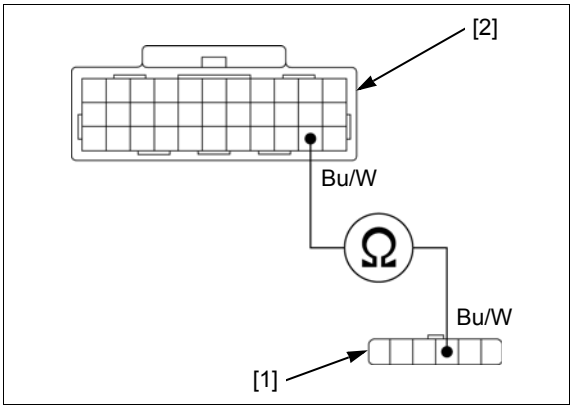
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Blue/white – Blue/white

Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Blue/white wire



4. TP Sensor 2 Inspection

- If the TP sensor 2 is faulty, replace the throttle body/TBW unit assembly.

Replace the throttle body (page 26-128).
Connect the ECM/PCM and TBW unit connectors.
Erase the DTC (page 25-25).
Turn the ignition switch ON with the engine stop switch "".
Check the TP sensor 2 with the GST or MCS.

Is DTC P0223 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original TBW unit (TP Sensor)

DTC P2135 (TP SENSOR 1 and 2 VOLTAGE CORRELATION FAILURE) DTC P2135 (TP SENSOR 1 and 2 SHORT CIRCUIT)

1. TP Sensor 1 and 2 System Inspection

Erase the DTC (page 25-25).
Check the TP sensor with the GST or MCS.

Is the DTC P2135 indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. Throttle Valve Operation Inspection

Turn the ignition switch OFF.
Remove the air cleaner housing (page 26-128).
Turn the ignition switch ON with the engine stop switch "".
Visually check the throttle valve operation.

Is the valve operation normal?

YES – Clean the throttle bores and valves carefully. (Do not apply commercially available carburetor cleaners to the inside of the throttle bore, which is coated with molybdenum.)

NO – GO TO STEP 3.

3. TP Sensor Line Short Circuit Inspection

Disconnect the ECM/PCM 33P (Black) connector [1] (page 4-39).
Disconnect the TBW unit 6P (Black) connector (page 26-128).
Check for continuity between the ECM/PCM connector terminals at the harness side.

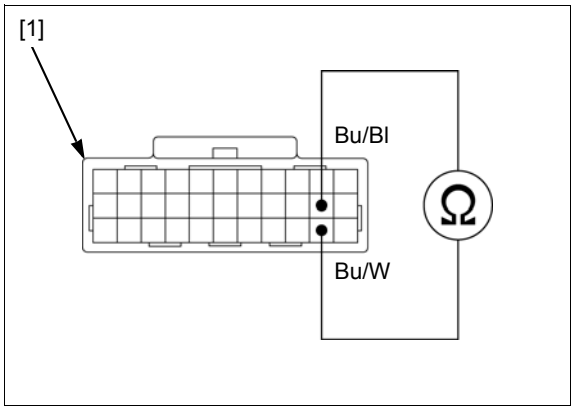
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Blue/black – Blue/white

Is there continuity?

YES – GO TO STEP 4.

NO – Short circuit of the Blue/black to Blue/white wire



4. TP Sensor Inspection

- If the TP sensor 1 and 2 is faulty, replace the throttle body/TBW unit assembly.

Replace the throttle body (page 26-128).
Connect the ECM/PCM and TBW unit connectors.
Erase the DTC (page 25-25).
Turn the ignition switch ON with the engine stop switch "○".
Check the TP sensor 1 and 2 with the GST or MCS.

Is DTC P2135 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original TBW unit (TP Sensor)

DTC P2122 (APS 1 LOW VOLTAGE)

1. APS 1 System Inspection

Erase the DTC (page 25-25).
Check the APS 1 sensor with the GST or MCS.

Is about 0.137 V and below indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. APS 1 Input Voltage Inspection

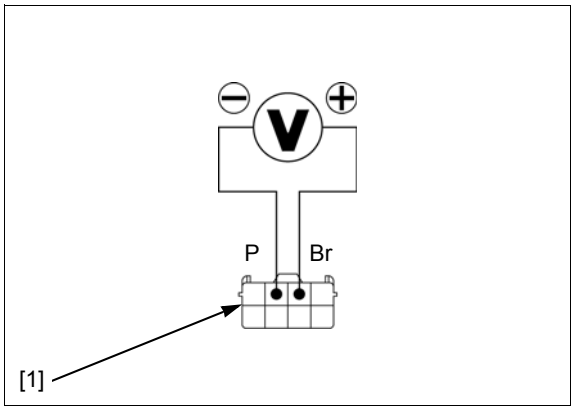
Turn the ignition switch OFF.
Disconnect the APS 8P (Black) connector (page 26-116).
Turn the ignition switch ON with the engine stop switch "○".
Measure the voltage between the APS connector [1] terminals at the harness side.

Connection: Brown (+) – Pink (–)

Is about 5 V indicated?

YES – GO TO STEP 3.

NO –
- Open or short circuit in the Brown wire
- If the wire is OK, replace the ECM/PCM with a known good one and recheck (page 4-39).



3. APS 1 Output Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the APS 8P (Black) connector (page 26-116).
Disconnect the ECM/PCM 33P (Black) connector (page 4-39).
Check for continuity between the APS connector [1] and ECM/PCM connector [2] terminals at the harness side.

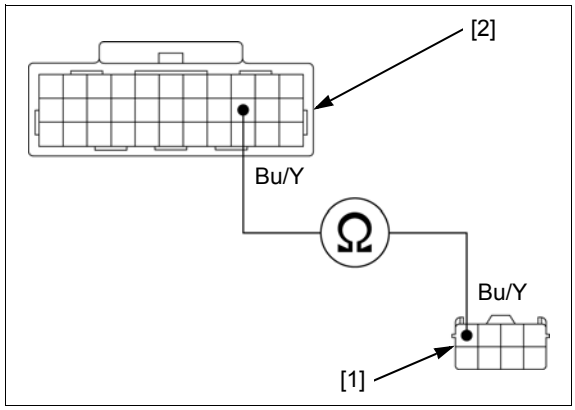
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Blue/yellow – Blue/yellow

Is there continuity?

YES – Open circuit in the Blue/yellow wire

NO – GO TO STEP 4.



4. APS 1 Output Line Short Circuit Inspection

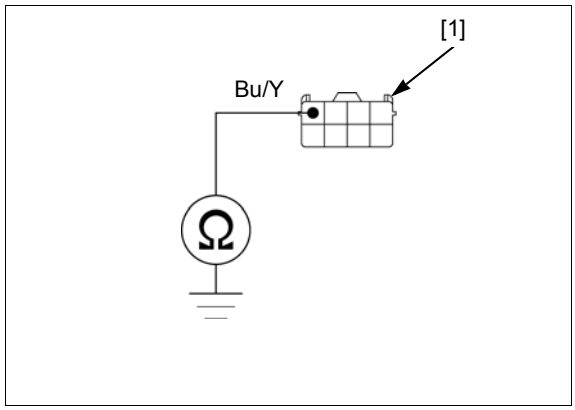
Check for continuity between the APS connector terminal at the harness side and ground.

Connection: Blue/yellow – Ground

Is there continuity?

YES – Short circuit in the Blue/yellow wire

NO – GO TO STEP 5.



5. APS 1 Inspection

NOTE:
- If the APS 1 is faulty, replace the APS.

Replace the APS (page 26-116).
Connect the ECM/PCM and APS connectors.
Erase the DTC (page 25-25).
Check the APS 1 with the GST or MCS.

Is DTC P2122 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original APS

DTC P2123 (APS 1 HIGH VOLTAGE)

1. APS 1 System Inspection

Erase the DTC (page 25-25).
Check the APS 1 with the GST or MCS.

Is about 4.902 V and above indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. APS 1 Input Voltage Inspection

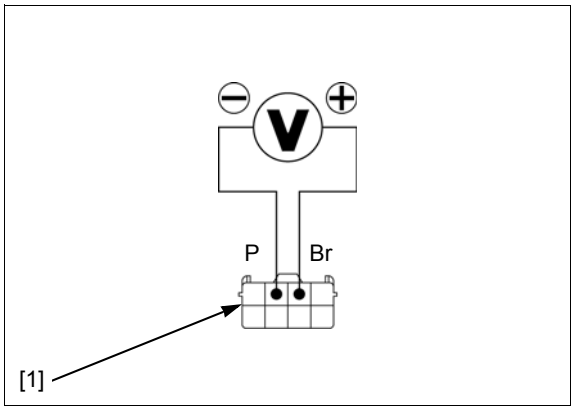
Turn the ignition switch OFF.
Disconnect the APS 8P (Black) connector (page 26-116).
Turn the ignition switch ON with the engine stop switch "".
Measure the voltage between the APS connector [1] terminals at the harness side.

Connection: Brown (+) – Pink (–)

Is about 5 V indicated?

YES – GO TO STEP 3.

NO – • Open circuit in the Brown wire
• If the wire is OK, replace the ECM/PCM with a known good one and recheck (page 4-39).



3. APS 1 Inspection

NOTE:
• If the APS 1 is faulty, replace the APS.

Replace the APS (page 26-116).
Connect the APS connector.
Erase the DTC (page 25-25).
Check the APS 1 with the MCS.

Is DTC P2123 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original APS

DTC P2127 (APS 2 LOW VOLTAGE)

1. APS 2 System Inspection

Erase the DTC (page 25-25).
Check the APS 2 with the GST or MCS.

Is about 0 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. APS 2 Output Line Short Circuit Inspection

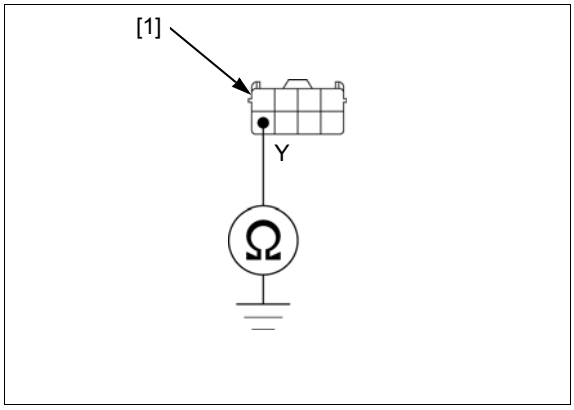
Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Black) connector (page 4-39).
Disconnect the APS 8P (Black) connector (page 26-116).
Check for continuity between the APS [1] connector terminal at the harness side and ground.

Connection: Yellow – Ground

Is there continuity?

YES – Short circuit in the Yellow wire

NO – GO TO STEP 3.



3. APS 2 Output Line Open Circuit Inspection

Check for continuity between the APS connector [1] and ECM/PCM connector [2] at the harness side.

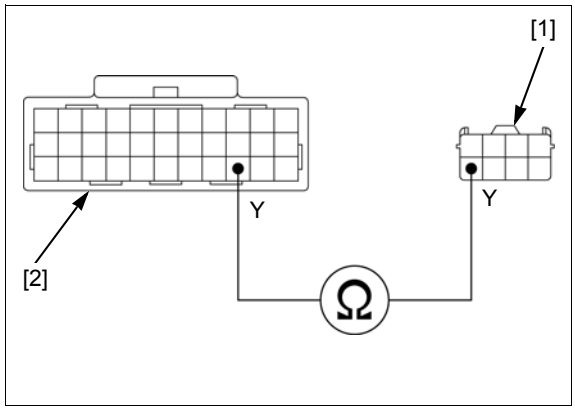
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Yellow – Yellow

Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Yellow wire



4. APS 2 Input Voltage Inspection

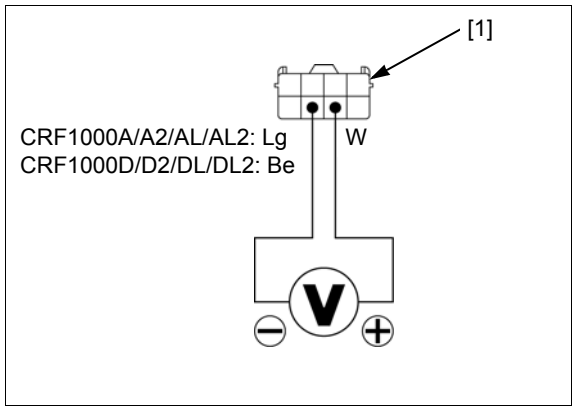
Connect the ECM/PCM connector.
Turn the ignition switch ON with the engine stop switch "".
Measure the voltage between the APS connector [1] terminals at the harness side.

Connection:
CRF1000A/A2/AL/AL2:
White (+) – Light green (–)
CRF1000D/D2/DL/DL2:
White (+) – Beige (–)

Is about 5 V indicated?

YES – GO TO STEP 5.

NO –
- Open or short circuit in the White wire
- Open circuit in the Light green wire (CRF1000A/A2/AL/AL2)
- Open circuit in the Beige wire (CRF1000D/D2/DL/DL2)
- If the wires are good condition, replace the ECM/PCM with a known good one and recheck (page 4-39).



5. APS 2 Inspection

NOTE:
- If the APS 2 is faulty, replace the APS.

Replace the APS (page 26-116).
Connect the APS connector.
Erase the DTC (page 25-25).
Check the APS 2 with the MCS.

Is DTC P2127 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original APS

DTC P2128 (APS 2 HIGH VOLTAGE)

1. APS 2 System Inspection

Erase the DTC (page 25-25).
Check the TP sensor with the GST or MCS.

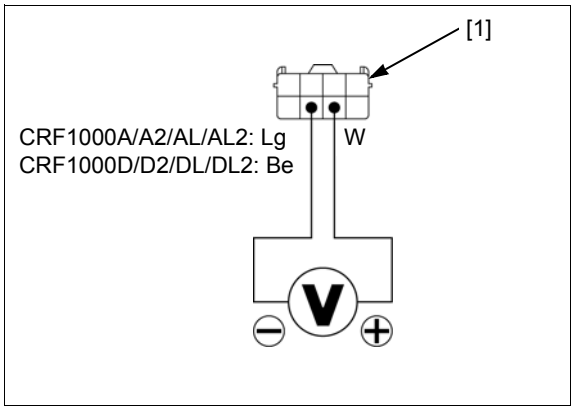
Is about 4.902 V and above indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. APS 2 Input Voltage Inspection

Turn the ignition switch OFF.
Disconnect the APS 8P (Black) connector (page 26-116).
Turn the ignition switch ON with the engine stop switch "".
Measure the voltage between the APS connector [1] terminals at the harness side.



Connection:
CRF1000A/A2/AL/AL2:
White (+) – Light green (–)
CRF1000D/D2/DL/DL2:
White (+) – Beige (–)

Is about 5 V indicated?

YES – GO TO STEP 3.

NO – • Open circuit in the Light green wire (CRF1000A/A2/AL/AL2)
• Open circuit in the Beige wire (CRF1000D/D2/DL/DL2)
• If the wire is OK, replace the ECM/PCM with a known good one and recheck (page 4-39).

3. APS 2 Inspection

NOTE:
• If the APS 2 is faulty, replace the APS.

Replace the APS (page 26-116).
Connect the APS connector.
Erase the DTC (page 25-25).
Check the APS 2 with the GST or MCS.

Is DTC P2128 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original APS

DTC P2138 (APS 1 and 2 VOLTAGE CORRELATION FAILURE)

1. APS System Inspection

Erase the DTC (page 25-25).
Open the throttle and check the APS 1 and 2 with the GST or MCS.

Is the DTC P2138 indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. APS Line Short Circuit Inspection

Disconnect the ECM/PCM 33P (Black) connector [1] (page 4-39).
Check for continuity between the ECM/PCM connectors at the harness side.

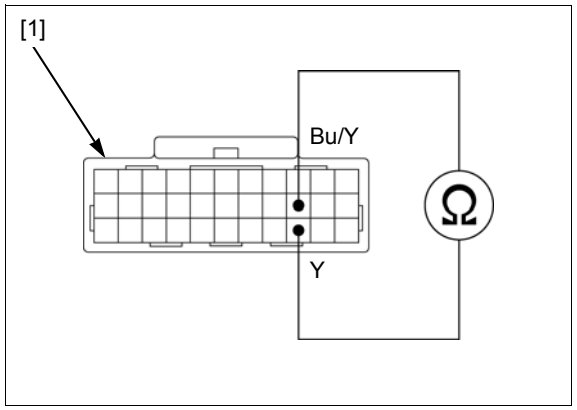
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Blue/yellow – Yellow

Is there continuity?

YES – GO TO STEP 3.

NO – Short circuit of the Blue/yellow wire to Yellow wire



3. APS Inspection

NOTE:
- If the APS is faulty, replace the APS.

Replace the APS (page 26-116).
Connect the ECM/PCM 33P connectors.
Erase the DTC (page 25-25).
Check the APS with the GST or MCS.

Is DTC P2138 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original APS

DTC P1684 (TBW RETURN SPRING FAILURE)

1. Throttle Valve and Return Spring Inspection

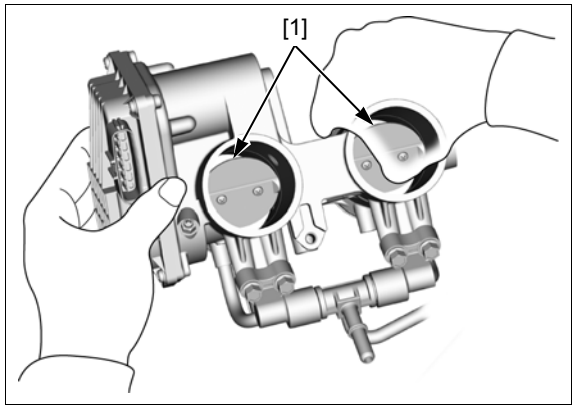
- Be careful not to damage the throttle valves.
- The return spring cannot be replaced. If the return spring is faulty, replace the throttle body/ TBW unit assembly.

Remove the throttle body (page 26-128).
Open the throttle valve [1] with your finger.

Does the throttle valve open and return smoothly?

YES – GO TO STEP 2.

NO – Faulty throttle body (throttle valve and/or return spring)



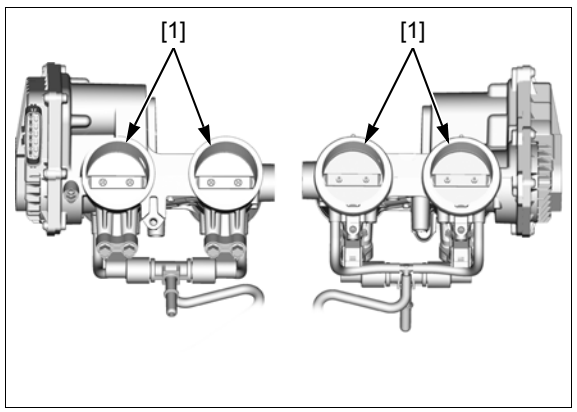
2. Throttle Body Inspection

Check the throttle bores [1] and valves visually for fixed carbon.

Is there contamination?

YES – Clean the throttle bores and valves carefully. (Do not apply commercially available carburetor cleaners to the inside of the throttle bore, which is coated with molybdenum.)

NO – GO TO STEP 3.



3. TBW System Inspection

Install the throttle body (page 26-128).
Erase the DTC (page 25-25).
Start the engine and let it idle, and then stop the engine and wait 10 seconds.
Check the TBW unit with the GST or MCS.

Is the DTC 77-1 indicated?

YES – • Replace the throttle body (page 26-128).
• If the ECM/PCM still detects a problem, replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Intermittent failure

DTC P2118 (TBW MOTOR FAILURE)

1. TBW Motor System Inspection

Erase the DTC (page 25-25).
Check the TBW motor with the GST or MCS.

Is the DTC P2118 indicated?

YES – GO TO STEP 2.

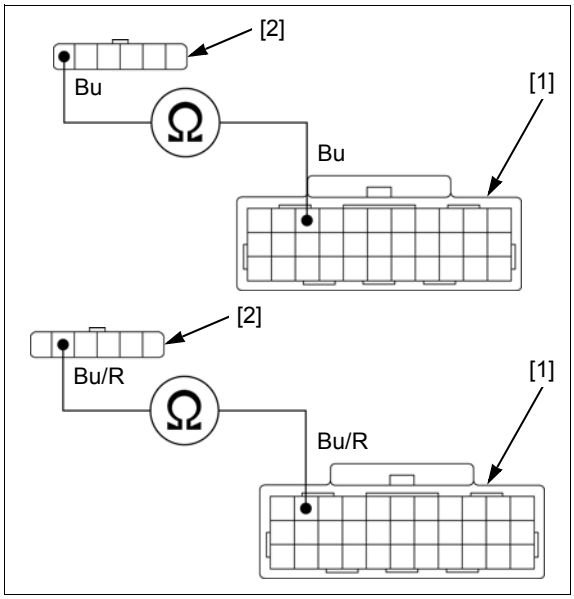
NO – Intermittent failure

2. TBW Motor Line Open Circuit Inspection

Disconnect the ECM/PCM 33P (Blue) connector (page 4-39).
Disconnect the TBW unit 6P (Black) connector (page 26-128).
Check for continuity between the ECM/PCM connector [1] and TBW unit connector [2] terminals at the harness side.

TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Blue/red – Blue/red
Blue – Blue



Is there continuity?

YES – GO TO STEP 3.

NO – • Open circuit in the Blue/red wire
• Open circuit in the Blue wire

3. TBW Motor Inspection

• The TBW motor cannot be replaced. If the TBW motor is faulty, replace the throttle body/TBW unit assembly.

Replace the throttle body (page 26-128).
Connect the ECM/PCM and TBW unit connectors.
Erase the DTC (page 25-25).
Check the TBW motor with the GST or MCS.

Is the DTC P2118 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original TBW unit (TBW motor)

DTC P2101 (TBW SYSTEM CONTROL CORRELATION FAILURE)

1. TBW System Inspection

Erase the DTC (page 25-25).
Check the TBW system with the GST or MCS.

Is the DTC P2101 indicated?

YES – GO TO STEP 2.

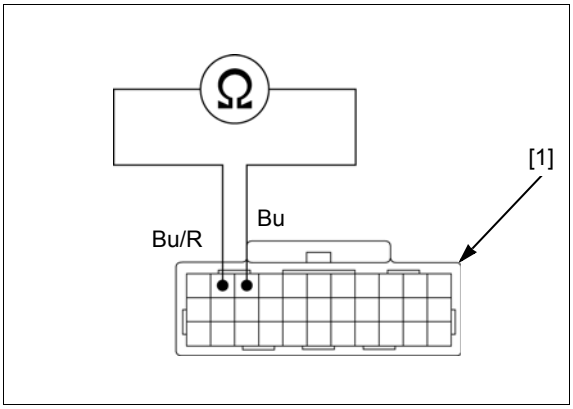
NO – Intermittent failure

2. TBW Motor Line Open Circuit Inspection

Disconnect the ECM/PCM 33P (Blue) connector [1] (page 4-39).
Check for continuity between the ECM/PCM connector at the harness side.

TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Blue – Blue/red



Is there continuity?

YES – GO TO STEP 3.

NO – • Open circuit in the Blue wire
• Open circuit in the Blue/red wire

3. TBW Unit Inspection

Replace the throttle body (page 26-128).
Erase the DTC (page 25-25).
Check the TBW system with the MCS.

Is the DTC P2101 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original TBW unit (TBW control system)

DTC P055C (EOP SENSOR LOW VOLTAGE) (CRF1000D/D2/DL/DL2)

1. EOP Sensor System Inspection

Connect the MCS and start the engine.
Check the EOP sensor with the GST or MCS.

Is about 0 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. EOP Sensor Inspection

Stop the engine.
Disconnect the CKP sensor/EOP sensor 6P (Black) connector (page 22-10).
Turn the ignition switch ON.
Check the EOP sensor with the MCS.

Is about 0 V indicated?

YES – GO TO STEP 3.

NO – Faulty EOP sensor

3. EOP Sensor Input Line Open Circuit Inspection

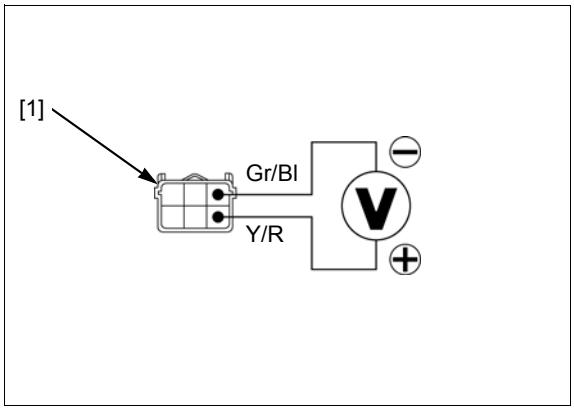
Measure the voltage at the wire harness side 6P (Black) connector [1].

Connection: Yellow/red (+) – Gray/black (–)

Is the voltage within 4.75 – 5.25 V?

YES – GO TO STEP 4.

NO – Open circuit in the Yellow/red wire



4. EOP Sensor Output Line Short Circuit Inspection

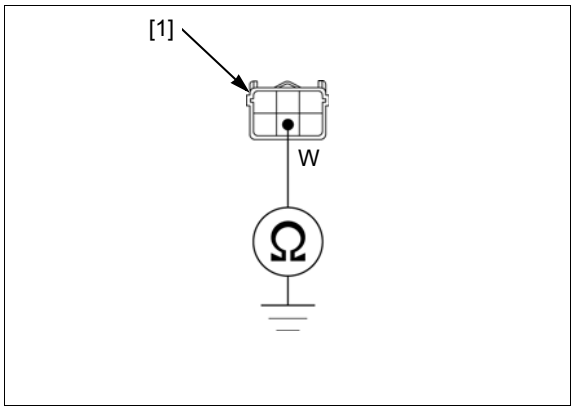
Turn the ignition switch OFF.
Disconnect the PCM 33P (Black) connector (page 4-39).
Check for continuity between the wire harness side 6P (Black) connector [1] and ground.

Connection: White – Ground

Is there continuity?

YES – Short circuit in the White wire

NO – Replace the PCM with a known good one and recheck (page 4-39).



DTC P055D (EOP SENSOR HIGH VOLTAGE) (CRF1000D/D2/DL/DL2)

NOTE:

- Before starting the inspection, check for loose or poor contact on the CKP sensor/EOP sensor 6P (Black), PCM 33P (Black) and 33P (Gray) connectors, and recheck the DTC.

1. EOP Sensor System Inspection

Check the EOP sensor with the GST or MCS.

Is about 5 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. EOP Sensor Inspection

Turn the ignition switch OFF.
Disconnect the CKP sensor/EOP sensor 6P (Black) connector (page 22-10).
Connect the wire harness side 6P (Black) connector [1] terminals with a jumper wire [2].

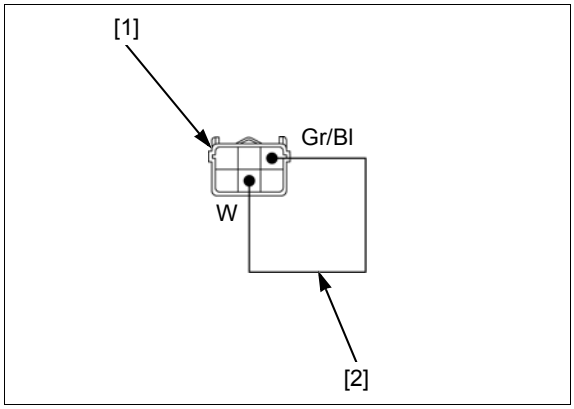
Connection: White – Gray/black

Turn the ignition switch ON.
Check the EOP sensor with the MCS.

Is about 0 V indicated?

YES – Faulty EOP sensor

NO – GO TO STEP 3.



3. EOP Sensor Ground Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side sensor 6P (Black) connector [1] and 33P (Gray) connector [2].

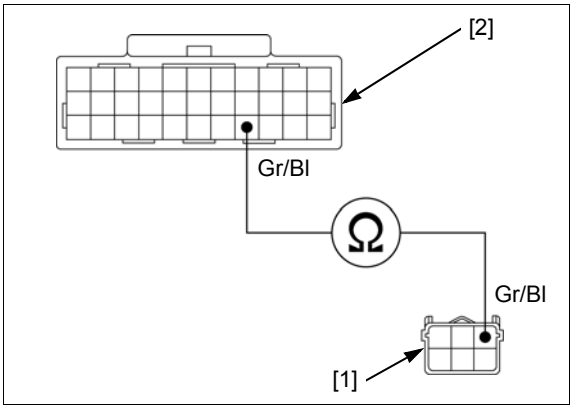
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Gray/black – Gray/black

Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Gray/black wire



4. EOP Sensor Output Line Open Circuit Inspection

Disconnect the PCM 33P (Black) connector (page 4-39).
Check for continuity between the wire harness side 6P (Black) connector [1] and 33P (Black) connector [2].

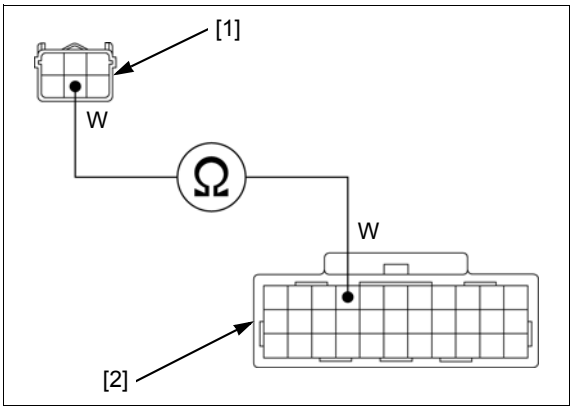
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: White – White

Is there continuity?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Open circuit in the White wire



DTC P0606 (CPU IN THE PCM)

1. DTC Recheck

Erase the DTC (page 25-25).
Check the DTC with the GST or MCS.

Is DTC P0606 indicated?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Intermittent failure

DTC P1658 (TBW RELAY FAILURE - ON SIDE)
DTC P1659 (TBW RELAY FAILURE - OFF SIDE)

1. TBW Relay System Inspection

Inspect the TBW relay (page 26-122).
Erase the DTC (page 25-25).
Check the TBW relay with the GST or MCS.

Is the DTC P1658 or P1659 indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. TBW Relay Input Voltage Inspection

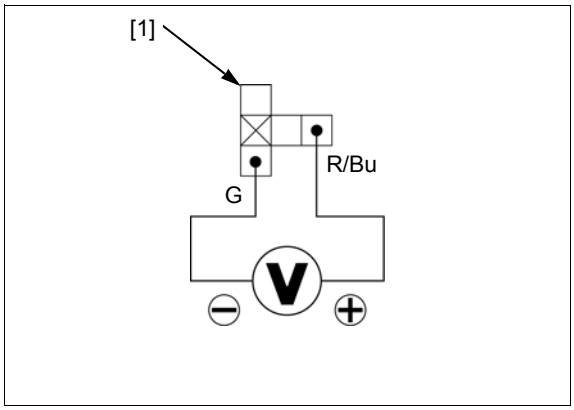
Turn the ignition switch OFF.
Remove the TBW relay (page 26-122).
Measure the voltage at the TBW relay terminal [1] and ground.

Connection: Red/blue (+) – Green (–)

Is about 12 V indicated?

YES – GO TO STEP 3.

NO – • Open circuit in Red/blue wire
• Open circuit in Green wire
• Blown TBW 10 A fuse



3. TBW Relay Line Open Circuit Inspection

Disconnect the ECM/PCM 33P (Blue) connector [1] and ECM/PCM 33P (Black) connector [2] (page 4-39).
Check for continuity between the ECM/PCM connector and TBW relay terminals [3] at the harness side.

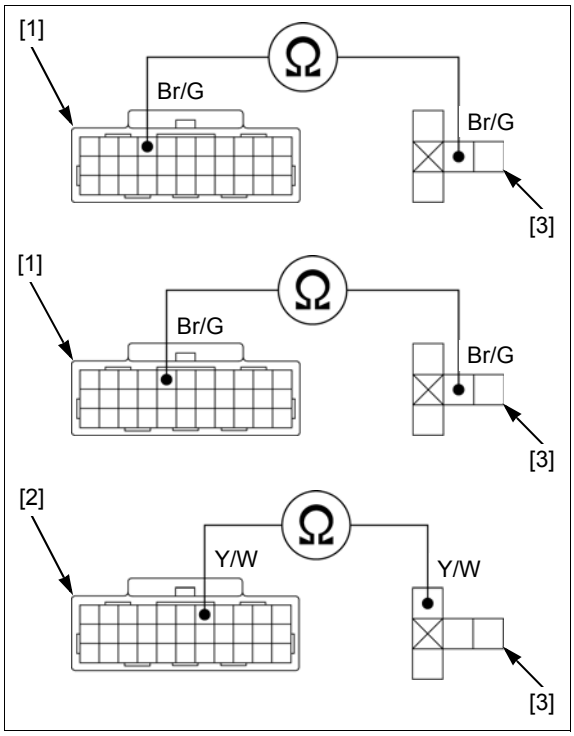
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Brown/green – Brown/green
Brown/green – Brown/green
Yellow/white – Yellow/white

Is there continuity?

YES – GO TO STEP 4.

NO – • Open circuit in the Brown/green wire
• Open circuit in the Yellow/white wire



4. TBW Relay Line Short Circuit Inspection

Check for continuity between the ECM/PCM (Blue) connector [1] and (Black) connector [2] terminals at the harness side and ground.

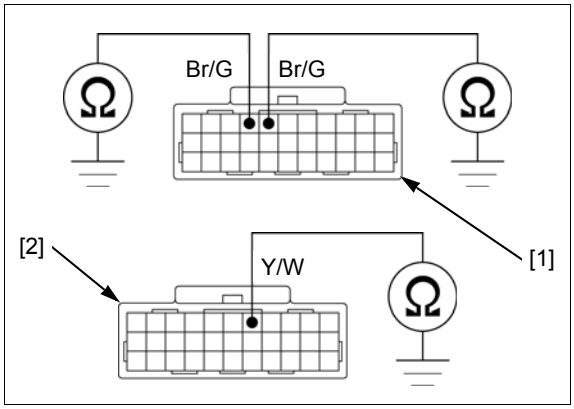
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Brown/green – Ground
Brown/green – Ground
Yellow/white – Ground

Is there continuity?

YES – • Short circuit in the Brown/green wire
• Short circuit in the Yellow/white wire

NO – Replace the ECM/PCM with a known good one and recheck (page 4-39).



DTC P0443 (EVAP PURGE CONTROL SOLENOID VALVE) (ED/KO/TH/FO/MA models)

NOTE:

- Before starting the inspection, check for loose or poor contact on the EVAP purge control solenoid valve 2P (Black) and ECM/PCM 33P (Black) connectors, and recheck the DTC.

1. EVAP Purge Control Solenoid Valve System Inspection

Erase the DTCs (page 25-25).
Start the engine and check the EVAP purge control solenoid valve with the GST or MCS.

Is the DTC P0443 indicated?

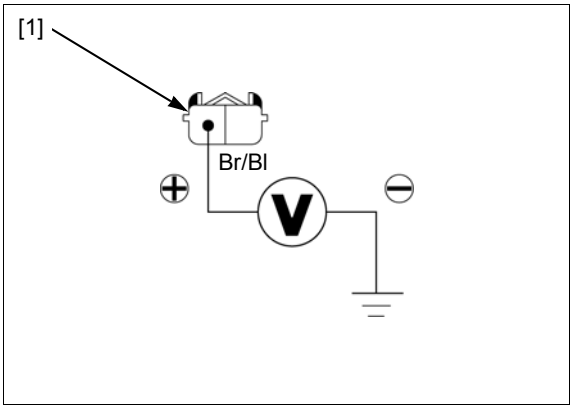
YES – GO TO STEP 2.

NO – Intermittent failure

2. EVAP Purge Control Solenoid Valve Input Voltage Inspection

Turn the ignition switch OFF.
Disconnect the EVAP purge control solenoid valve 2P (Black) connector (page 25-58).
Turn the ignition switch ON and engine stop switch "".
Measure the voltage between the wire harness side 2P (Black) connector [1] and ground.

Connection: Brown/black (+) – Ground (–)



Is there battery voltage?

YES – GO TO STEP 3.

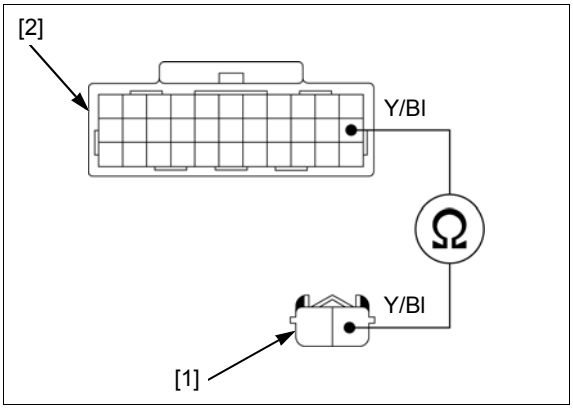
NO – Open circuit in the Brown/black wire

3. EVAP Purge Control Solenoid Valve Signal Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Black) connector (page 4-39).
Check for continuity between the wire harness side 2P (Black) [1] and 33P (Black) [2] connectors.

TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Yellow/black – Yellow/black



Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Yellow/black wire

4. EVAP Purge Control Solenoid Valve Signal Line Short Circuit Inspection

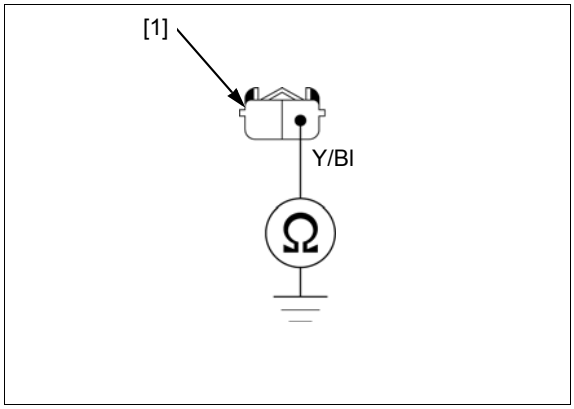
Check for continuity between the 2P (Black) connector [1] and ground.

Connection: Yellow/black – Ground

Is there continuity?

YES – Short circuit in the Yellow/black wire

NO – GO TO STEP 5.



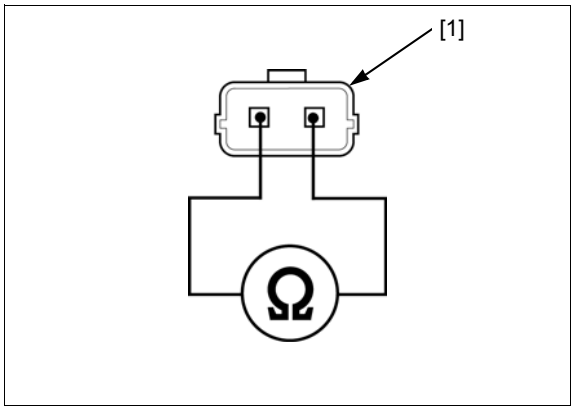
5. EVAP Purge Control Solenoid Valve Resistance Inspection

Measure the resistance between the solenoid valve side 2P (Black) connector [1] terminals.

Is the resistance within 30 – 34 Ω (20°C/68°F)?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty EVAP purge control solenoid valve



DTC P0412 (PAIR CONTROL SOLENOID VALVE)

NOTE:

- Before starting the inspection, check for loose or poor contact on the PAIR control solenoid valve 2P (Black) and ECM/PCM 33P (Black) connectors, and recheck the DTC.

1. PAIR Control Solenoid Valve System Inspection

Erase the DTCs (page 25-25).
Start the engine and check the PAIR control solenoid valve with the GST or MCS.

Is the DTC P0412 indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. PAIR Control Solenoid Valve Input Voltage Inspection

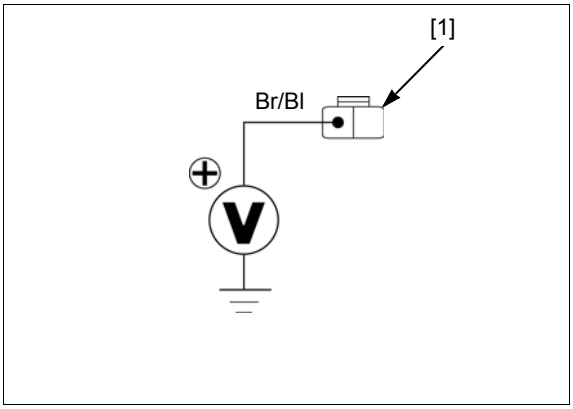
Turn the ignition switch OFF.
Disconnect the PAIR control solenoid valve 2P (Black) connector (page 25-58).
Turn the ignition switch ON and engine stop switch "".
Measure the voltage between the wire harness side 2P (Black) connector [1] and ground.

Connection: Brown/black (+) – Ground (–)

Is there battery voltage?

YES – GO TO STEP 3.

NO – Open circuit in the Brown/black wire



3. PAIR Control Solenoid Valve Signal Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Black) connector (page 4-39).
Check for continuity between the wire harness side 2P (Black) [1] and 33P (Black) [2] connectors.

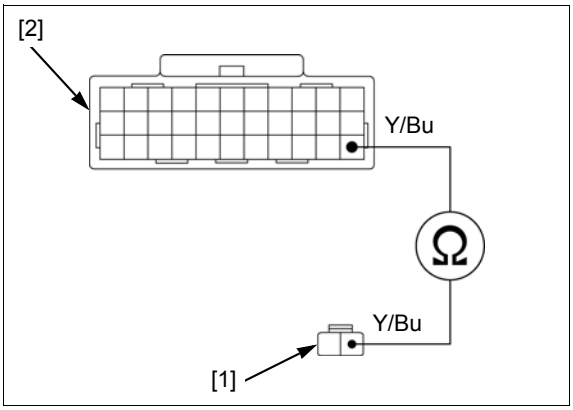
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Yellow/blue – Yellow/blue

Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Yellow/blue wire



4. PAIR Control Solenoid Valve Signal Line Short Circuit Inspection

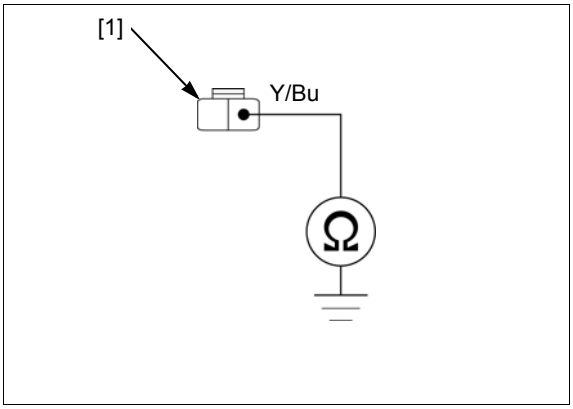
Check for continuity between the 2P (Black) connector [1] and ground.

Connection: Yellow/blue – Ground

Is there continuity?

YES – Short circuit in the Yellow/blue wire

NO – GO TO STEP 5.



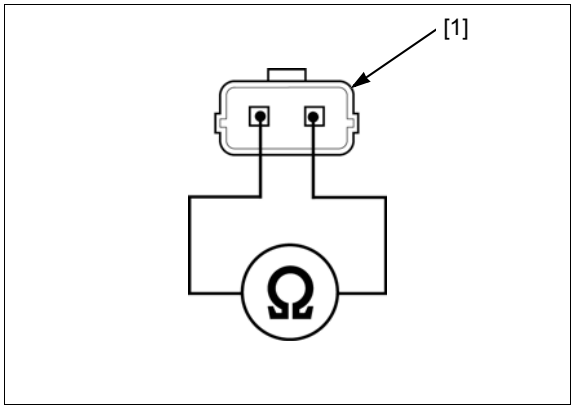
5. PAIR Control Solenoid Valve Resistance Inspection

Measure the resistance between the solenoid valve side 2P (Black) connector [1] terminals.

Is the resistance within 24 – 28 Ω (20°C/68°F)?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty PAIR control solenoid valve



DTC P0351 (No.1-1 [No1 CYLINDER MAIN] IGNITION COIL CIRCUIT)/ DTC P0352 (No.2-1 [No.2 CYLINDER MAIN] IGNITION COIL CIRCUIT)/ DTC P0353 (No.1-2 [No.1 CYLINDER SUB] IGNITION COIL CIRCUIT)/ DTC P0354 (No.2-2 [No.2 CYLINDER SUB] IGNITION COIL CIRCUIT)

1. Ignition Coil Primary Circuit System Inspection

Erase the DTCs (page 25-25).
Start the engine and check the ignition coil primary circuit with the GST or MCS.

Is the DTC P0351, P0352, P0353, or P0354 indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. Ignition Coil Primary Coil Input Voltage Inspection

Disassemble the ignition coil tray (page 26-124).
Connect the Ignition coil sub harness 6P connector (page 26-124).

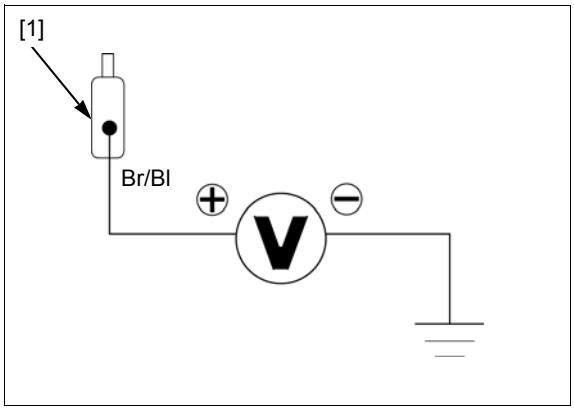
Turn the ignition switch ON and engine stop switch "".
Measure the voltage between the wire harness side wire connector [1] and ground.

Connection: Brown/black (+) – Ground (–)

Is there battery voltage?

YES – GO TO STEP 3.

NO – Open circuit in the Brown/black wire

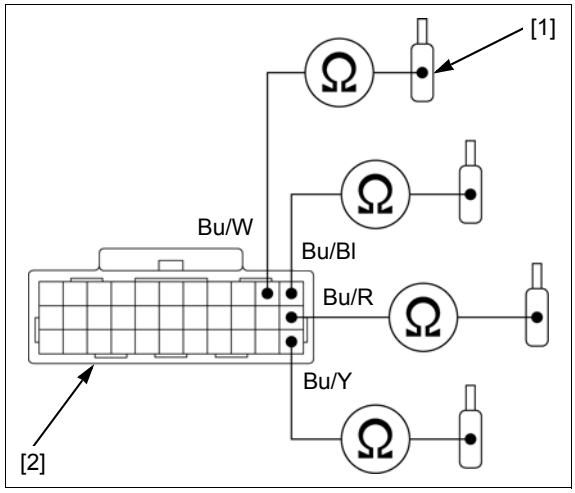


3. Ignition Coil Primary Coil Signal Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Blue) connector (page 4-39).
Check the continuity between the wire harness side wire connector [1] and 33P (Blue) connector [2].

TOOL:
Test probe 07ZAJ-RDJA110

Connection:
No.1-1 ignition coil: Blue/black – Blue/black
No.1-2 ignition coil: Blue/white – Blue/white
No.2-1 ignition coil: Blue/red – Blue/red
No.2-2 ignition coil: Blue/yellow – Blue/yellow



Is there continuity?

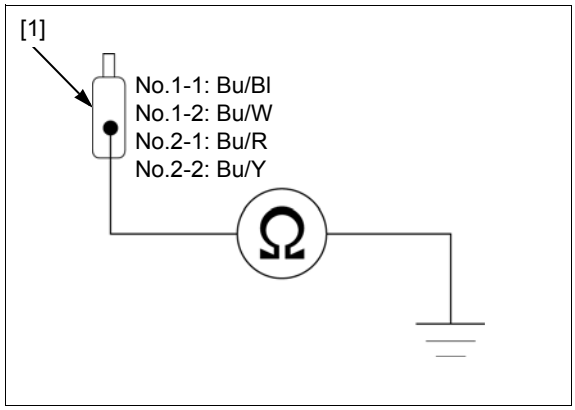
YES – GO TO STEP 4.

NO – • Open circuit in the Blue/black wire
• Open circuit in the Blue/white wire
• Open circuit in the Blue/red wire
• Open circuit in the Blue/yellow wire

4. Ignition Coil Primary Coil Signal Line Short Circuit Inspection

Check for continuity between the ignition coil wire connector [1] and ground.

Connection:
No.1-1 ignition coil: Blue/black – Ground
No.1-2 ignition coil: Blue/white – Ground
No.2-1 ignition coil: Blue/red – Ground
No.2-2 ignition coil: Blue/yellow – Ground



Is there continuity?

YES – • Short circuit in the Blue/black wire
• Short circuit in the Blue/white wire
• Short circuit in the Blue/red wire
• Short circuit in the Blue/yellow wire

NO – GO TO STEP 5.

5. Ignition Coil Primary Peak Voltage Inspection

Connect the ECM/PCM 33P (Blue) connector.
Inspect the ignition coil primary peak voltage (page 26-124).

Is the peak voltage normal?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – GO TO STEP 6.

6. Ignition Coil Inspection

Replace the Ignition coil with a known good one (page 26-124).
Erase the DTCs (page 25-25).
Check the ignition coil with the GST or MCS.

Is DTC P0351 (91-1) or P0352 (92-1) indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original ignition coil

DTC U0001 (CAN)

1. CAN System Inspection

Erase the DTC (page 25-25).
Check the CAN with the GST or MCS.

Is DTC U0001 indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. CAN Line Open Circuit Inspection

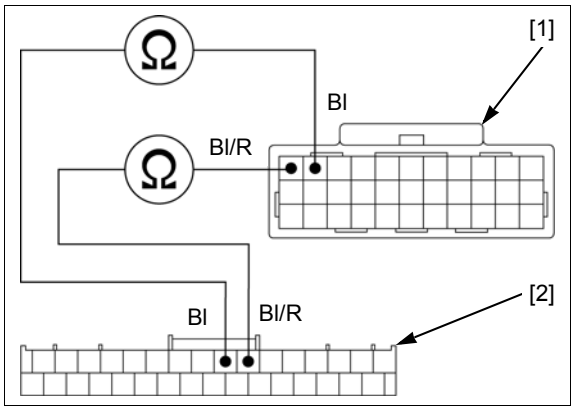
Turn the ignition switch OFF.
Disconnect the following:

– ECM 33P (Gray) connector [1] (page 4-39)
– Combination meter 32P (Gray) connector [2] (page 22-12)

Check the continuity between the wire harness side 32P (Gray) and 33P (Gray) connectors terminals.

TOOL:
Test probe 07ZAJ-RDJA110

Connection: Black/red – Black/red
Black – Black



Is there continuity?

YES – GO TO STEP 3.

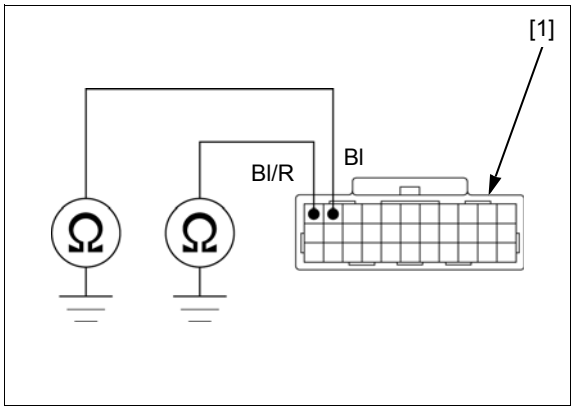
NO – • Open circuit in the Black/red wire
• Open circuit in the Black wire

3. CAN Line Short Circuit Inspection

Check for continuity between the wire harness side 33P (Gray) connector [1] terminals and ground.

Connection: Black/red – Ground
Black – Ground

TOOL:
Test probe 07ZAJ-RDJA110



Is there continuity?

YES – • Short circuit in the Black/red wire
• Short circuit in the Black wire

NO – GO TO STEP 4.

4. ECM Inspection

Replace the ECM/PCM with a known good one.
Disconnect the combination meter 32P (Gray) connector [2] (page 22-12).
Erase the DTC (page 25-25).

Check the CAN with the GST or MCS.

Is DTC U0001 indicated?

YES – GO TO STEP 5.

NO – Faulty original ECM/PCM

5. Combination meter Inspection

Replace the combination meter with a known good one.
Erase the DTC (page 25-25).

Check the CAN with the GST or MCS.

Is DTC U0155 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original combination meter

DTC U0155 (CAN_METER)

1. CAN System Inspection

Erase the DTC (page 25-25).
Check the CAN with the GST or MCS.

Is DTC U0001 indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. CAN Line Open Circuit Inspection

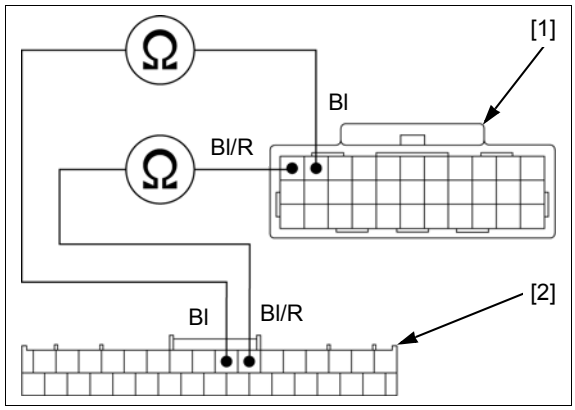
Turn the ignition switch OFF.
Disconnect the following:

– ECM 33P (Gray) connector [1] (page 4-39)
– Combination meter 32P (Gray) connector [2] (page 22-12)

Check the continuity between the wire harness side 32P (Gray) and 33P (Gray) connectors terminals.

TOOL:
Test probe 07ZAJ-RDJA110

Connection: Black/red – Black/red
Black – Black



Is there continuity?

YES – GO TO STEP 3.

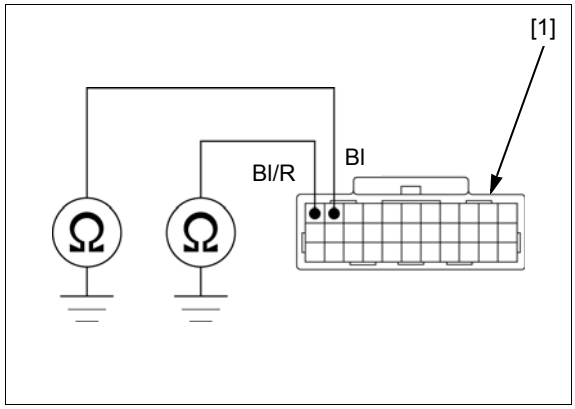
NO – • Open circuit in the Black/red wire
• Open circuit in the Black wire

3. CAN Line Short Circuit Inspection

Check for continuity between the wire harness side 33P (Gray) connector [1] terminals and ground.

Connection: Black/red – Ground
Black – Ground

TOOL:
Test probe 07ZAJ-RDJA110



Is there continuity?

YES – • Short circuit in the Black/red wire
• Short circuit in the Black wire

NO – GO TO STEP 4.

4. Combination meter Inspection

Replace the combination meter with a known good one.
Erase the DTC (page 25-25).

Check the CAN with the GST or MCS.

Is DTC U0155 indicated?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Faulty original combination meter

DTC P170D (SHIFT STROKE SENSOR LOW VOLTAGE) (CRF1000A/A2/AL/AL2)

1. Shift Stroke Sensor System Inspection

Check the shift stroke sensor with the GST or MCS.

Is the indicated voltage within 0.5 – 4.5 V?

YES – Intermittent failure

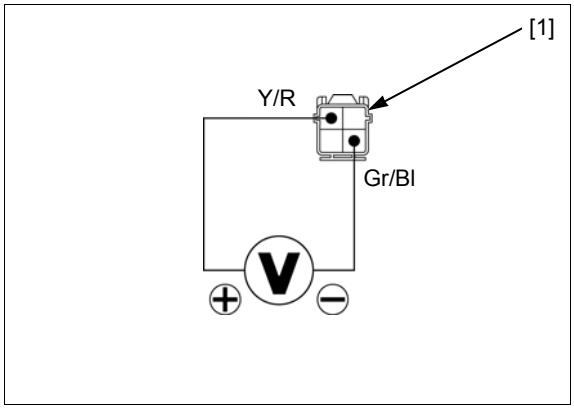
NO – GO TO STEP 2.

2. Shift Stroke Sensor Input Voltage Inspection

Turn the ignition switch OFF.
Disconnect the shift stroke sensor 4P connector.

Turn the ignition switch ON and engine stop switch "".
Measure the voltage between the wire harness side 4P connector terminals.

Connection: Yellow/red (+) – Gray/black (–)



Is the voltage within 4.75 – 5.25 V?

YES – GO TO STEP 4.

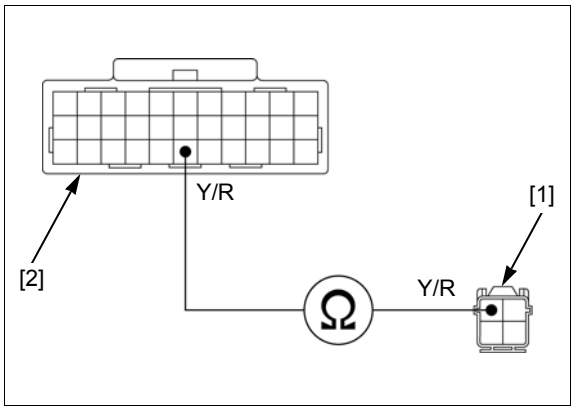
NO – GO TO STEP 3.

3. Shift Stroke Sensor Circuit Inspection

Turn the ignition switch OFF.

Disconnect the ECM 33P (Gray) connector.
Check for continuity between the wire harness side 4P [1] and ECM 33P (Gray) [2] connectors terminals.

TOOL:
Test probe **07ZAJ-RDJA110**



Connection: Yellow/red – Yellow/red

Is there continuity?

YES – Replace the ECM with a known good one and recheck (page 4-39).

NO – Open circuit in Yellow/red wire

4. Shift Stroke Sensor Output Line Open Circuit Inspection

Turn the ignition switch OFF.

Disconnect the ECM 33P (Blue) connector.
Check for continuity between the wire harness side 4P [1] and 33P (Blue) [2] connectors terminals.

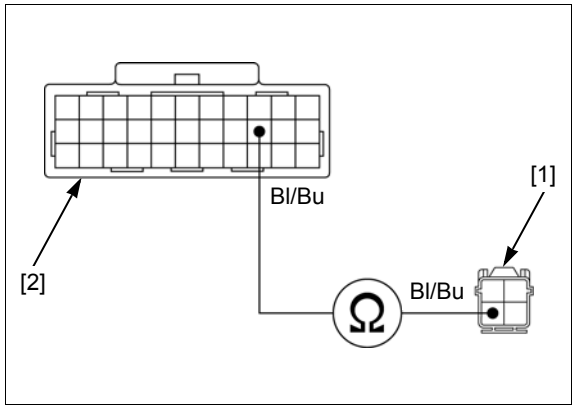
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Black/blue – Black/blue

Is there continuity?

YES – GO TO STEP 5.

NO – Open circuit in Black/blue wire



5. Shift Stroke Sensor Output Line Short Circuit Inspection

Connect the ECM 33P connectors.

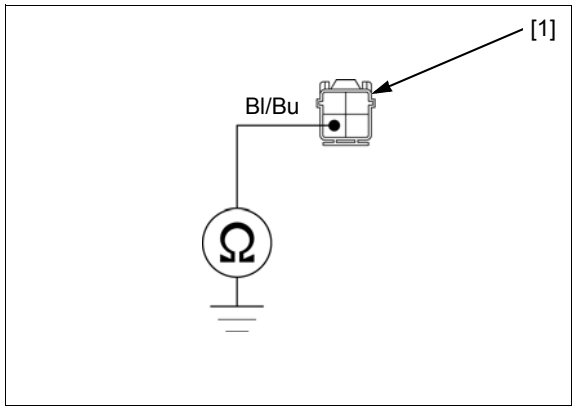
Check for continuity between the wire harness side 4P connector [1] and ground.

Connection: Black/blue – Ground

Is there continuity?

YES – Short circuit in Black/blue wire

NO – GO TO STEP 6.



6. Shift Stroke Sensor Inspection

Replace the shift stroke sensor with a known good one.
Erase the DTC (page 25-25).

Check the shift stroke sensor with the GST or MCS.

Is DTC P170D indicated?

YES – Replace the ECM with a known good one and recheck (page 4-39).

NO – Faulty original shift stroke sensor

DTC P1708 (SHIFT SPINDLE SWITCH HIGH VOLTAGE) (CRF1000A/A2/AL/AL2)

1. Shift Spindle Switch System Inspection

Erase the DTC (page 25-25).
Check the shift spindle switch with the GST or MCS.

Is DTC P1708 indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. Shift Spindle Switch Input Line Short Circuit Inspection

Turn the ignition switch OFF.
Disconnect the shift spindle switch terminal.

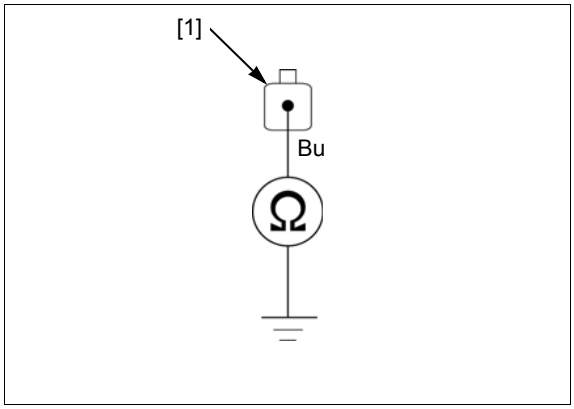
Check for continuity between the wire harness side switch terminal and ground.

Connection: Yellow/white – Ground

Is there continuity?

YES – Short circuit in Yellow/white wire

NO – GO TO STEP 3.



3. Shift Spindle Switch Inspection

Replace the shift spindle switch with a known good one.
Erase the DTC (page 25-25).

Check the shift spindle switch with the GST or MCS.

Is DTC P1708 indicated?

YES – Replace the ECM with a known good one and recheck (page 4-39).

NO – Faulty original shift spindle switch

DTC P0704 (CLUTCH SWITCH) (CRF1000A/A2/AL/AL2)

1. Clutch Switch System Inspection

Erase the DTC (page 25-25).
Check the clutch switch with the GST or MCS.

Is DTC P0704 indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. Clutch Switch Input Line Short Circuit Inspection

Turn the ignition switch OFF.
Disconnect the left handlebar switch 10P (Gray) connector.

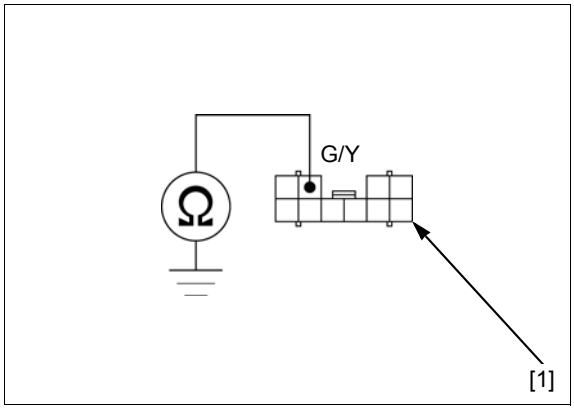
Check for continuity between the wire harness side 10P (Gray) [1] connector and ground.

Connection: Green/yellow – Ground

Is there continuity?

YES – Short circuit in Green/Yellow wire

NO – GO TO STEP 3.



3. Clutch Switch Inspection

Replace the clutch switch with a known good one.
Erase the DTC (page 25-25).

Check the clutch switch with the GST or MCS.

Is DTC P0704 indicated?

YES – Replace the ECM with a known good one and recheck (page 4-39).

NO – Faulty original clutch switch

MIL CIRCUIT TROUBLESHOOTING

When The Engine Starts But The MIL Does Not Go Off Within A Few Seconds

NOTE:

- If the engine stop switch is in " ⊗", the MIL will stay on even when the system is normal.

If the MIL stays on, check the combination meter indication when the CAN line is abnormal (page 26-67).

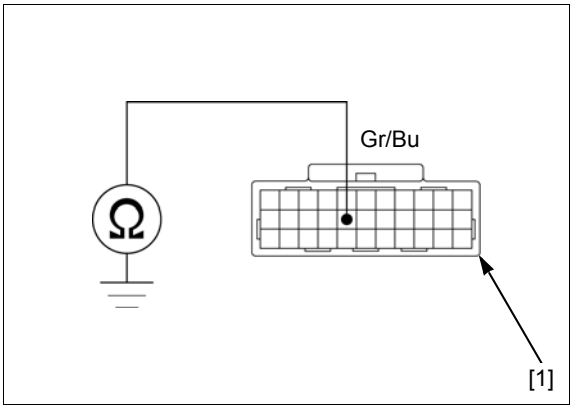
If the indication is not according to above condition, check as follows.

Turn the ignition switch OFF.
Disconnect the ECM/PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side ECM/PCM 33P (Gray) connector [1] and ground.

TOOL:
Test probe **07ZAJ-RDJA110**

CONNECTION: Gray/blue – Ground

If there is continuity, check for short circuit in the Gray/blue wire between the DLC and ECM/PCM.
If there is no continuity, replace the ECM/PCM with a known good one and recheck (page 4-39).



ECM (CRF1000A/A2/AL/AL2)/ PCM (CRF1000D/D2/DL/DL2) (PGM-FI SYSTEM)

POWER/GROUND LINE INSPECTION

POWER INPUT LINE

Disconnect the ECM/PCM 33P (Blue) connector (page 4-39).

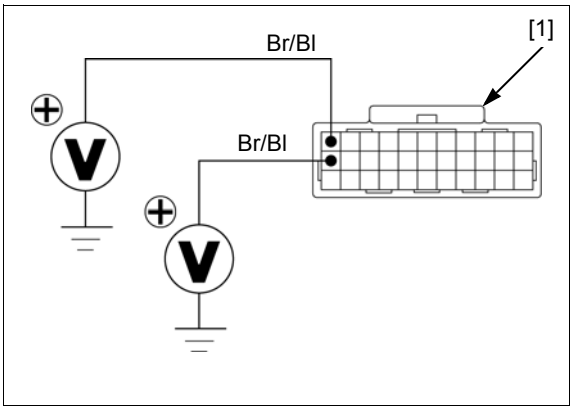
Measure the voltage between the wire harness side ECM/PCM 33P (Blue) connector [1] and ground.

TOOL:
Test probe **07ZAJ-RDJA110**

CONNECTION: Brown/black (+) – Ground (–)
Brown/black (+) – Ground (–)

There should be battery voltage with the ignition switch turned ON and engine stop switch "∩".

If there is no voltage, check the following:
– Open circuit in the Brown/black wire between the ECM/PCM and FI relay
– FI relay and related circuit (page 4-43)



GROUND LINE

Disconnect the ECM/PCM 33P (Blue) and (Gray) connectors (page 4-39).

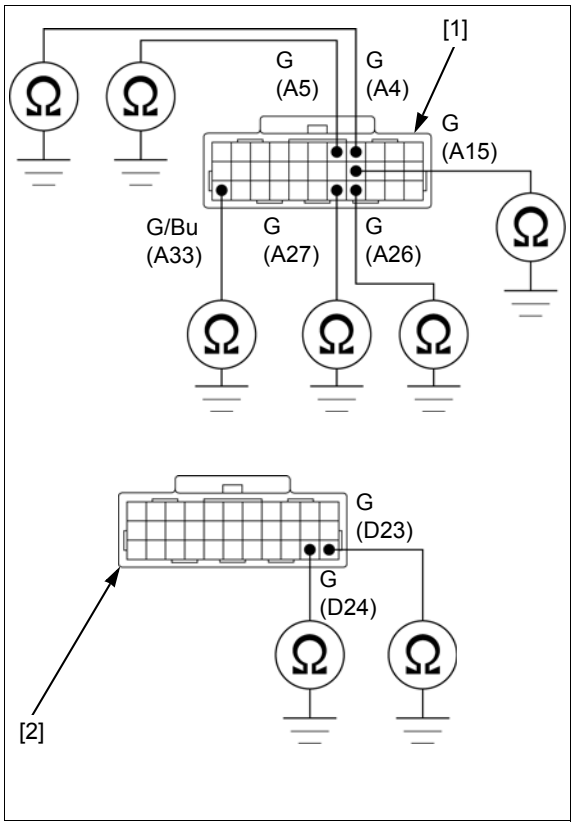
Check for continuity between the ECM/PCM (Blue) connector [1] and (Gray) connector [2] terminals at the harness side and ground.

TOOL:
Test probe 07ZAJ-RDJA110

CONNECTION: Green (A4) – Ground
Green (A5) – Ground
Green (A15) – Ground
Green (A26) – Ground
Green (A27) – Ground
Green/blue (A33) – Ground
Green (D23) – Ground
Green (D24) – Ground

There should be continuity at all times.

If there is no continuity, check for open circuit in the Green/blue or Green wire.



GRIP APS/RIGHT HANDLEBAR SWITCH

APS INSPECTION

NOTE:

- Before starting the inspection, check for loose or poor contact on the APS connector and ECM connector, then recheck the DTC.

1. APS 1 and 2 Input Voltage Inspection

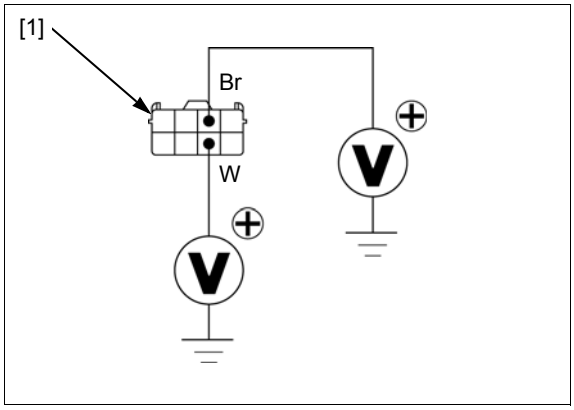
Turn the ignition switch OFF.
Disconnect the APS 8P (Black) connector [1] (page 26-117).
Turn the ignition switch ON with the engine stop switch "○".
Measure the voltage at the harness side.

Connection: White (+) [VCC 2] – Ground
Brown (+) [VCC 1] – Ground

Is the voltage about 5 V?

YES – GO TO STEP 2.

NO – Open or short circuit in the White or Brown wire. If the wires are OK, replace the ECM/PCM with a known good one and recheck (page 4-39).



2. APS 1 and 2 System Inspection

Erase the DTC (page 25-25).
Check the APS 1 and 2 with the MCS.
Note the APS 1 and 2 output voltage.

Calculate the 5 V / input voltage x output voltage.
Standard (at throttle opened):
APS 1: 4.433 – 4.567 V
APS 2: 2.183 – 2.317 V
Standard (at throttle closed):
APS 1: 0.433 – 0.567 V
APS 2: 0.183 – 0.317 V

Is the voltage within standard?

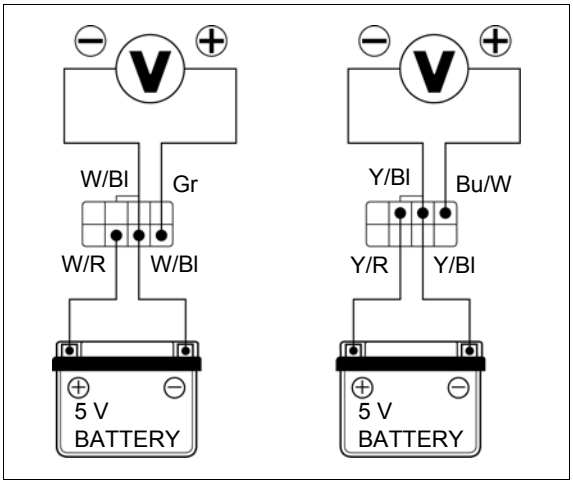
YES – Intermittent failure

NO – GO TO STEP 3.

3. APS System Inspection

Connect a 5 V battery to the APS connector terminals at the APS side as shown.
Measure the voltage at the APS side.

Connection: Gray (+) – White/black (–)
Blue/white (+) – Yellow/black (–)



Calculate the 5 V / input voltage x output voltage.
Standard (at throttle opened):
APS 1: 4.488 – 5.512 V
APS 2: 2.238 – 2.262 V
Standard (at throttle closed):
APS 1: 0.488 – 0.512 V
APS 2: 0.238 – 0.262 V

Is the voltage within standard?

YES – Replace the ECM/PCM with a known good one and recheck (page 4-39).

NO – Replace the APS with a known good one and recheck (page 26-117).

REMOVAL

NOTE:

- The parts of the grip APS not shown in this manual should not be disassembled.

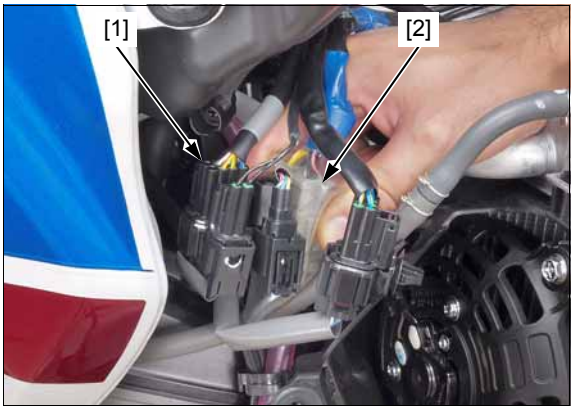
Remove the following:

– Right knuckle guard (page 2-5)
– Right rearview mirror (page 17-4)

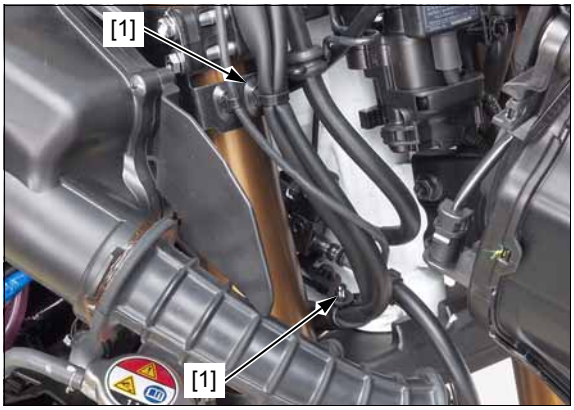
Pull the right radiator to out side (page 26-63).

Disconnect the follow:

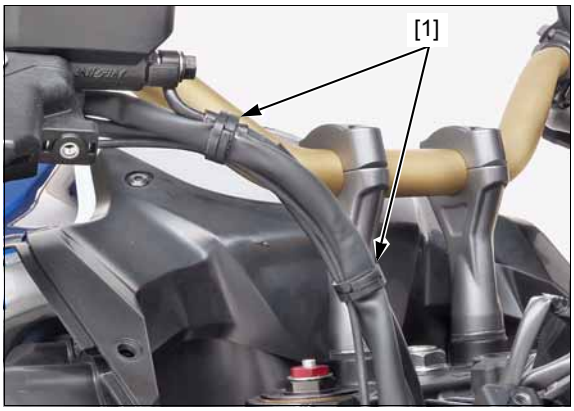
– APS 8P (Black) connector [1]
– Right handlebar switch 8P (Gray) connector [2]



Release the harness clips [1] from the stays.



Remove the clamps [1].



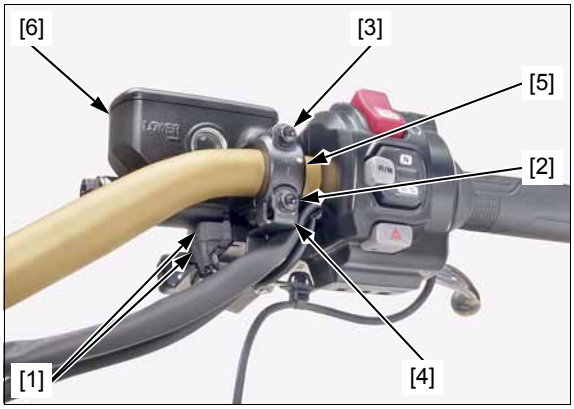
Disconnect the front brake light switch connectors [1].

Remove the following:

– Lower front brake master cylinder holder bolt [2]
– Upper front brake master cylinder holder bolt [3]
– Stay [4]
– Holder [5]
– Front brake master cylinder [6]

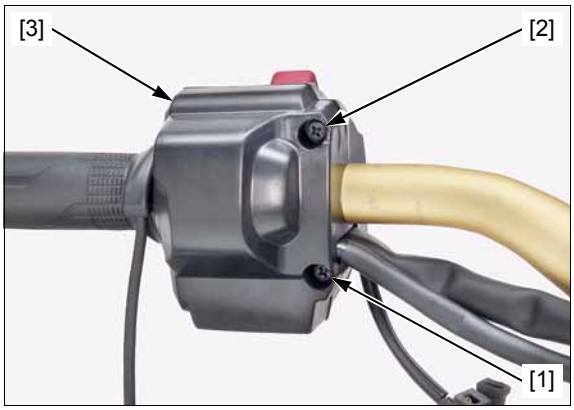
NOTE:

• Keep the brake master cylinder reservoir upright to prevent air from entering the hydraulic system.

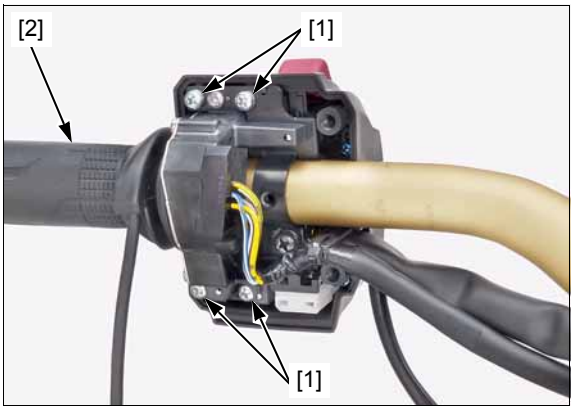


Remove the following:

– Lower right handlebar switch housing screw/ washers [1]
– Upper right handlebar switch housing screw/ washers [2]
– Right handlebar switch cover [3]

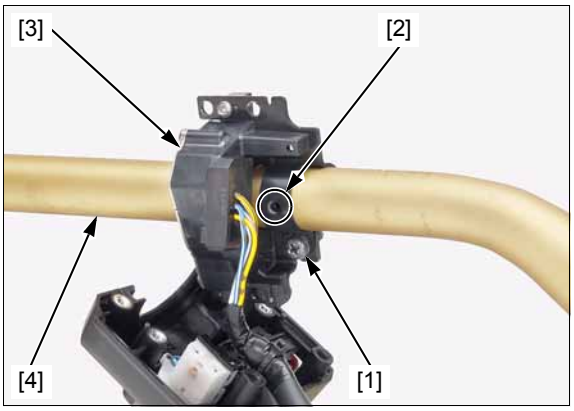


Remove the screws [1] and throttle grip [2].



Remove the screw [1] and unhook the tab of the stay [2] from the hole of the handlebar.

Remove the right handlebar switch/APS [3] from the handlebar [4].

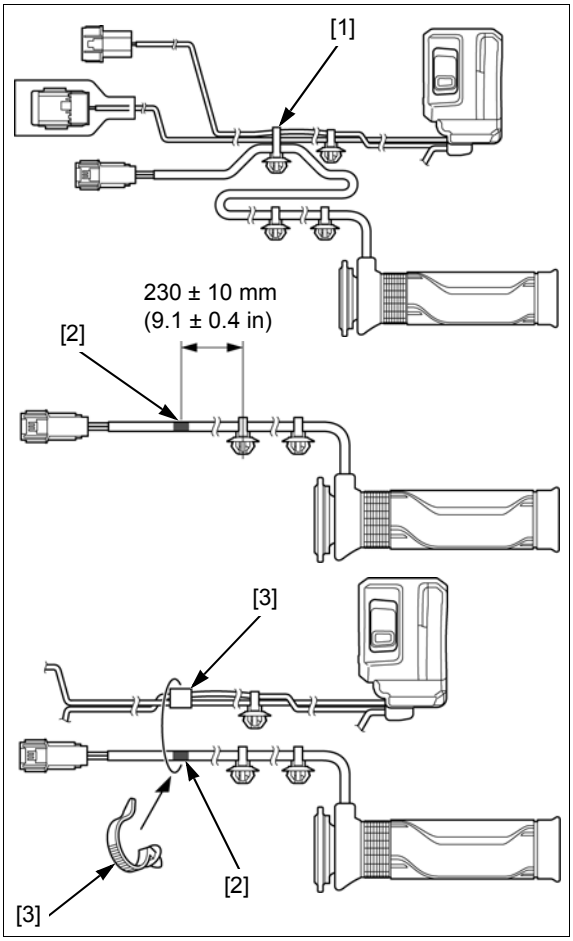


INSTALLATION

CRF1000A2/AL2/D2/DL2:

When replacing the right handlebar switch/APS, install the wire band to the following procedure:

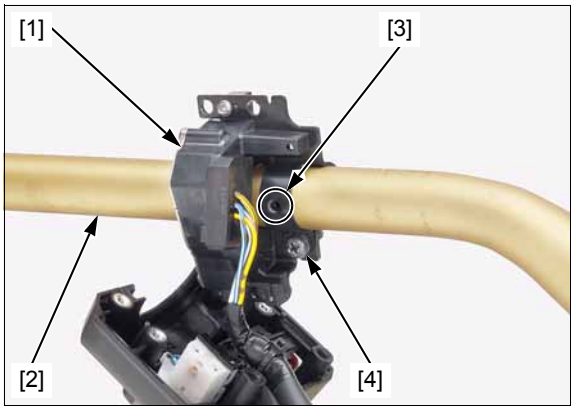
1. Remove the wire band [1].
2. Mark [2] the right grip heater wire as shown.
3. Install a new wire band by aligning the blue tape [3] of the right handlebar switch/APS wire and the marking of the right grip heater wire.



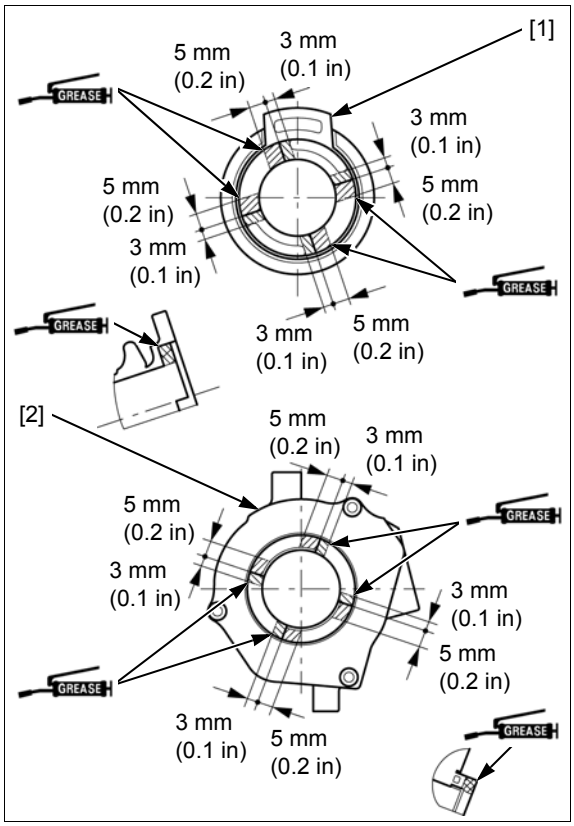
Install the right handlebar switch/APS [1] to the handlebar [2].

Align the tab of the stay with the hole [3] of the handlebar.

Install and tighten the screw [4].



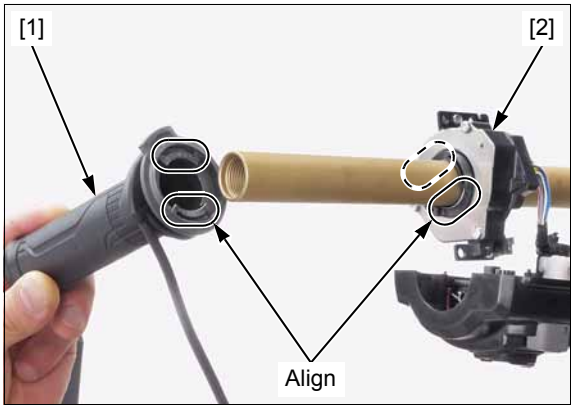
Apply grease to the throttle pipe [1] and APS [2] contact area as shown.



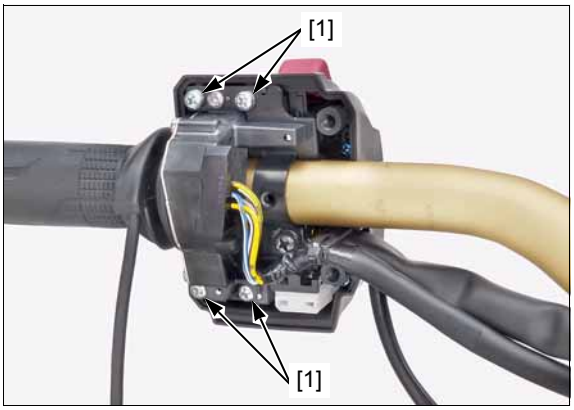
Install the throttle grip [1].

NOTE:

- Align the tab of throttle grip with the groove of APS [2].



Install and tighten the screws [1].

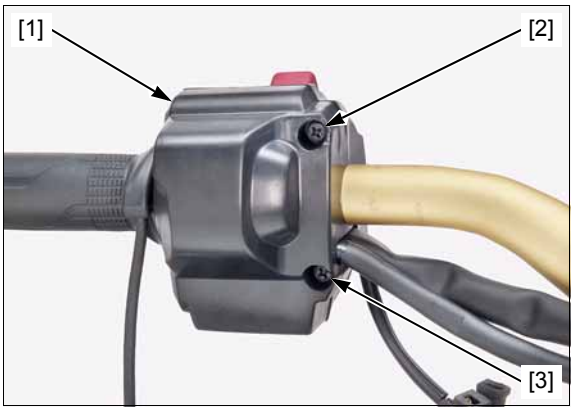


Install the following:

– Right handlebar switch cover [1]
– Upper right handlebar switch housing screw/washer [2]
– Lower right handlebar switch housing screw/washer [3]

Tighten the upper right handlebar switch housing screw/washer first, then the lower right handlebar switch housing screw/washer to the specified torque.

TORQUE: 2.5 N·m (0.3 kgf·m, 1.8 lbf·ft)



Install the following:

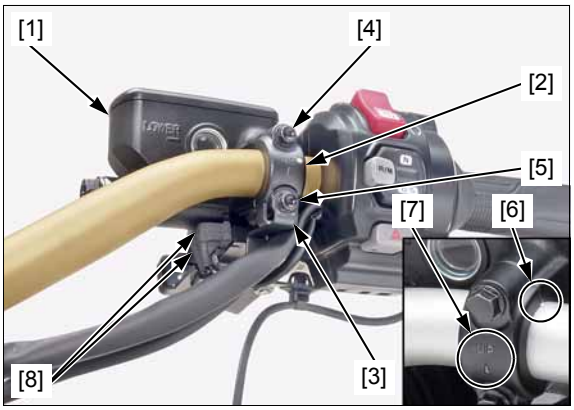
– Front brake master cylinder [1]
– Holder [2]
– Stay [3]
– Upper front brake master cylinder holder bolt [4]
– Lower front brake master cylinder holder bolt [5]

Tighten the upper front brake master cylinder holder bolt first, then the lower front brake master cylinder holder bolt to the specified torque.

TORQUE: 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)

NOTE:

- Align the front brake master cylinder end with the paint mark [6] on the handlebar.
- Holder "UP" mark [7] to facing upward.

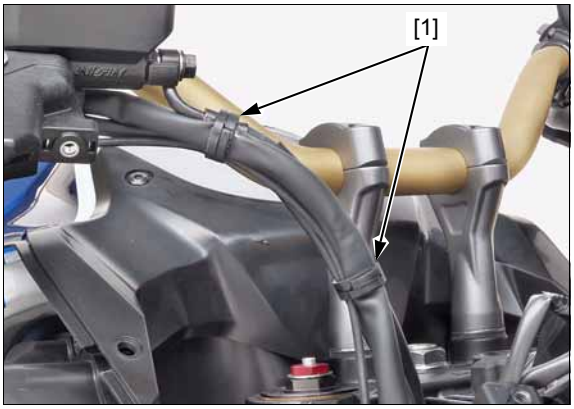


Connect the front brake light switch connectors [8].

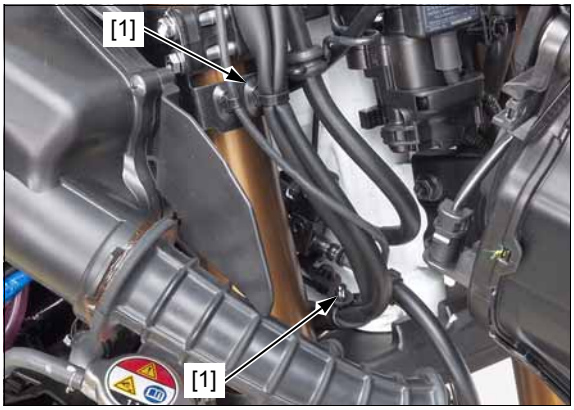
Install the clamps [1].

NOTE:

- Position the clamps properly (page 26-17).



Install the harness clips [1] to the stays.



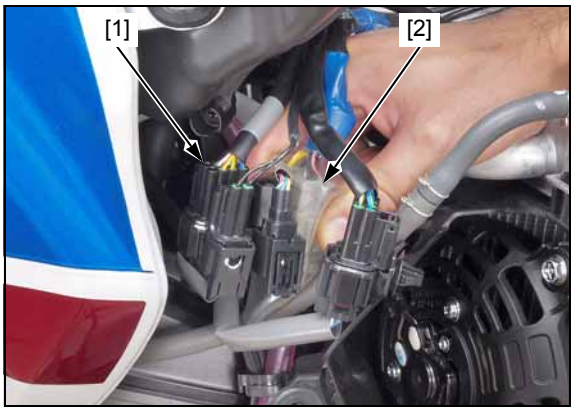
Connect the follow:

– APS 8P (Black) connector [1]
– Right handlebar switch 8P (Gray) connector [2]

Install the following:

– Right knuckle guard (page 2-5)
– Right rearview mirror (page 17-10)
– Right radiator (page 26-63)

Check the throttle operation.



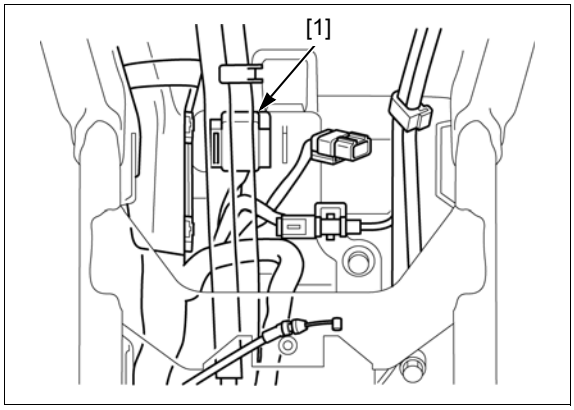
TBW RELAY

REMOVAL/INSTALLATION

Remove the fuel tank (page 26-128).

Remove the TBW relay [1] from the relay connector.

Installation is in the reverse order of removal.

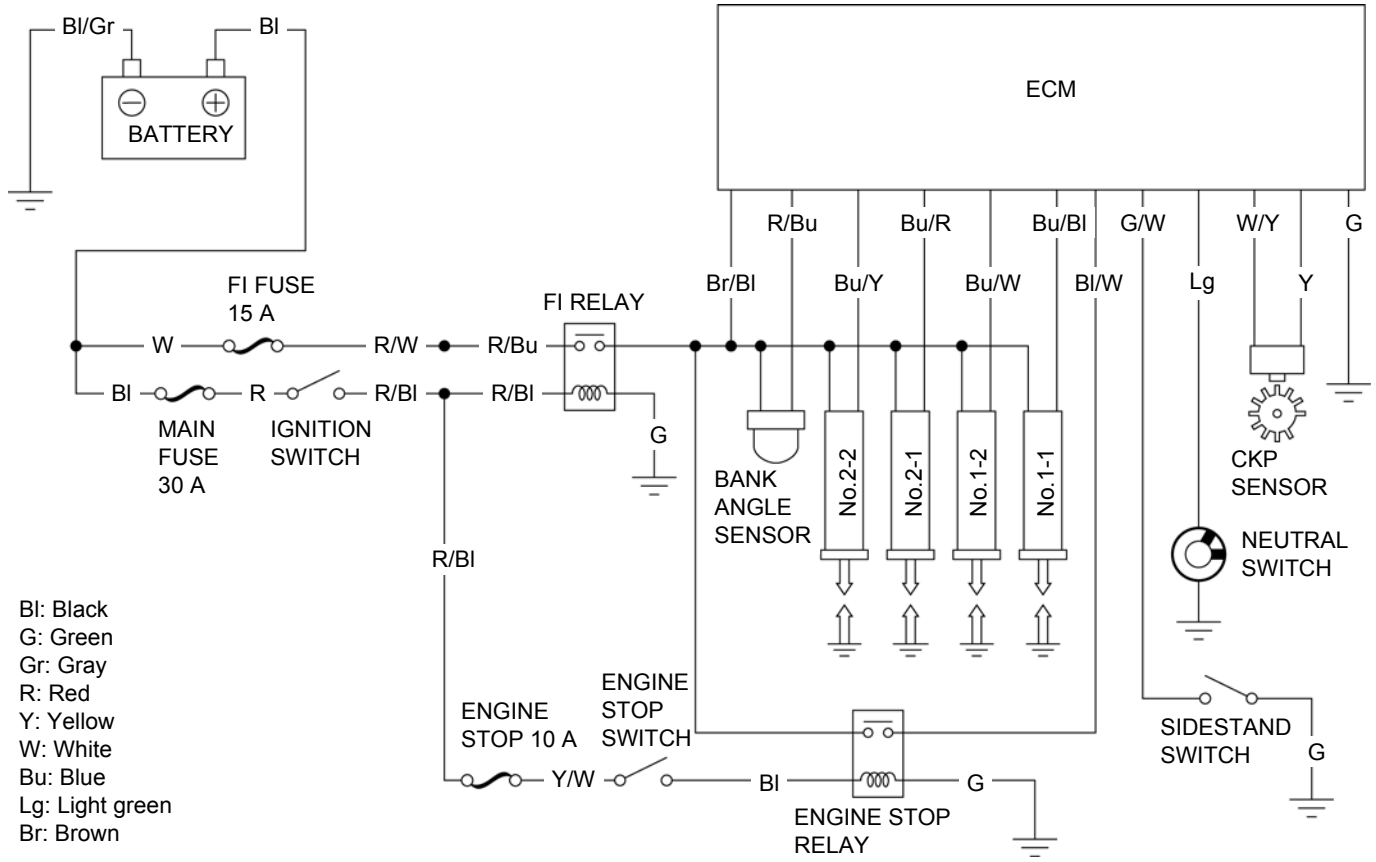


RELAY INSPECTION

Remove the TBW relay (page 26-122).

Refer to FI relay inspection (page 4-43).

IGNITION SYSTEM
SYSTEM DIAGRAM



IGNITION SYSTEM INSPECTION

CKP SENSOR PEAK VOLTAGE

NOTE:

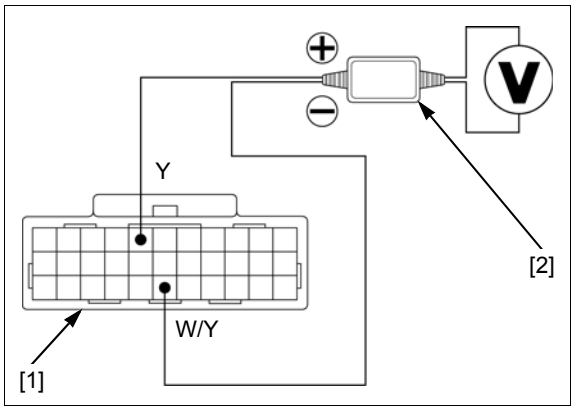
- For procedures not described below, refer to the Service Manual of 62MJP00 or 62MJP00Z.

Turn the ignition switch OFF.

Disconnect the ECM/PCM 33P (Black) connector [1] (page 4-39).

Connect the peak voltage tester or adaptor probes to the wire harness side 33P connector terminals.

TOOLS:
Imrie diagnostic tester (model 625) or
Peak voltage adaptor [2] 07HGJ-0020100
with commercially available digital multimeter
(impedance 10 MΩ/DCV minimum)
Test probe 07ZAJ-RDJA110



CONNECTION: Yellow (+) – White/yellow (–)

CRF1000A/A2/AL/AL2:

Shift the transmission into neutral.

Turn the ignition switch ON and engine stop switch "".

Crank the engine with the starter motor and measure the CKP sensor peak voltage.

PEAK VOLTAGE: 0.7 V minimum

If the peak voltage measured at the ECM/PCM 33P connectors are abnormal, measure the peak voltage at the CKP sensor connector.

IGNITION COIL

IGNITION COIL TRAY

REMOVAL/INSTALLATION

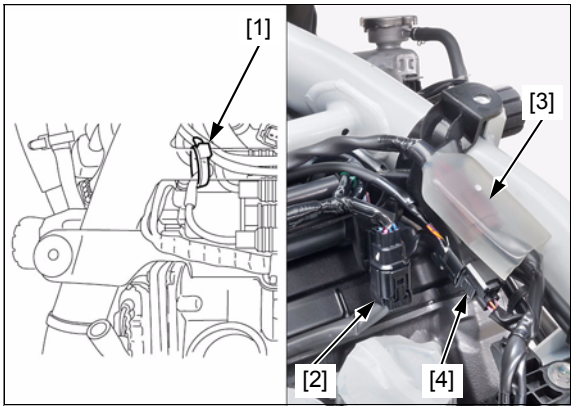
Disconnect the spark plug cap (page 3-5).
Remove the throttle body (page 26-128).

Remove the wire band [1].

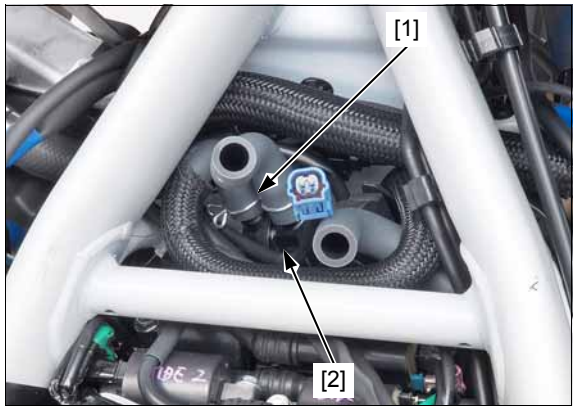
Disconnect the Ignition coil sub harness 6P connector [2].

Disconnect and release the following connectors from the ignition coil tray:

– Ignition switch 2P (Brown) connector [3]
– Immobilizer receiver 4P (Black) connector [4]



Disconnect the air supply hose [1] from the PAIR control solenoid valve [2].



Releasing the bosses [1] from the grommets [2] by pulling the ignition coil tray assembly [3] rearward.

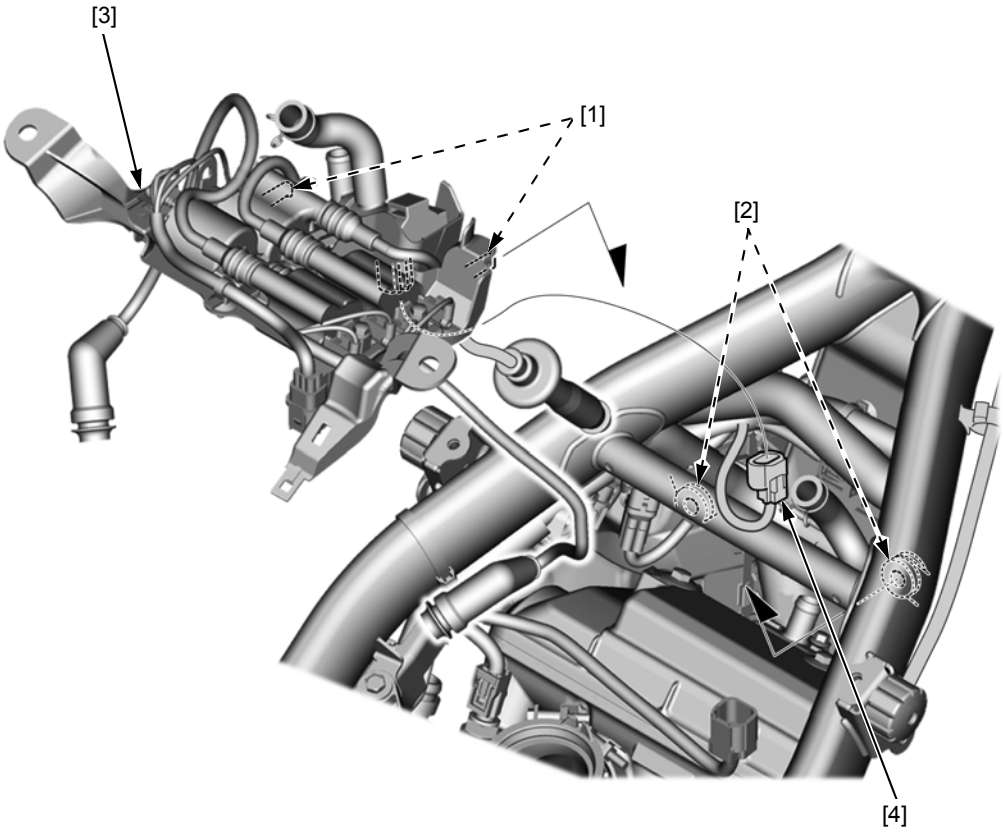
Disconnect the PAIR control solenoid valve 2P (Black) connector [4].

Remove the ignition coil tray assembly.

Installation is in the reverse order of removal.

NOTE:

- Route the wires properly (page 26-17).
- Tighten the insulator band screws (throttle body side) to the specified range (page 26-128).



DISASSEMBLY/ASSEMBLY

Remove the ignition coil tray assembly (page 26-124)

Remove the PAIR control solenoid valve [1].

Release the wire clip [2] and ignition coil sub harness 6P connector [3].

Remove the bolts [4].

Disconnect the ignition coil connectors [5].

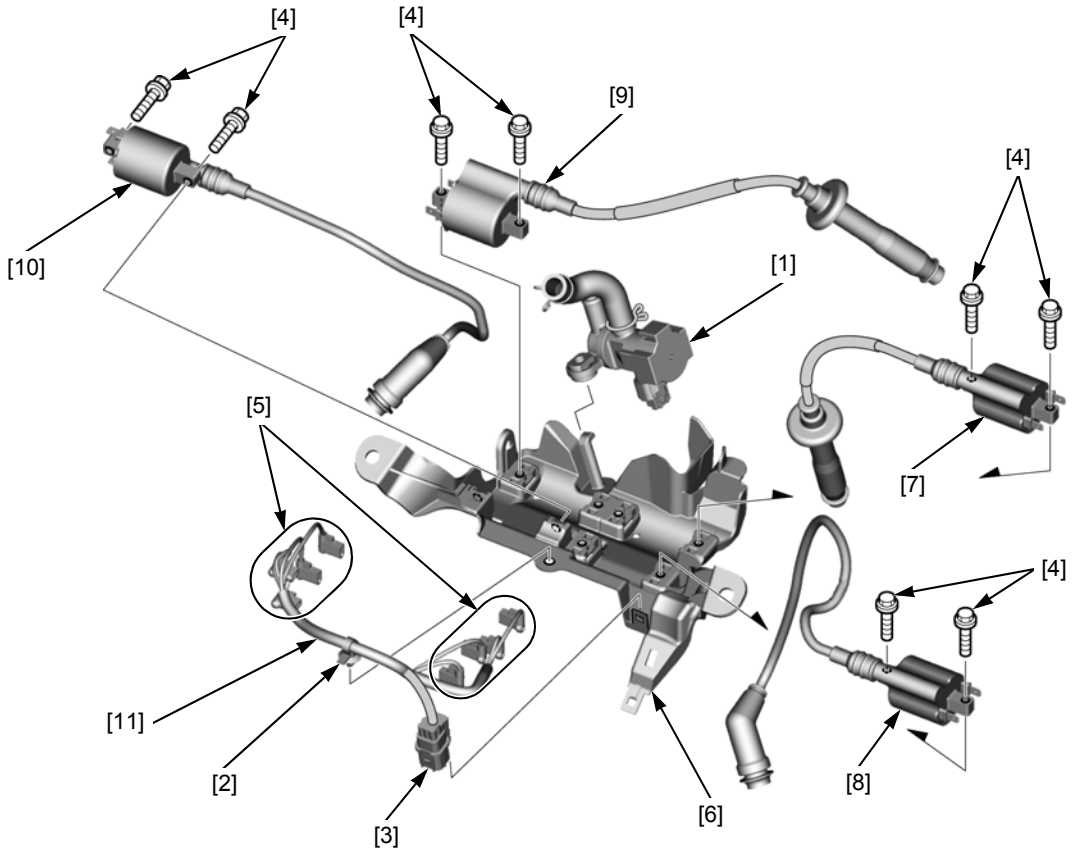
Remove the following parts from the ignition tray [6]:

– No.1 cylinder main ignition coil [7]
– No.1 cylinder sub ignition coil [8]
– No.2 cylinder main ignition coil [9]
– No.2 cylinder sub ignition coil [10]
– Ignition coil sub harness [11]

Installation is in the reverse order of removal.

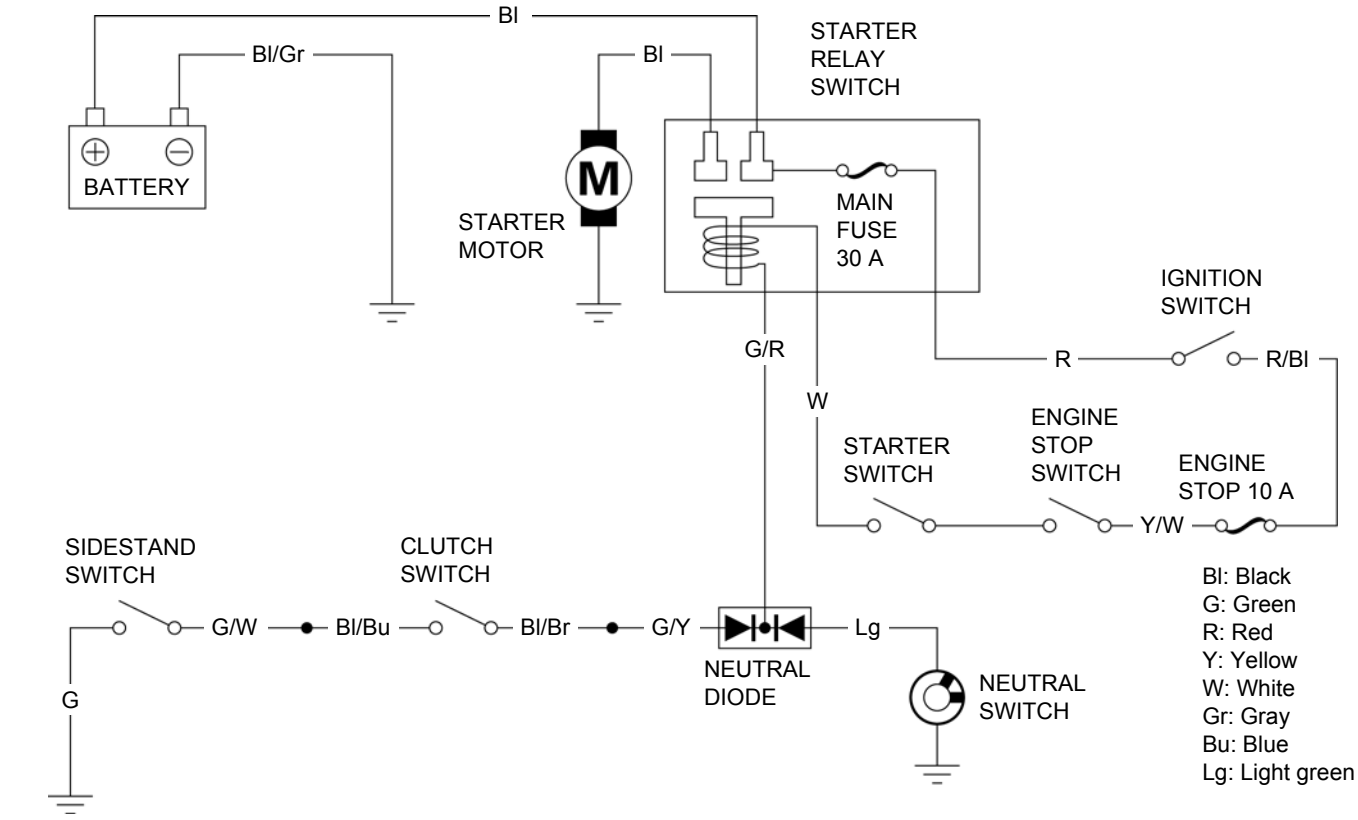
NOTE:

• Route the wire harness properly (page 26-17).

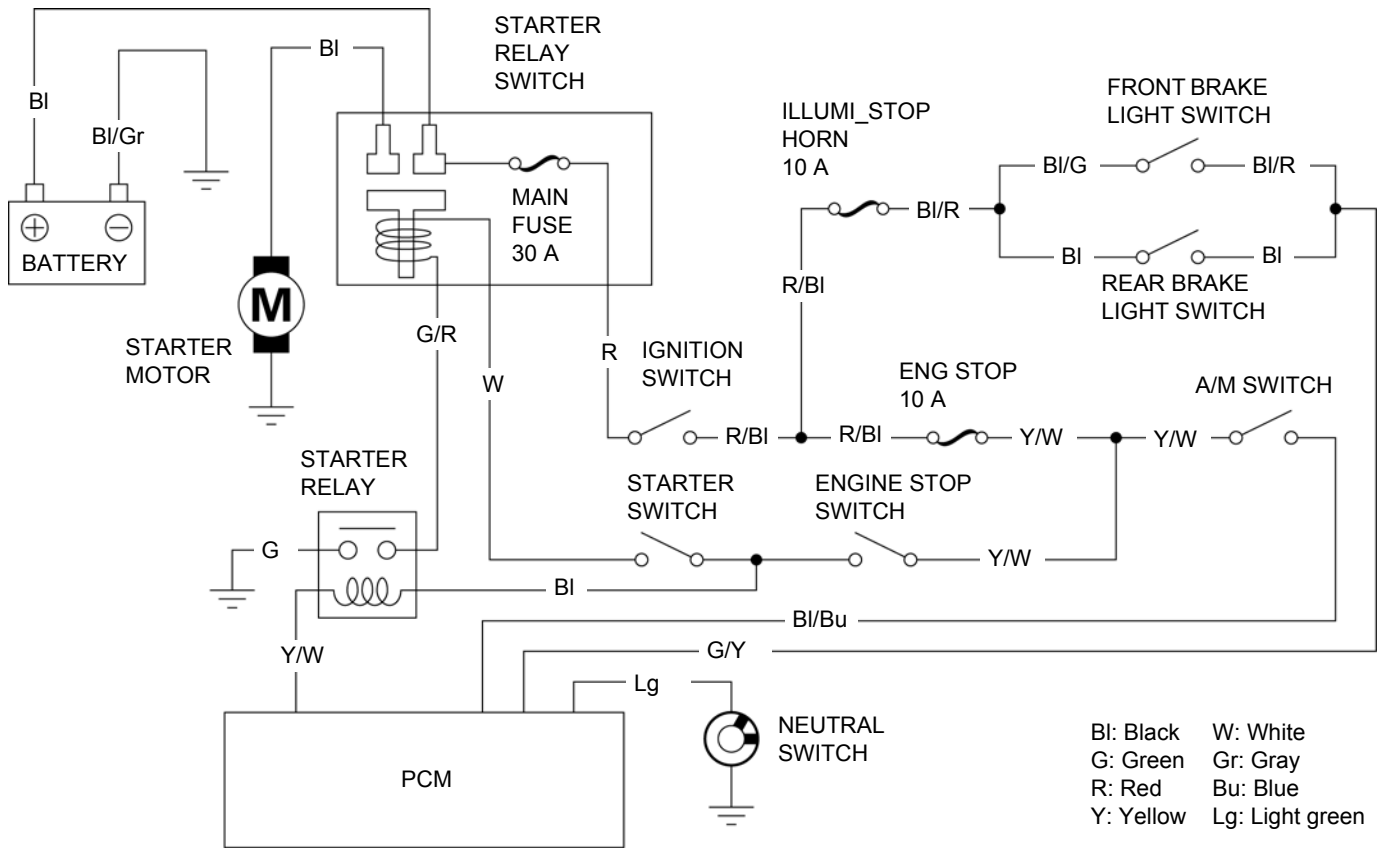


ELECTRIC STARTER SYSTEM DIAGRAM

CRF1000A/A2/AL/AL2:



CRF1000D/D2/DL/DL2:



FUEL TANK

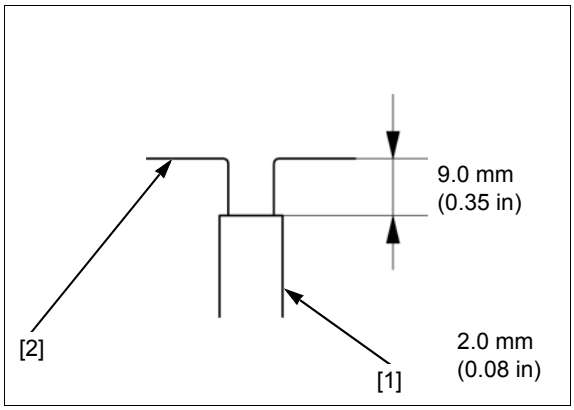
REMOVAL/INSTALLATION

NOTE:

- For procedures not described below, refer to the Service Manual of 62MJP00 or 62MJP00Z.

NOTE:

- Install the fuel tank breather hose [1] so that the hose end is 9.0 mm (0.35 in) from the fuel tank [2] (GS/U/IN models).
- Install the fuel tank-to-canister hose [1] so that the hose end is 9.0 mm (0.35 in) from the fuel tank [2] (ED/KO/TH/FO/MA models).



AIR CLEANER HOUSING

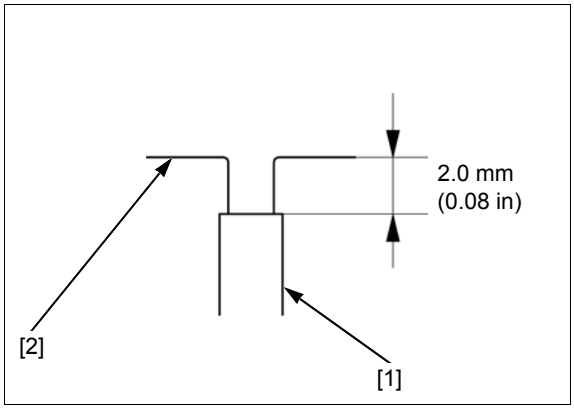
REMOVAL/INSTALLATION

NOTE:

- For procedures not described below, refer to the Service Manual of 62MJP00 or 62MJP00Z.

NOTE:

- Install the crankcase breather hose [1] so that the hose end is 2.0 mm (0.08 in) from the air cleaner housing [2].



THROTTLE BODY

REMOVAL

Remove the following:

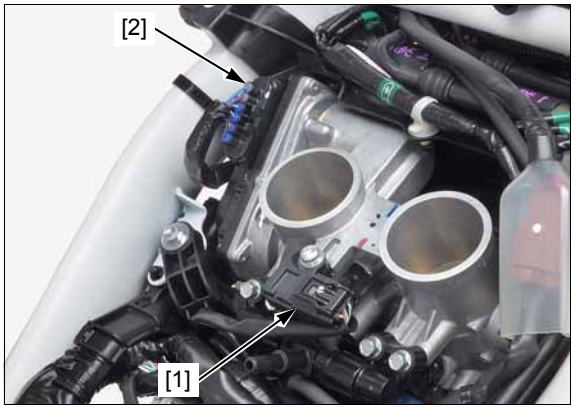
– Air cleaner housing (page 26-128)
– Tool box (page 26-199)

Disconnect the fuel feed hose (fuel rail side) (page 7-4).

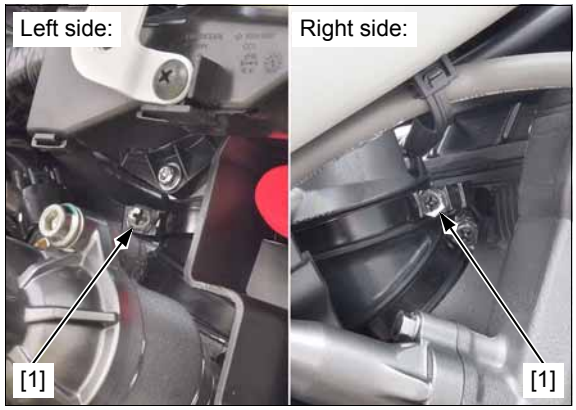
ED/KO/TH/FO/MA models: Disconnect the EVAP purge control solenoid valve-to-throttle body hose (page 25-58).

Disconnect the following:

– MAP sensor 3P (Black) connector [1]
– TBW unit 6P (Black) connector [2]



Loosen the band screws (throttle body side) [1].



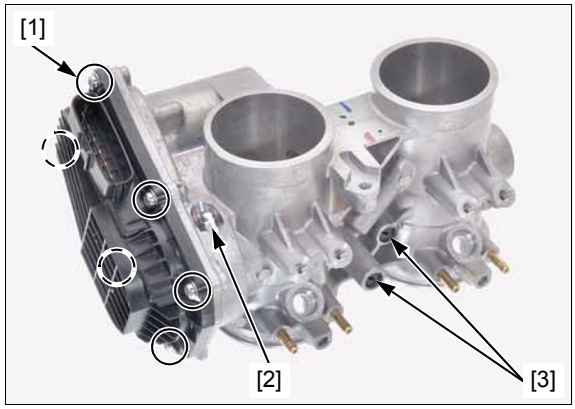
Disconnect the throttle body by pulling it upward.

Disconnect the following:

– Fuel injector 2P (Black) connector [1]
– Fuel injector 2P (Blue) connector [2]

NOTICE

- *Do not loosen or tighten the white painted screws [1], nut [2] and screws [3] of the throttle body. Loosening or tightening any of these can cause throttle valve and idle control failure.*



INSTALLATION

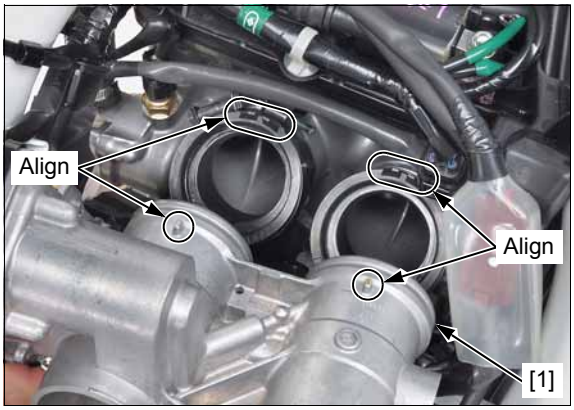
Connect the following:

– Fuel injector 2P (Black) connector [1]
– Fuel injector 2P (Blue) connector [2]

Install the throttle body [1].

NOTE:

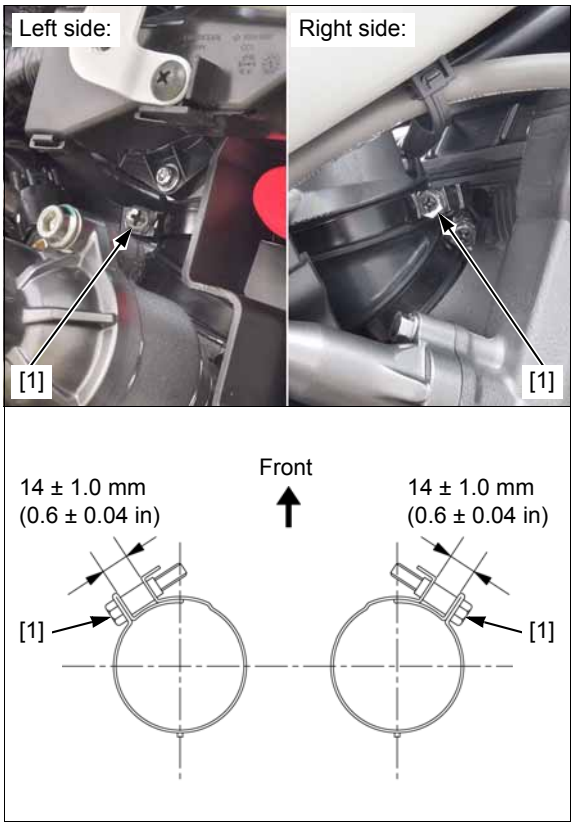
- Align the insulator grooves with the throttle body lugs.



Tighten the insulator band screws (throttle body side) [1] to the specified range as shown.

NOTE:

- Make sure that the insulator band screws (throttle body side) are in the position as shown.



Connect the following:

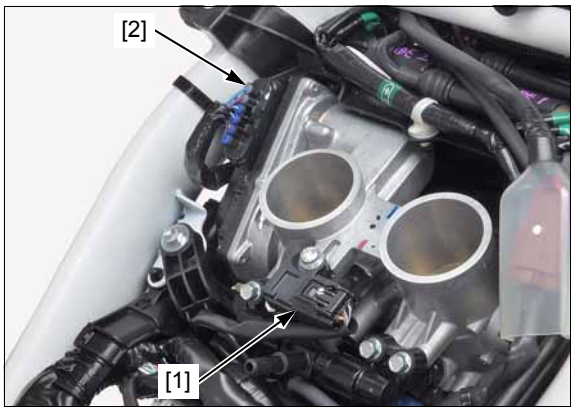
– MAP sensor 3P (Black) connector [1]
– TBW unit 6P (Black) connector [2]

Connect the fuel feed hose (fuel rail side) (page 7-4).

ED/KO/TH/FO/MA models: Connect the EVAP purge control solenoid valve-to-throttle body hose (page 25-58).

Install the following:

– Air cleaner housing (page 26-128)
– Tool box (page 26-199)



EVAP CANISTER (ED/KO/TH/FO/MA models)

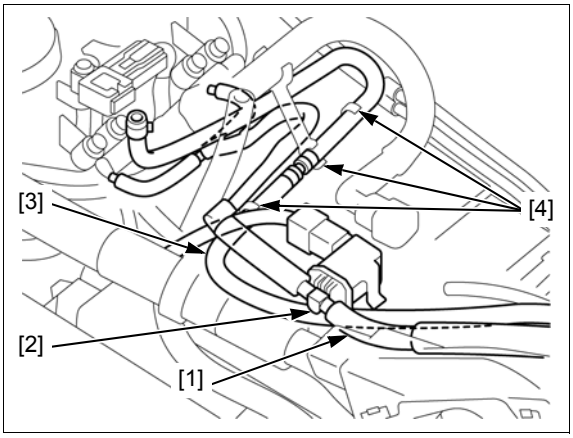
REMOVAL/INSTALLATION

Remove the following:

– Fuel tank (page 26-128)
– ETC tray (page 26-49)

Disconnect the EVAP canister-to-purge control solenoid valve hose [1] from the EVAP purge control solenoid valve [2].

Release the fuel tank-to-EVAP canister hose [3] from the clamps [4].

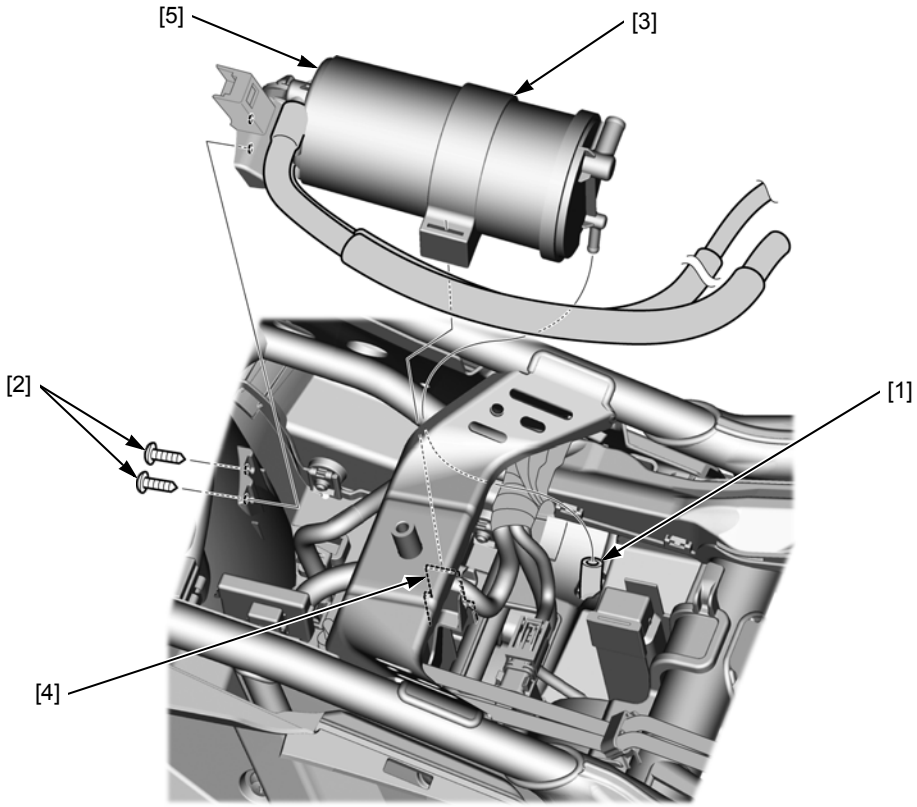


Disconnect the EVAP canister drain hose [1].

Remove the screws [2].

Release the band [3] from the rear fender B stay [4] by turning the EVAP canister [5].

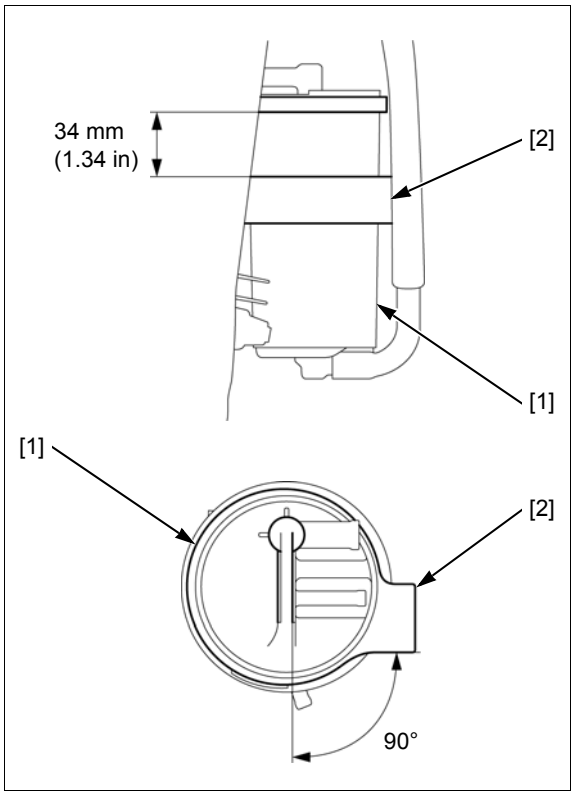
Remove the EVAP canister.



Installation is in the reverse order of removal.

NOTE:

- When installing the EVAP canister [1], check the canister mounting rubber [2] is correct position as shown.
- Route the hoses properly (page 26-17).



RADIATOR

REMOVAL/INSTALLATION

NOTE:

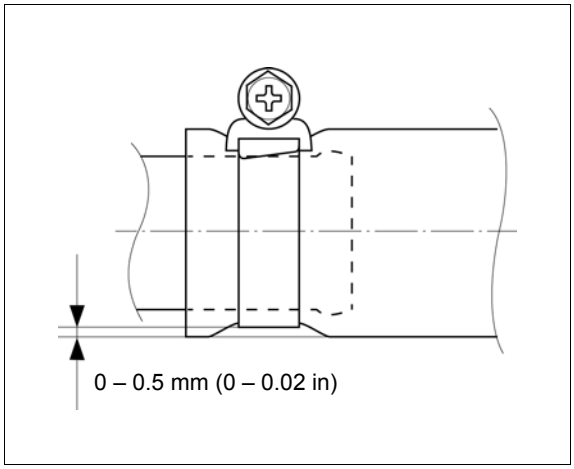
- For procedures not described below, refer to the Service Manual of 62MJP00 or 62MJP00Z.

Installation is in the reverse order of removal.

NOTE:

- Tighten the water hose band screws to the specified range as shown.
- Route the hoses and wires properly (page 26-17).

Fill the recommended coolant mixture to the filler neck and bleed the air (page 8-4).



RIGHT CRANKCASE COVER (CRF1000A2/AL2)

NOTE:

- For procedures not described below, refer to the Service Manual of 62MJP00 or 62MJP00Z.

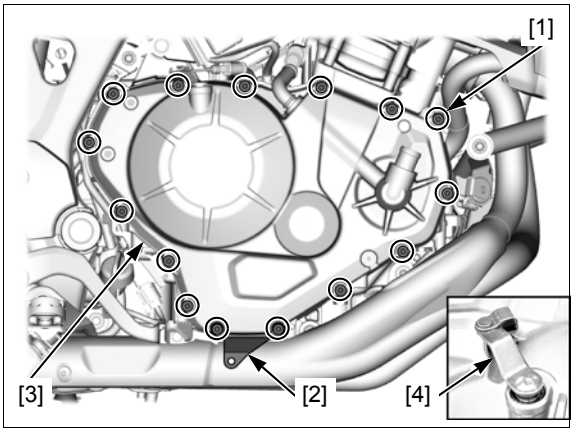
REMOVAL

Remove the bolts [1].

Remove the right skid plate bracket [2].

Be careful not to drop the return spring.

Remove the right crankcase cover [3] while turning the clutch lifter lever [4] counterclockwise to disengage the lifter lever slit from the clutch lifter pin.



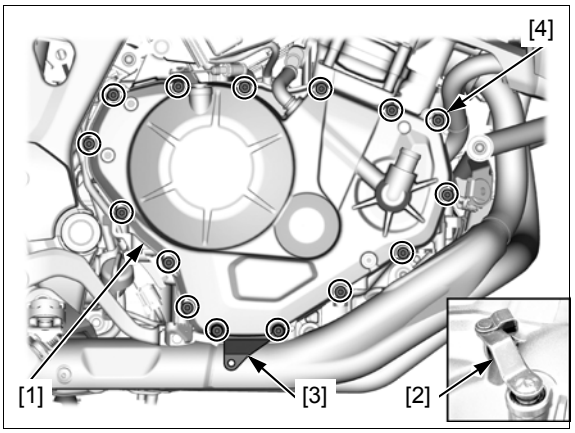
INSTALLATION

Install the right crankcase cover [1] by holding the clutch lifter lever [2].

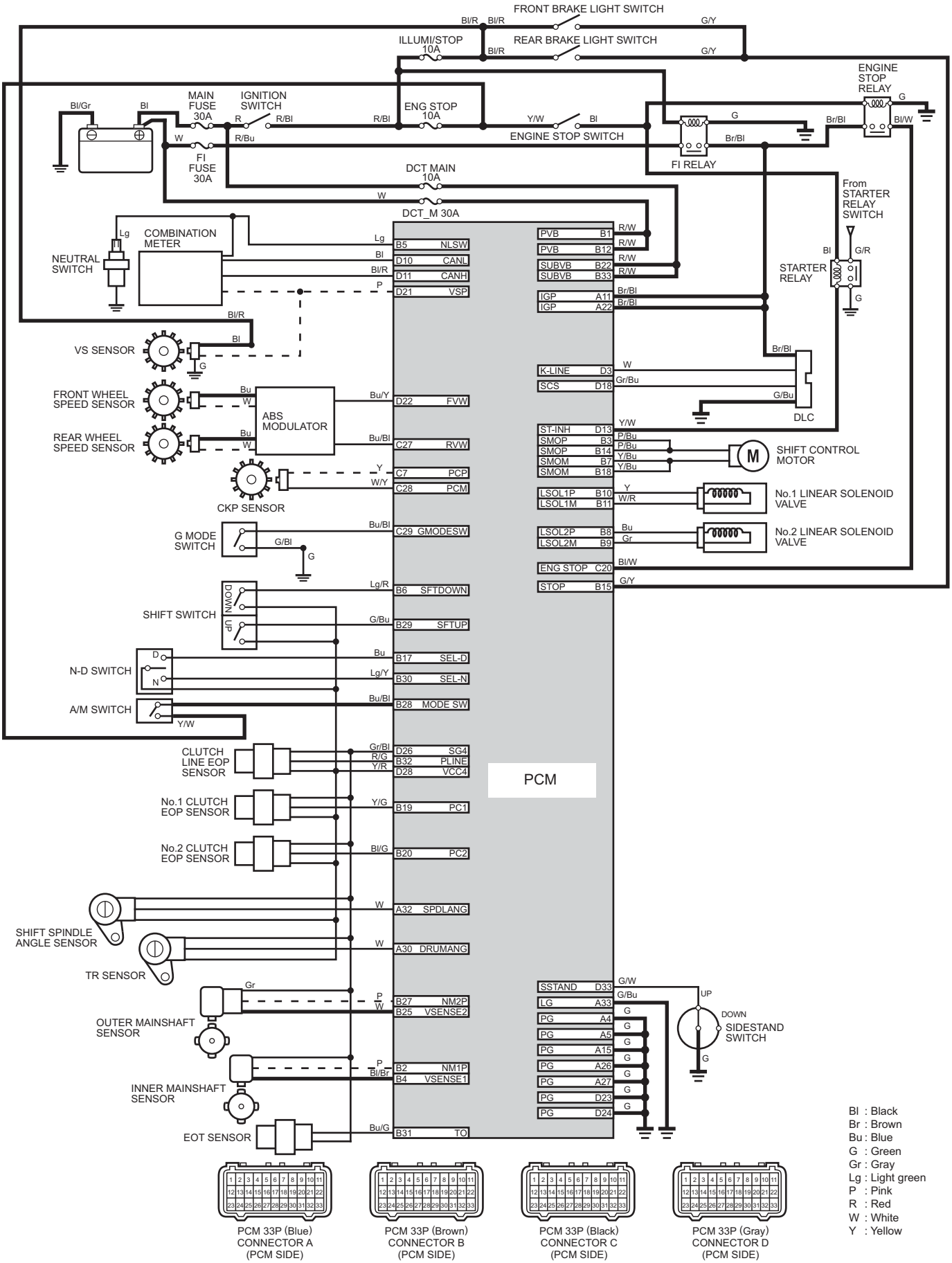
Install the right skid plate bracket [3].

Install the bolts [4] and tighten it in a crisscross pattern in 2 or 3 steps to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



DCT SYSTEM DIAGRAM



DCT DTC INDEX

- If the MCS is not used, perform all of the inspection on the corresponding main code (digits in front of hyphen) of the DTC.
- The DTCs related to emission control, have P code and if the PCM detects them, MIL illuminates simultaneously.

Honda code (DTC)	Function Failure	Symptom/Fail-safe function	Refer to page
1-1	Shift pedal angle sensor (Optional) malfunction • Shift pedal angle sensor or its circuit malfunction • DCT shift pedal (Optional) mechanism malfunction • Loose or poor contact of the shift pedal angle sensor connector • Faulty PCM	• DCT shift pedal (Optional) function does not work	26-140
7-1 (P0117)	ECT sensor circuit low voltage (less than 0.049 V) • ECT sensor or its circuit malfunction	• Hard start at a low temperature	26-73
7-2 (P0118)	ECT sensor circuit high voltage (more than 4.946 V) • Loose or poor contact of the ECT sensor connector • ECT sensor or its circuit malfunction	• Hard start at a low temperature	26-73
8-1	TP sensor low voltage • TP sensor 1 or its circuit malfunction • TP sensor 2 or its circuit malfunction	• Vehicle speed limit: approximately 120 km/h (75 mph) • HSTC does not operate	26-142
8-2	TP sensor high voltage • Loose or poor contact of the TP sensor 1 connector • Loose or poor contact of the TP sensor 2 connector • TP sensor 1 or its circuit malfunction • TP sensor 2 or its circuit malfunction	• Vehicle speed limit: approximately 120 km/h (75 mph) • HSTC does not operate	26-142
9-1	Clutch line EOP sensor low voltage (less than 0.298 V) • Clutch line EOP sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-142
9-2	Clutch line EOP sensor high voltage (more than 4.702 V) • Loose or poor contact of the clutch line EOP sensor connector • Clutch line EOP sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-143
11-1 (P0500)	VS sensor malfunction • Loose or poor contact of the VS sensor connector • VS sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not works	26-76
19-1	CKP sensor no signal • Loose or poor contact of the CKP sensor connector • Electromagnetic interference at CKP sensor • CKP sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not work • Engine does not operate	26-144
21-1 (P1708)	Shift spindle angle sensor low voltage (less than 0.308 V) • Loose or poor contact of the shift spindle angle sensor connector • Shift spindle angle sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-145
21-2 (P1709)	Shift spindle angle sensor high voltage (more than 4.976 V) • Shift spindle angle sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-147
22-1	Shift spindle operation malfunction (after operating gearshift mechanism) • Gearshift mechanism malfunction • Shift spindle angle sensor malfunction	• Gearshift function does not work	26-148
23-1	Shift spindle operation malfunction (while operating gearshift mechanism) • Gearshift mechanism malfunction • Shift spindle angle sensor malfunction	• Gearshift function does not work	26-149
24-1 (P170A)	Shift control motor drive circuit • Shift control motor or its circuit malfunction • Shift control motor drive circuit in the PCM malfunction	• Gearshift function does not work	26-150
27-1	Shift drum position malfunction • TR sensor malfunction • Gearshift mechanism malfunction • Faulty PCM	• Gearshift function does not work	26-151

Honda code (DTC)	Function Failure	Symptom/Fail-safe function	Refer to page
31-1 (P170B)	Shift control motor low voltage (less than 9.016 V) • Ignition hold relay circuit in the PCM malfunction • Blown fuse DCT M 30 A • Loose or poor contact of the PCM 33P (Blue) connector	• Gearshift function does not work	26-152
32-1	Fail safe relay circuit malfunction • PCM (DCT drive circuit) power input line malfunction • Blown fuse DCT M 30 A • Fail safe relay in the PCM malfunction	• Gearshift function does not work	26-153
37-1 (P0562)	Ignition hold relay malfunction • PCM (DCT drive circuit) sub power input line malfunction • Blown sub fuse DCT MAIN 10 A • Ignition hold relay in the PCM malfunction	• Gearshift function does not work	26-153
41-1	N-D switch malfunction • Loose or poor contact of the N-D switch connector • N-D switch or its circuit malfunction • Faulty PCM	• N-D switch does not work	26-154
42-1 (P0826)	Shift switch malfunction • Loose or poor contact of the shift switch connector • Shift switch or its circuit malfunction • Faulty PCM	• Shift switch does not work	26-155
44-1 (P0197)	EOT sensor low voltage (less than 0.088 V) • EOT sensor or its circuit malfunction • Faulty PCM	• Gearshift function works normally	26-157
44-2 (P0198)	EOT sensor high voltage (more than 4.903 V) • Loose or poor contact of the EOT sensor connector • EOT sensor or its circuit malfunction • Faulty PCM	• Gearshift function works normally	26-158
47-1 (P1704)	No.1 clutch EOP sensor low voltage (less than 0.298 V) • No.1 clutch EOP sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-159
47-2 (P1705)	No.1 clutch EOP sensor high voltage (more than 4.702 V) • Loose or poor contact of the No.1 clutch EOP sensor connector • No.1 clutch EOP sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-160
48-1 (P1706)	No.2 clutch EOP sensor low voltage (less than 0.298 V) • No.2 clutch EOP sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-159
48-2 (P1707)	No.2 clutch EOP sensor high voltage (more than 4.702 V) • Loose or poor contact of the No.2 clutch EOP sensor connector • No.2 clutch EOP sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-160
49-1	Clutch line low oil pressure (when clutch is engaged) • Engine oil level low • Faulty oil pump • Faulty clutch oil circuit • Clutch line EOP sensor malfunction • Faulty PCM	• Gearshift function does not work	26-161
49-2	Clutch line low oil pressure (when engine is running) • Engine oil level low • Faulty oil pump • Faulty clutch oil circuit • Clutch line EOP sensor malfunction • Faulty PCM	• Gearshift function does not work	26-161
51-1 (P1702)	TR sensor low voltage (less than 0.117 V) • Loose or poor contact of the TR sensor connector • TR sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-162
51-2 (P1703)	TR sensor high voltage (more than 4.976 V) • TR sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-164

Honda code (DTC)	Function Failure	Symptom/Fail-safe function	Refer to page
52-1	Neutral switch stuck OFF • Loose or poor contact of the neutral switch connector • Neutral switch or its circuit malfunction • Faulty PCM	• Gearshift function works normally • Shift indicator blinking	26-164
52-2	Neutral switch stuck ON • Neutral switch or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-165
53-1 (P0715)	Inner mainshaft speed low • Loose or poor contact of the inner mainshaft sensor connector • Inner mainshaft sensor or its circuit malfunction • Electromagnetic interference • Faulty PCM	• Gearshift function does not work	26-165
54-1 (P2765)	Outer mainshaft speed low • Loose or poor contact of the outer mainshaft sensor connector • Outer mainshaft sensor or its circuit malfunction • Electromagnetic interference • Faulty PCM	• Gearshift function does not work	26-168
55-1 (P0745)	No.1 linear solenoid valve current failure • Loose or poor contact of the No.1 linear solenoid valve connector • No.1 linear solenoid valve or its circuit malfunction • No.1 linear solenoid valve drive circuit in the PCM malfunction • Faulty PCM	• Gearshift function does not work	26-170
55-2 (P0745)	No.1 linear solenoid valve driver in the PCM failure • Loose or poor contact of the No.1 linear solenoid valve connector • Loose or poor contact of the PCM 33P connector • No.1 linear solenoid valve or its circuit malfunction • No.1 linear solenoid valve drive circuit in the PCM malfunction • Faulty PCM	• Gearshift function does not work	26-170
56-1 (P0775)	No.2 linear solenoid valve current failure • Loose or poor contact of the No.1 linear solenoid valve connector • No.2 linear solenoid valve or its circuit malfunction • No.2 linear solenoid valve drive circuit in the PCM malfunction • Faulty PCM	• Gearshift function does not work	26-171
56-2 (P0775)	No.2 linear solenoid valve driver in the PCM failure • Loose or poor contact of the No.2 linear solenoid valve connector • Loose or poor contact of the PCM 33P connector • No.2 linear solenoid valve or its circuit malfunction • No.2 linear solenoid valve drive circuit in the PCM malfunction • Faulty PCM	• Gearshift function does not work	26-171
57-1	Gearshift mechanism malfunction • Gearshift mechanism malfunction • TR sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-172
57-2	Gear position malfunction (jumps out of gear) • Gearshift mechanism malfunction • TR sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-172
58-1	No.1 clutch does not disengage (when shifting gear) • No.1 clutch sticking • Faulty clutch oil circuit	• Gearshift function does not work • Engine does not operate	26-172
59-1	No.2 clutch does not disengage (when shifting gear) • No.2 clutch sticking • Faulty clutch oil circuit	• Gearshift function does not work • Engine does not operate	26-172

Honda code (DTC)	Function Failure	Symptom/Fail-safe function	Refer to page
61-1	No.1 clutch oil pressure malfunction (at clutch initial diagnosis) • No.1 clutch EOP sensor malfunction • Faulty clutch oil circuit • Faulty PCM	• Gearshift function does not work	26-173
61-2	No.1 clutch no oil pressure • No.1 clutch EOP sensor malfunction • Faulty clutch oil circuit • No.1 linear solenoid valve or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-173
61-3	No.1 clutch oil pressure degradation • No.1 clutch EOP sensor malfunction • Faulty clutch oil circuit • No.1 linear solenoid valve malfunction • Faulty PCM	• Gearshift function does not work	26-173
61-4	No.1 clutch oil pressure canceling malfunction • No.1 clutch EOP sensor malfunction • Faulty clutch oil circuit • Loose or poor contact of the No.1 linear solenoid valve and clutch EOP sensor connectors • No.1 linear solenoid valve malfunction • Faulty PCM	• Gearshift function does not work • Engine does not operate	26-173
62-1	No.1 clutch oil pressure high • No.1 clutch EOP sensor malfunction • Faulty clutch oil circuit • No.1 linear solenoid valve malfunction • Faulty PCM	• Gearshift function does not work	26-173
62-2	No.1 clutch oil pressure high (Prevention of motorcycle creeps) • No.1 clutch EOP sensor malfunction • Faulty clutch oil circuit • No.1 linear solenoid valve malfunction • Faulty PCM	• Gearshift function does not work	26-173
63-1	No.2 clutch oil pressure malfunction (at clutch initial diagnosis) • No.2 clutch EOP sensor malfunction • Faulty clutch oil circuit • Faulty PCM	• Gearshift function does not work	26-174
63-2	No.2 clutch no oil pressure • No.2 clutch EOP sensor malfunction • Faulty clutch oil circuit • No.2 linear solenoid valve or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-174
63-3	No.2 clutch oil pressure degradation • No.2 clutch EOP sensor malfunction • Faulty clutch oil circuit • No.2 linear solenoid valve malfunction • Faulty PCM	• Gearshift function does not work	26-174
63-4	No.2 clutch oil pressure canceling malfunction • No.2 clutch EOP sensor malfunction • Faulty clutch oil circuit • Loose or poor contact of the No.2 linear solenoid valve and clutch EOP sensor connectors • No.2 linear solenoid valve or its circuit malfunction • Faulty PCM	• Gearshift function does not work • Engine does not operate	26-174
64-1	No.2 clutch oil pressure high • No.2 clutch EOP sensor malfunction • Faulty clutch oil circuit • No.2 linear solenoid valve malfunction • Faulty PCM	• Gearshift function does not work	26-174
64-2	No.2 clutch oil pressure high (Prevention of motorcycle creeps) • No.2 clutch EOP sensor malfunction • Faulty clutch oil circuit • No.2 linear solenoid valve malfunction • Faulty PCM	• Gearshift function does not work	26-174

Honda code (DTC)	Function Failure	Symptom/Fail-safe function	Refer to page
65-1 (P170C)	Front and rear wheel speed signal malfunction • Front wheel speed sensor or its circuit malfunction • VS sensor or its circuit malfunction • Faulty ABS modulator • Faulty PCM	• Gearshift function does not work	26-174
66-1 (P2158)	Rear wheel speed sensor no signal • Rear wheel speed sensor or its circuit malfunction • Loose or poor contact of the rear wheel speed sensor connector • Electromagnetic interference at rear wheel speed sensor • Faulty ABS modulator • Faulty rear pulser ring • Faulty PCM	• Gearshift function does not work	26-87
67-1 (P1500)	Front wheel speed sensor no signal • Front wheel speed sensor or its circuit malfunction • Loose or poor contact of the front wheel speed sensor connector • Electromagnetic interference at front wheel speed sensor • Faulty ABS modulator • Faulty front pulser ring • Faulty PCM	• Gearshift function does not work	26-88
68-1	No.1 clutch operation malfunction (clutch slips) • VS sensor malfunction • Faulty No.1 clutch • Faulty PCM	• Gearshift function does not work	26-175
69-1	No.2 clutch operation malfunction (clutch slips) • VS sensor malfunction • Faulty No.2 clutch • Faulty PCM	• Gearshift function does not work	26-176
71-1 (P1700)	Inner mainshaft/countershaft speed ratio failure • VS sensor or its circuit malfunction • Inner mainshaft sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-176
72-1 (P1701)	Outer mainshaft/countershaft speed ratio failure • VS sensor or its circuit malfunction • Outer mainshaft sensor or its circuit malfunction • Faulty PCM	• Gearshift function does not work	26-176
84-1 (P0606)	CPU in the PCM malfunction • Faulty PCM	• Gearshift system stops	26-176
91-1 (P0351)	No.1-1 (No.1 cylinder main) ignition coil circuit malfunction • Loose or poor contact of the ignition coil connector • Ignition coil or its circuit malfunction	• No.1 Injector and main ignition coil shut down	26-108
92-1 (P0352)	No.2-1 (No.2 cylinder main) ignition coil circuit malfunction • Loose or poor contact of the ignition coil connector • Ignition coil or its circuit malfunction	• No.2 Injector and main ignition coil shut down	26-108
93-1 (P0353)	No.1-2 (No.1 cylinder sub) ignition coil circuit malfunction • Loose or poor contact of the ignition coil connector • Ignition coil or its circuit malfunction	• No.1 Injector and sub ignition coil shut down	26-108
94-1 (P0354)	No.2-2 (No.2 cylinder sub) ignition coil circuit malfunction • Loose or poor contact of the ignition coil connector • Ignition coil or its circuit malfunction	• No.2 Injector and sub ignition coil shut down	26-108
103-1 (U0001)	CAN communication malfunction • PCM failure • Combination meter failure • CAN communication circuit malfunction	• Engine operates normally • HSTC does not operate	26-110

DCT DTC TROUBLESHOOTING

NOTE:

- If the PCM is replaced, perform the following:
  – Key Registration Procedure (page 23-3)
  – Clutch Initialize Learning Procedure (page 13-82)

DTC 1-1 (SHIFT PEDAL ANGLE SENSOR (OPTIONAL) MALFUNCTION)

1. Recheck the DTC

Erase the DTCs (page 25-25).
Turn the ignition switch ON and engine stop switch "".
Operate the DCT shift pedal up and down several times with the engine stopped.
Recheck the DTC with the MCS or GST.

Is the DTC 1-1 indicated?

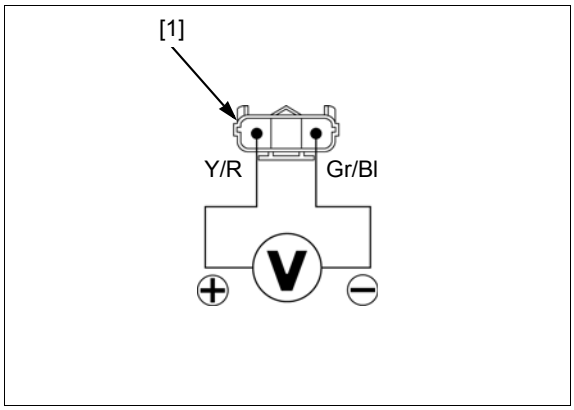
YES – GO TO STEP 2.

NO – Intermittent failure

2. Shift Pedal Angle Sensor Input Voltage Inspection

Turn the ignition switch OFF.
Disconnect the shift pedal angle sensor 3P (Black) connector [1].
Turn the ignition switch ON and engine stop switch "".
Measure the voltage between the wire harness side shift pedal angle sensor 3P (Black) connector terminals.

Connection: Yellow/red (+) – Gray/black (–)



Is the voltage within 4.75 – 5.25 V?

YES – GO TO STEP 4.

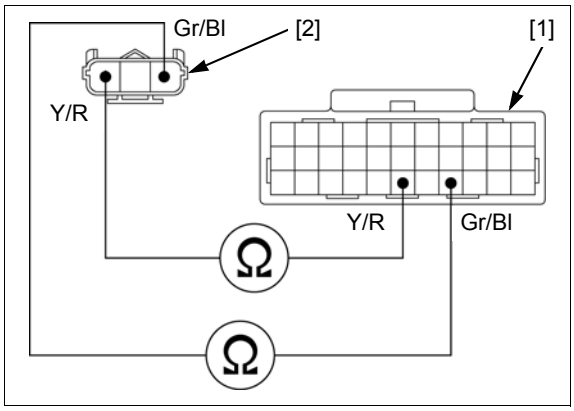
NO – GO TO STEP 3.

3. Shift Pedal Angle Sensor Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Gray) connector [1] (page 4-39).
Check for continuity between the wire harness side shift pedal angle sensor 3P (Black) connector [2] and PCM 33P (Gray) connector terminals.

TOOL:
Test probe 07ZAJ-RDJA110

Connection: Yellow/red – Yellow/red
Gray/black – Gray/black



Is there continuity?

YES – Replace the PCM with a known good one, and recheck (page 4-39).

NO – • Open circuit in Yellow/red wire
• Open circuit in Gray/black wire

4. Shift Pedal Angle Sensor Output Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Brown) connector [1] (page 4-39).
Check for continuity between the wire harness side shift pedal angle sensor 3P (Black) connector [2] and PCM 33P (Brown) connector terminals.

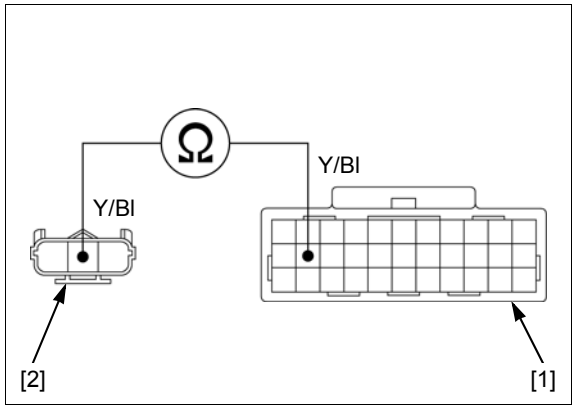
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Yellow/black – Yellow/black

Is there continuity?

YES – GO TO STEP 5.

NO – Open circuit in Yellow/black wire



5. Shift Pedal Angle Sensor Output Line Short Circuit Inspection

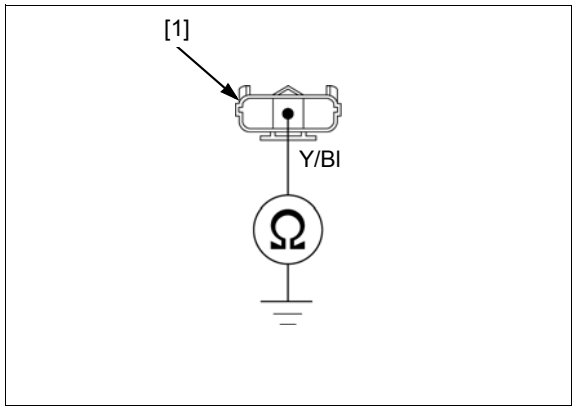
Check for continuity between the wire harness side shift pedal angle sensor 3P (Black) connector [1] and ground.

Connection: Yellow/black – Ground

Is there continuity?

YES – Short circuit in Yellow/black wire.

NO – GO TO STEP 6.



6. Shift Pedal Angle Sensor Resistance Inspection

Measure the resistance at the sensor side shift pedal angle sensor 3P (Black) connector [1] terminals.

Connection: Yellow/red – Blue/green
Standard: 4 – 6 kΩ (20°C/68°F)

Operate the DCT shift pedal to check that the resistance changes in accordance with the pedal operation.

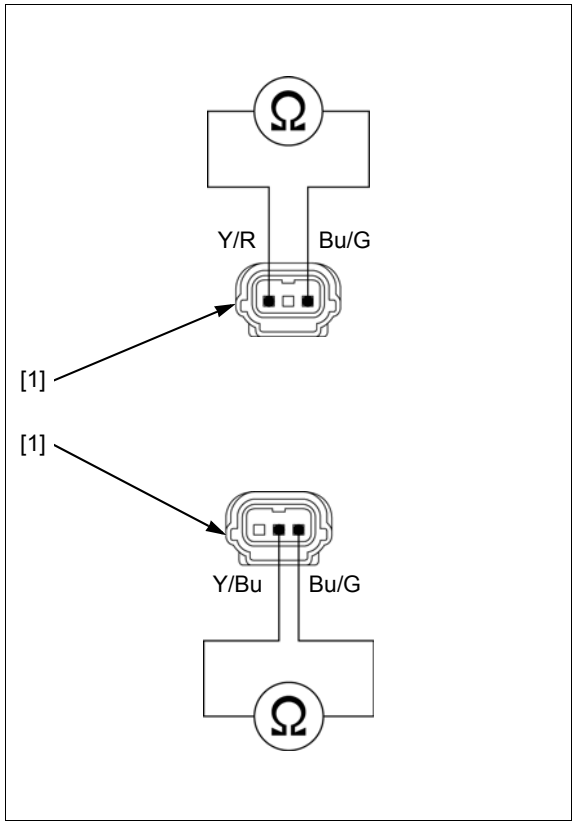
Connection: Yellow/blue – Blue/green

When moving the pedal up:
Resistance increases
When moving the pedal down:
Resistance decreases

Are the resistance inspections normal?

YES – Replace the PCM with a known good one, and recheck (page 4-39).

NO – Faulty shift pedal angle sensor, replace the DCT shift pedal as an assembly.



DTC 8-1 (TP SENSOR LOW VOLTAGE)

Refer to PGM-FI DTC P0122 (page 26-89).

DTC 8-2 (TP SENSOR HIGH VOLTAGE)

Refer to PGM-FI DTC P0123 (page 26-90).

DTC 9-1 (CLUTCH LINE EOP SENSOR LOW VOLTAGE)

1. **Clutch line EOP Sensor System Inspection**

   Connect the MCS or GST and start the engine.
   Check the clutch line EOP sensor with the MCS or GST.

   Is about 0 V indicated?

   YES – GO TO STEP 2.

   NO – Intermittent failure

2. **Clutch Line EOP Sensor Inspection**

   Stop the engine.
   Disconnect the clutch line EOP sensor 3P (Gray) connector (page 13-80).
   Turn the ignition switch ON.
   Check the clutch line EOP sensor with the MCS or GST.

   Is about 0 V indicated?

   YES – GO TO STEP 3.

   NO – Faulty clutch line EOP sensor

3. **Clutch Line EOP Sensor Input Voltage Inspection**

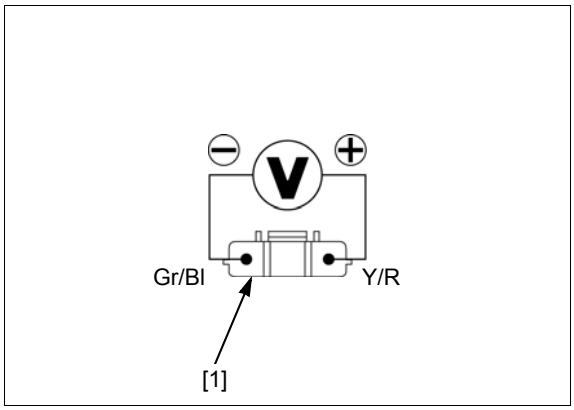
   Measure the voltage between the wire harness side 3P connector [1].

   Connection: Yellow/red (+) – Gray/black (–)

   Is the voltage within 4.75 – 5.25 V?

   YES – GO TO STEP 5.

   NO – GO TO STEP 4.



4. **Clutch Line EOP Sensor Input Line Open Circuit Inspection**

   Turn the ignition switch OFF.
   Disconnect the PCM 33P (Gray) connector (page 4-39).
   Check for continuity between the wire harness side 3P connector [1] and 33P (Gray) connector [2].

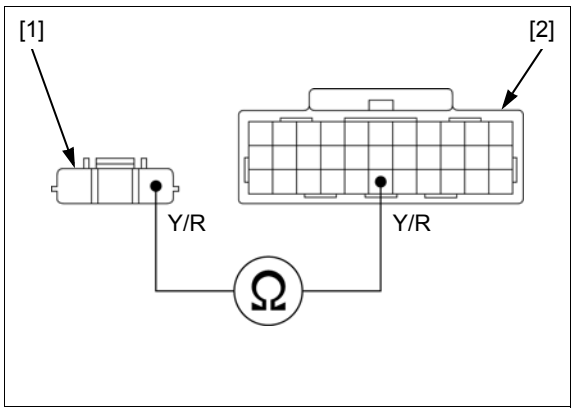
   TOOL:
   Test probe **07ZAJ-RDJA110**

   Connection: Yellow/red – Yellow/red

   Is there continuity?

   YES – Replace the PCM with a known good one and recheck (page 4-39).

   NO – Open circuit in the Yellow/red wire



5. Clutch Line EOP Sensor Output Line Short Circuit Inspection

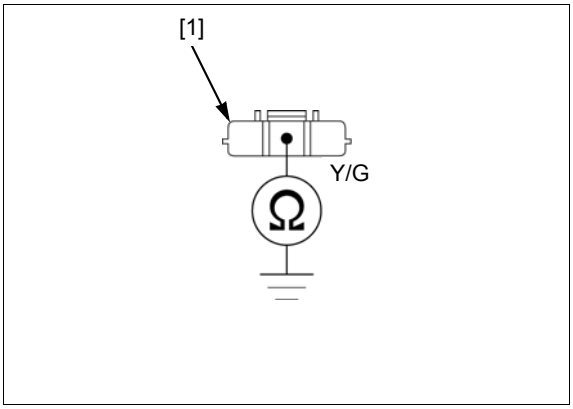
Turn the ignition switch OFF.
Disconnect the PCM 33P (Brown) connector (page 4-39).
Check for continuity between the wire harness side sensor 3P connector [1] and ground.

Connection: Yellow/green – Ground

Is there continuity?

YES – Short circuit in the Yellow/green wire

NO – Replace the PCM with a known good one and recheck (page 4-39).



DTC 9-2 (CLUTCH LINE EOP SENSOR HIGH VOLTAGE)

NOTE:

- Before starting the inspection, check for loose or poor contact on the clutch line EOP sensor 3P (Gray), and PCM 33P (Brown) and 33P (Gray) connectors, and recheck the DTC.

1. Clutch line EOP Sensor System Inspection

Check the clutch line EOP sensor with the MCS or GST.

Is about 5 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. Clutch Line EOP Sensor Inspection

Turn the ignition switch OFF.
Disconnect the clutch line EOP sensor 3P connector (page 13-80).
Short the wire harness side 3P connector [1] terminals with a jumper wire [2].

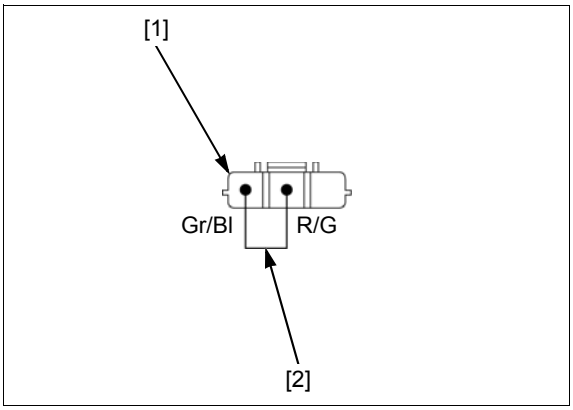
Connection: Red/green – Gray/black

Turn the ignition switch ON.
Check the clutch line EOP sensor with the MCS or GST.

Is about 0 V indicated?

YES – Faulty clutch line EOP sensor

NO – GO TO STEP 3.



3. Clutch Line EOP Sensor Ground Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side clutch line EOP sensor 3P connector [1] and PCM 33P (Gray) connector [2].

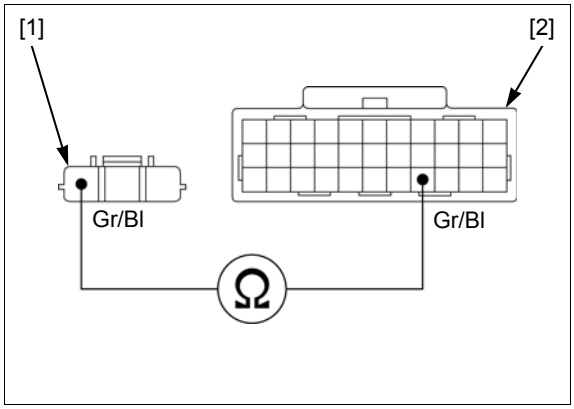
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Gray/black – Gray/black

Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Gray/black wire



4. Clutch Line EOP Sensor Output Line Open Circuit Inspection

Disconnect the PCM 33P (Brown) connector (page 4-39).
Check for continuity between the wire harness side clutch line EOP sensor 3P connector [1] and 33P (Brown) connector [2].

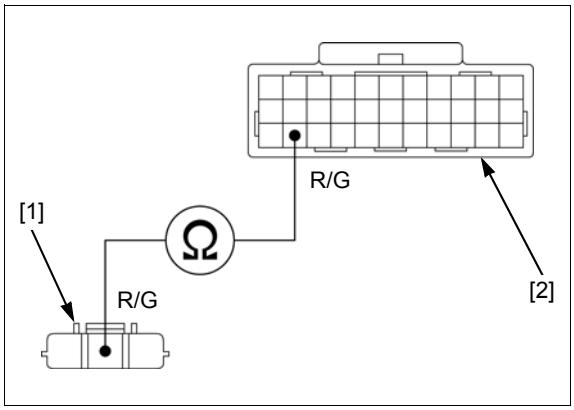
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Red/green – Red/green

Is there continuity?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Open circuit in the Red/green wire



DTC 19-1 (CKP SENSOR NO SIGNAL)

1. CKP sensor Peak Voltage Inspection

Disconnect the alternator assembly 6P (Black) connector (page 14-4).
Temporarily connect the battery cables.
Turn the ignition switch ON with the engine stop switch "○".
Crank the engine with the starter motor and measure the CKP sensor peak voltage at the CKP sensor side 6P (Black) connector [1].

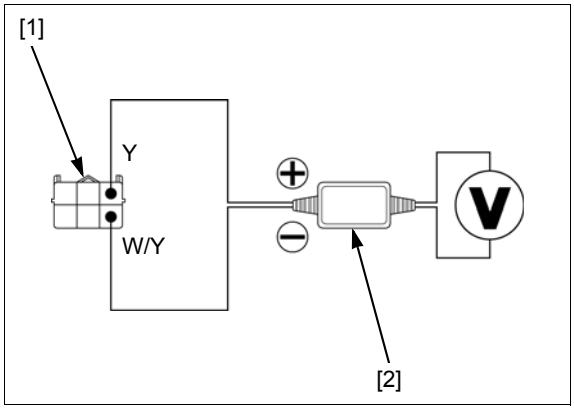
TOOLS:
Peak voltage adaptor [2] 07HGJ-0020100
with commercially available digital multimeter (impedance 10 MΩ/DCV minimum)

Connection: Yellow (+) – White/yellow (–)

Is the voltage more than 0.7 V?

YES – GO TO STEP 2.

NO – Faulty CKP sensor

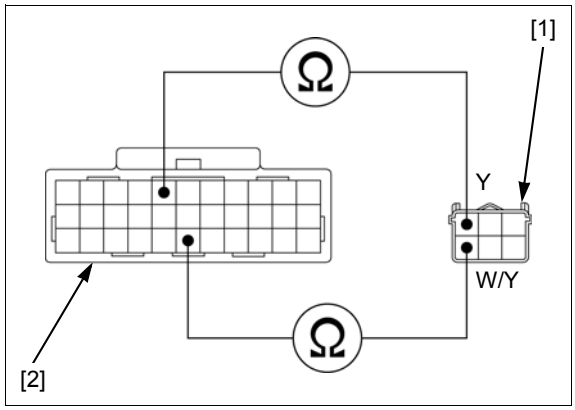


2. CKP sensor Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Black) connector (page 4-39).
Check for continuity between the wire harness side 6P (Black) connector [1] and 33P (Black) connector [2].

TOOL:
Test probe 07ZAJ-RDJA110

Connection: Yellow – Yellow
White/yellow – White/yellow



Is there continuity?

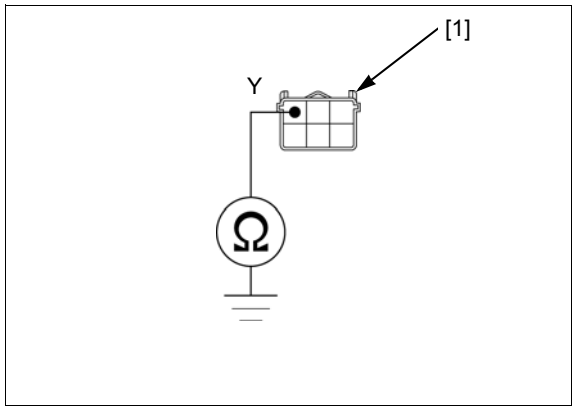
YES – GO TO STEP 3.

NO – • Open circuit in the Yellow wire
• Open circuit in the White/yellow wire

3. CKP sensor Line Short Circuit Inspection

Check for continuity between the wire harness side 6P (Black) connector [1] and ground

Connection: Yellow – Ground



Is there continuity?

YES – Short circuit in the Yellow wire

NO – Replace the PCM with a known good one and recheck (page 4-39).

DTC 21-1 (P1708) (SHIFT SPINDLE ANGLE SENSOR LOW VOLTAGE)

NOTE:
- Before starting the inspection, check for loose or poor contact on the shift spindle angle sensor 3P (Blue), PCM 33P (Black) and 33P (Gray) connectors, and recheck the DTC.

1. Shift Spindle Angle Sensor System Inspection

Check the shift spindle angle sensor with the MCS or GST.

Is about 0 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. Shift Spindle Angle Sensor Input Voltage Inspection

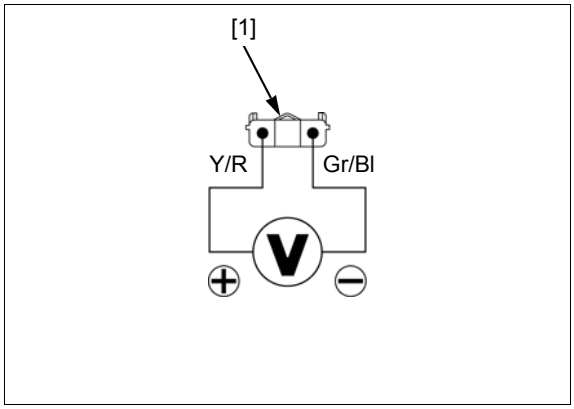
Turn the ignition switch OFF.
Disconnect the shift spindle angle sensor 3P (Blue) connector (page 13-79).
Turn the ignition switch ON.
Measure the voltage at the wire harness side 3P (Black) connector [1].

Connection: Yellow/red (+) – Gray/black (–)

Is the voltage within 4.75 – 5.25 V?

YES – GO TO STEP 5.

NO – GO TO STEP 3.



3. Shift Spindle Angle Sensor Input Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 3P (Black) connector [1] and 33P (Gray) connector [2].

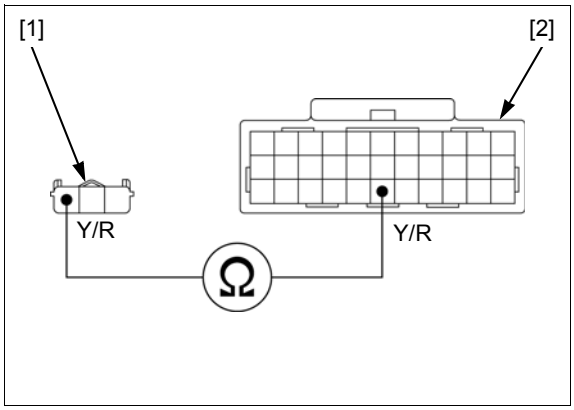
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Yellow/red – Yellow/red

Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Yellow/red wire



4. Shift Spindle Angle Sensor Ground Line Open Circuit Inspection

Check for continuity between the wire harness side 3P (Black) connector [1] and 33P (Gray) connector [2].

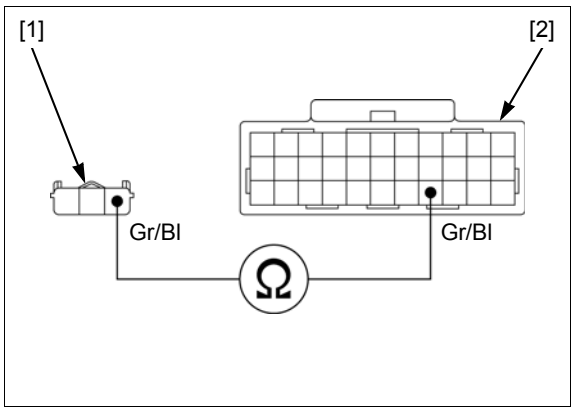
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Gray/black – Gray/black

Is there continuity?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Open circuit in the Gray/black wire



5. Shift Spindle Angle Sensor Signal Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Blue) connector (page 4-39).
Check for continuity between the wire harness side 3P (Blue) connector [1] and 33P (Blue) connector [2].

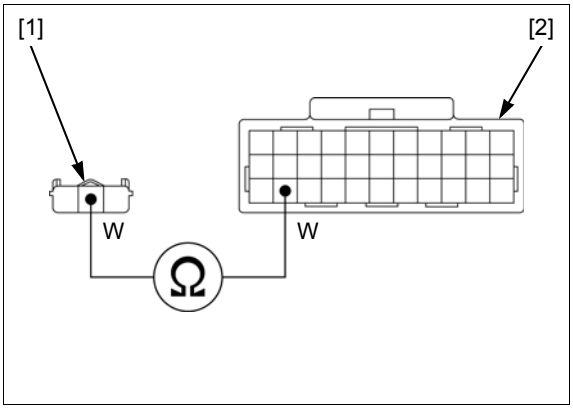
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: White – White

Is there continuity?

YES – GO TO STEP 6.

NO – Open circuit in the White wire



6. Shift Spindle Angle Sensor Output Line Short Circuit Inspection

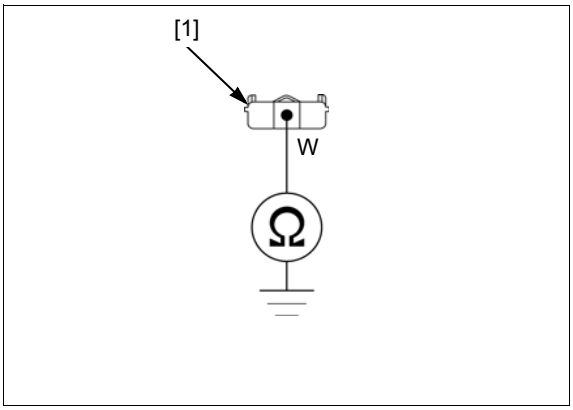
Check for continuity between the wire harness side 3P (Blue) connector [1] and ground.

Connection: White – Ground

Is there continuity?

YES – Short circuit in the White wire

NO – GO TO STEP 7.



7. Shift Spindle Angle Sensor Inspection

Replace the shift spindle angle sensor with a known good one (page 13-79).
Connect the 3P (Blue) connector, 33P (Blue) connector and 33P (Gray) connector.
Check the shift spindle angle sensor with the MCS or GST.

Is about 0 V indicated?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Faulty original shift spindle angle sensor

DTC 21-2 (P1709) (SHIFT SPINDLE ANGLE SENSOR HIGH VOLTAGE)

1. Shift Spindle Angle Sensor System Inspection

Check the shift spindle angle sensor with the MCS or GST.

Is about 5 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. Shift Spindle Angle Sensor Inspection

Replace the shift spindle angle sensor with a known good one (page 13-79).
Check the shift spindle angle sensor with the MCS or GST.

Is about 5 V indicated?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Faulty original shift spindle angle sensor

DTC 22-1 (SHIFT SPINDLE OPERATION MALFUNCTION: AFTER OPERATING GEARSHIFT MECHANISM)

1. Shift Spindle Angle Sensor System Inspection

Check the shift spindle angle sensor with the MCS.

Is Low voltage (about 0 V) or High voltage (about 5 V) indicated?

YES – • About 0 V: See DTC 21-1 (page 26-145).
• About 5 V: See DTC 21-2 (page 26-147).

NO – GO TO STEP 2.

2. Shift Control Motor/Reduction Gear Condition

Check the shift control motor and reduction gears are installed properly and are not damaged (page 13-71).

Are the shift control motor and reduction gears in normal condition?

YES – GO TO STEP 3.

NO – Install the shift control motor and reduction gears properly or replace faulty parts.

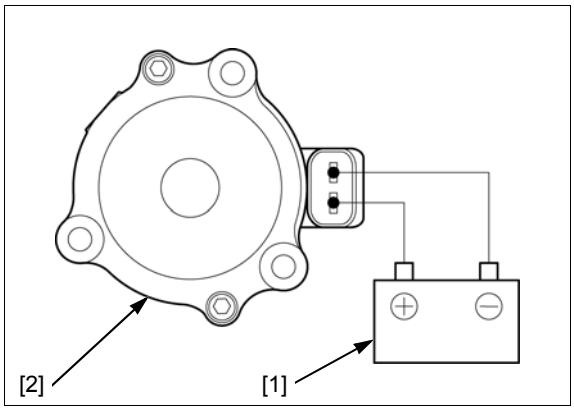
3. Shift Control Motor Inspection

Remove the shift control motor (page 13-71).
Connect a fully charged 12 V battery [1] to the shift control motor [2] 2P connector to check the motor operation.
Change the battery connection to check the reverse operation.

Does the shift control motor turn in both directions?

YES – GO TO STEP 4.

NO – Faulty shift control motor



4. Shift Spindle Angle Sensor System Inspection

Remove the shift spindle angle sensor with the connector connected (page 13-79).
Turn the ignition switch ON.
While turning the shift spindle angle sensor shaft, check the shift spindle angle sensor voltage with the MCS.

When turning the shaft clockwise:
Voltage increase
When turning the shaft counterclockwise:
Voltage decrease

Does the voltage vary properly?

YES – GO TO STEP 5.

NO – Faulty shift spindle angle sensor

5. Shift Spindle Angle Sensor Condition Inspection

Check that the shift spindle angle sensor is installed properly and is not damaged.

Is the shift spindle angle sensor in normal condition?

YES – GO TO STEP 6.

NO – Install the shift spindle angle sensor properly or replace it (page 13-79).

6. DTC Recheck

Recheck the DTC with the MCS.

Is DTC 22-1 indicated?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Intermittent failure

DTC 23-1 (SHIFT SPINDLE OPERATION MALFUNCTION: WHILE OPERATING GEARSHIFT MECHANISM)

Refer to DTC 22-1 (page 26-148).

DTC 24-1 (SHIFT CONTROL MOTOR DRIVE CIRCUIT)

1. Shift Control Motor Line Open Circuit Inspection

Disconnect the following:

– PCM 33P (Brown) connector (page 4-39)
– Shift control motor 2P (Black) connector (page 13-71)

Check for continuity between the wire harness side 2P (Black) connector [1] and PCM 33P (Brown) connector [2].

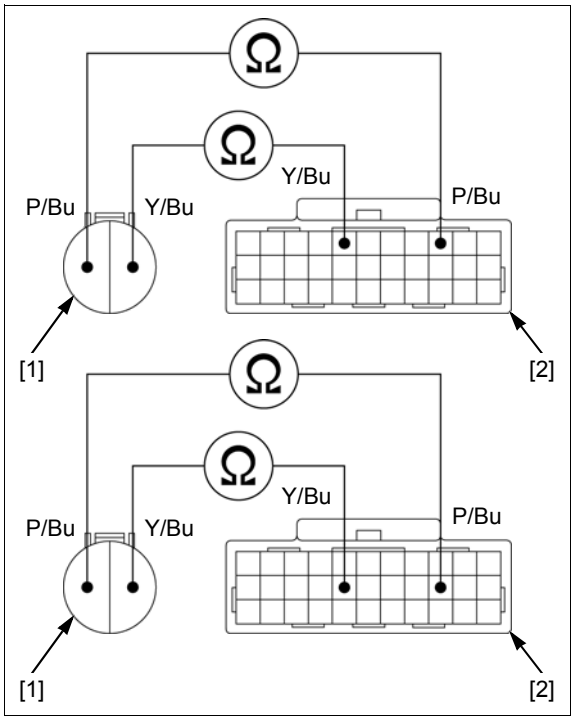
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Pink/blue – Pink/blue
Pink/blue – Pink/blue
Yellow/blue – Yellow/blue
Yellow/blue – Yellow/blue

Is there continuity?

YES – GO TO STEP 2.

NO –
- Open circuit in the Pink/blue wire
- Open circuit in the Yellow/blue wire



2. Shift Control Motor Line Short Circuit Inspection

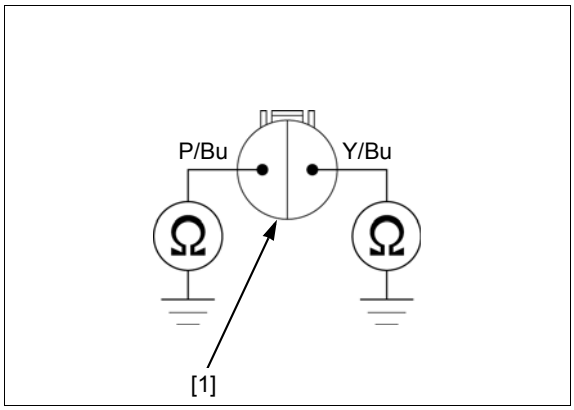
Check for continuity at the wire harness side shift control motor 2P (Black) connector [1] terminals and ground.

Connection: Pink/blue – Ground
Yellow/blue – Ground

Is there continuity?

YES –
- Short circuit in the Pink/blue wire
- Short circuit in the Yellow/blue wire

NO – GO TO STEP 3.



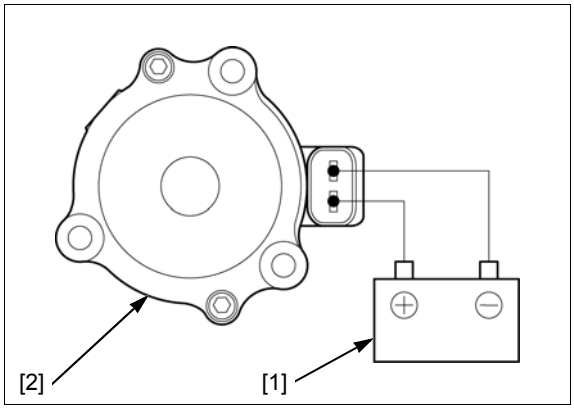
3. Shift Control Motor Inspection

Remove the shift control motor (page 13-71).
Connect a fully charged 12 V battery [1] to the shift control motor [2] 2P connector to check the motor operation.
Change the battery connection to check the reverse operation.

Does the shift control motor turn in both directions?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Faulty shift control motor



DTC 27-1 (SHIFT DRUM POSITION MALFUNCTION)

1. TR Sensor System Inspection

Check the TR sensor with the MCS or GST.

Is Low voltage (about 0 V) or High voltage (about 5 V) indicated?

YES – • About 0 V:
See DTC 51-1 (P1702) (page 26-162).
• About 5 V:
See DTC 51-2 (P1703) (page 26-164).

NO – GO TO STEP 2.

2. Shift Control Motor/Reduction gear condition

Check the shift control motor and reduction gears are installed properly and are not damaged (page 13-71).

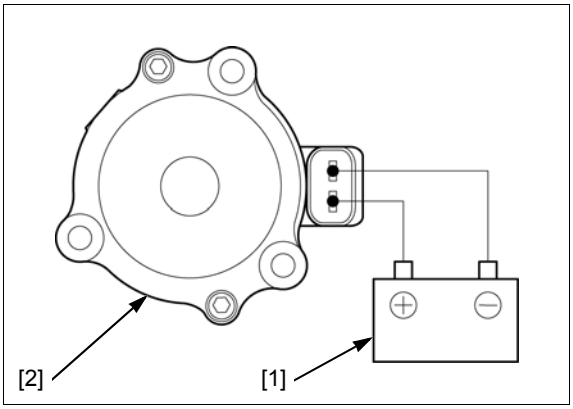
Are the shift control motor and reduction gears in normal condition?

YES – GO TO STEP 3.

NO – Install the shift control motor and reduction gears properly or replace faulty parts.

3. Shift Control Motor Inspection

Remove the shift control motor (page 13-71).
Connect a fully charged 12 V battery [1] to the shift control motor [2] 2P connector to check the motor operation.
Change the battery connection to check the reverse operation.



Does the shift control motor turn in both directions?

YES – GO TO STEP 4.

NO – Faulty shift control motor

4. TR Sensor System Inspection

Remove the TR sensor with the connector connected (page 13-79).
Turn the ignition switch ON.
While turning the TR sensor shaft, check the TR sensor voltage with the MCS.

When turning the shaft clockwise:
Voltage increase
When turning the shaft counterclockwise:
Voltage decrease

Does the voltage vary properly?

YES – GO TO STEP 5.

NO – Faulty TR sensor

5. TR Sensor Condition Inspection

Check that the TR sensor is installed properly and is not damaged.

Is the TR sensor in normal condition?

YES – GO TO STEP 6.

NO – Install the TR sensor properly or replace it (page 13-79).

6. DTC Recheck

Recheck the DTC with the MCS.

Is DTC 27-1 indicated?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Intermittent failure

DTC 31-1 (P170B) (SHIFT CONTROL MOTOR LOW VOLTAGE)

NOTE:

- Before starting the inspection, check for loose or poor contact on the shift control motor 2P (Black) and PCM 33P (Brown) connectors, and recheck the DTC.

1. DTC Recheck

Erase the DTCs (page 25-60).
Check the DTC with the MCS or GST.

Is DTC 32-1 or 37-1 indicated?

YES – • DTC 32-1 indicated (page 26-153).
• DTC 37-1 (P0562) indicated (page 26-153).

NO – GO TO STEP 2.

2. Shift Control Motor Line Open Circuit Inspection

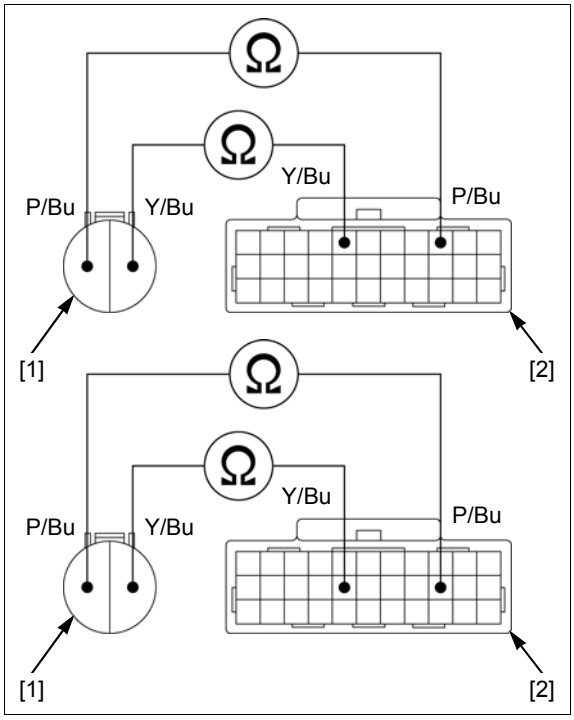
Disconnect the following:

– PCM 33P (Brown) connector (page 4-39)
– Shift control motor 2P (Black) connector (page 13-71)

Check for continuity between the wire harness side 2P (Black) connector [1] and PCM 33P (Brown) connector [2].

TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Pink/blue – Pink/blue
Pink/blue – Pink/blue
Yellow/blue – Yellow/blue
Yellow/blue – Yellow/blue



Is there continuity?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – • Open circuit in the Pink/blue wire
• Open circuit in the Yellow/blue wire

DTC 32-1 (FAIL SAFE RELAY CIRCUIT MALFUNCTION)

NOTE:

- Before starting the inspection, check for loose or poor contact on the PCM 33P (Brown) connector, and recheck the DTC.

1. **Shift Control Motor Power Supply Voltage Inspection**

   Check the shift control motor power supply voltage with the MCS.

   Is there battery voltage?

   YES – GO TO STEP 2.

   NO – • Open circuit in the Red/white wire between the PCM 33P (Brown) connector and fuse DCT M 30 A
   • Blown fuse DCT M 30 A

2. **DTC Recheck**

   Recheck the DTC with the MCS.

   Is DTC 32-1 indicated?

   YES – Replace the PCM with a known good one and recheck (page 4-39).

   NO – Intermittent failure

DTC 37-1 (P0562) (IGNITION HOLD RELAY MALFUNCTION)

NOTE:

- Before starting the inspection, check for loose or poor contact on the PCM 33P (Brown) connector, and recheck the DTC.

1. **PCM (DCT Drive Circuit) Sub Power Voltage Inspection**

   Check the PCM sub power voltage with the MCS or GST.

   Is the battery voltage indicated?

   YES – GO TO STEP 2.

   NO – • Open circuit in the Red/white wire between the PCM 33P (Brown) connector and fuse box
   • Blown sub fuse DCT MAIN 10 A

2. **DTC Recheck**

   Recheck the DTC with the MCS or GST.

   Is DTC 37-1 (P0562) indicated?

   YES – Replace the PCM with a known good one and recheck (page 4-39).

   NO – Intermittent failure

DTC 41-1 (N-D SWITCH MALFUNCTION)

1. N-D Switch Power Input Voltage Inspection

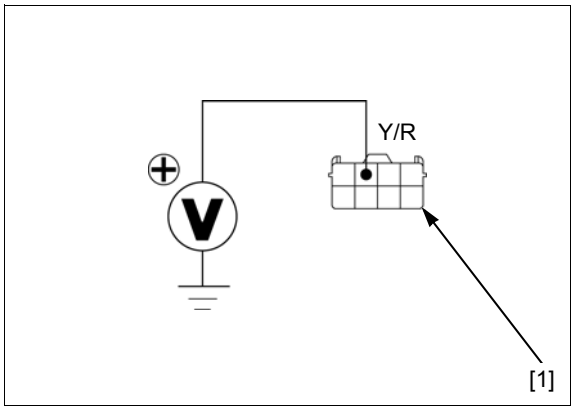
Disconnect the right handlebar switch 6P (Black) connector (page 22-23).
Turn the ignition switch ON with the engine stop switch "".
Measure the voltage between the wire harness side 6P (Black) connector [1] and ground.

Connection: Yellow/red (+) – Ground (–)

Is the voltage within 4.75 – 5.25 V?

YES – GO TO STEP 3.

NO – GO TO STEP 2.



2. N-D Switch Power Input Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 6P (Black) connector [1] and 33P (Gray) connector [2].

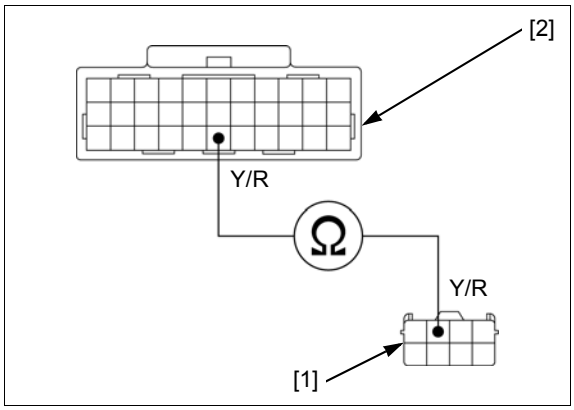
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Yellow/red – Yellow/red

Is there continuity?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Open circuit in the Yellow/red wire



3. N-D Switch Inspection

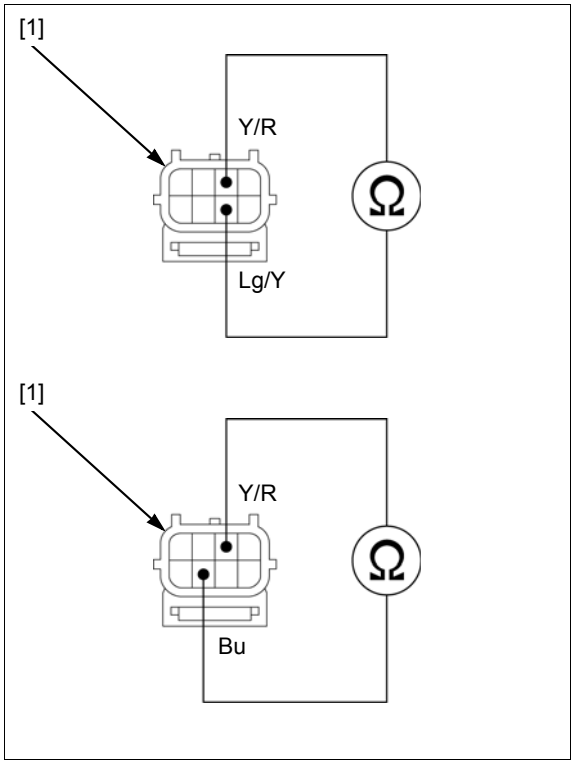
Turn the ignition switch OFF.
Check for continuity at the switch side 6P (Black) connector [1] in each switch position.

Connection:
N switch:
Light green/yellow – Yellow/red
D switch:
Blue – Yellow/red

Is there continuity with the switch pushed and no continuity with the switch released?

YES – GO TO STEP 4.

NO – Faulty N-D switch

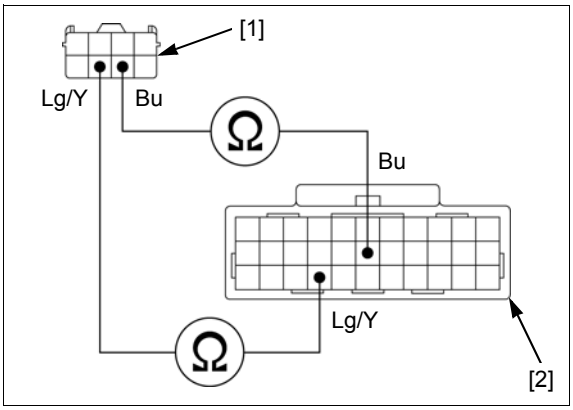


4. N-D Switch Output Line Open Circuit Inspection

Disconnect the PCM 33P (Brown) connector (page 4-39).
Check for continuity between the wire harness side 6P (Black) connector [1] and 33P (Brown) connector [2].

TOOL:
Test probe 07ZAJ-RDJA110

Connection:
Light green/yellow – Light green/yellow
Blue – Blue



Is there continuity?

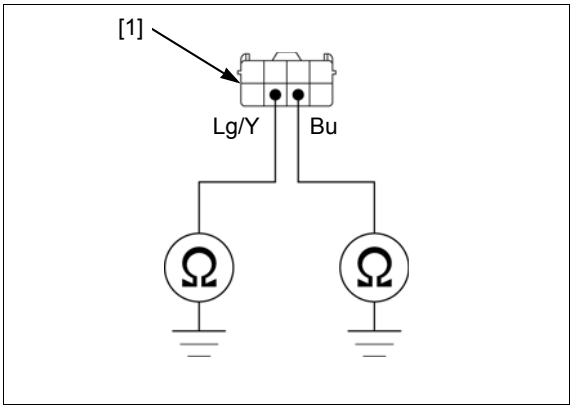
YES – GO TO STEP 5.

NO – • Open circuit in the Light green/yellow wire
• Open circuit in the Blue wire

5. N-D Switch Output Line Short Circuit Inspection

Check for continuity between the wire harness side 6P (Black) connector [1] and ground.

Connection: Light green/yellow – Ground
Blue – Ground



Is there continuity?

YES – • Short circuit in the Light green/yellow wire
• Short circuit in the Blue wire

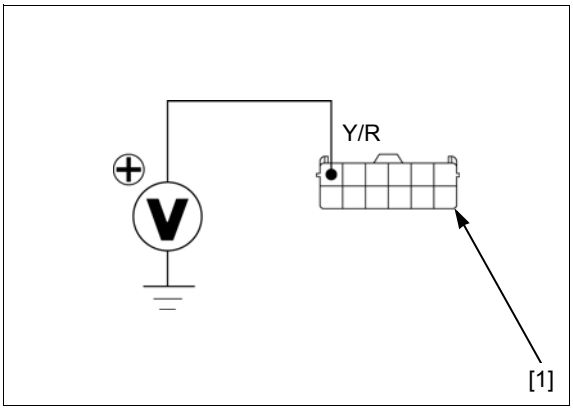
NO – Replace the PCM with a known good one and recheck (page 4-39).

DTC 42-1 (P0826) (SHIFT SWITCH MALFUNCTION)

1. Shift Switch Power Input Voltage Inspection

Disconnect the Left handlebar switch 12P (Black) connector (page 22-23).
Turn the ignition switch ON with the engine stop switch "".
Measure the voltage between the wire harness side 12P (Black) connector [1] and ground.

Connection: Yellow/red (+) – Ground (–)



Is the voltage within 4.75 – 5.25 V?

YES – GO TO STEP 3.

NO – GO TO STEP 2.

2. Shift Switch Power Input Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 12P (Black) connector [1] and 33P (Gray) connector [2].

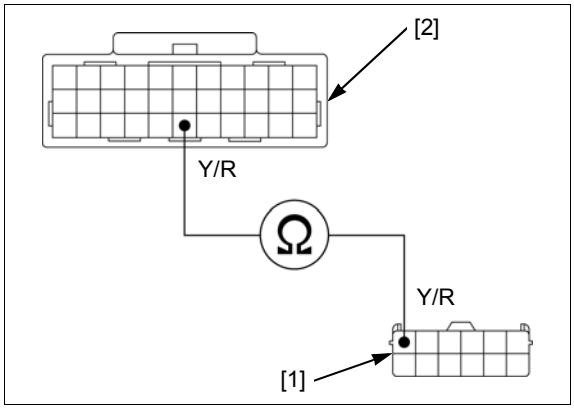
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Yellow/red – Yellow/red

Is there continuity?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Open circuit in the Yellow/red wire



3. Shift Switch Inspection

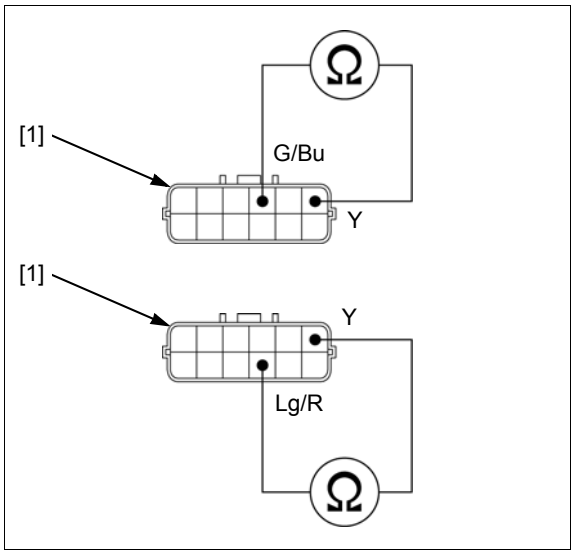
Turn the ignition switch OFF.
Check for continuity at the switch side 12P (Black) connector [1] in each switch position.

Connection:
"+" switch: Green/blue – Yellow
"–" switch: Light green/red – Yellow

Is there continuity with the switch pushed and no continuity with the switch released?

YES – GO TO STEP 4.

NO – Faulty shift switch



4. Shift Switch Input Line Open Circuit Inspection

Disconnect the PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 12P (Black) connector [1] and 33P (Gray) connector [2].

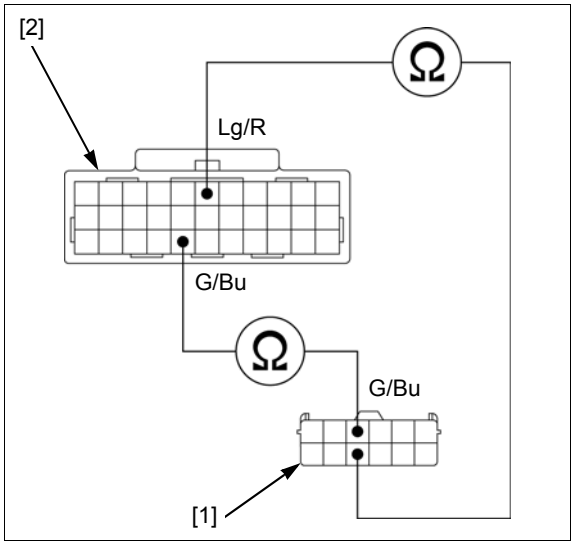
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Green/blue – Green/blue
Light green/red – Light green/red

Is there continuity?

YES – GO TO STEP 5.

NO – • Open circuit in the Green/blue wire
• Open circuit in the Light green/red wire



5. Shift Switch Input Line Short Circuit Inspection

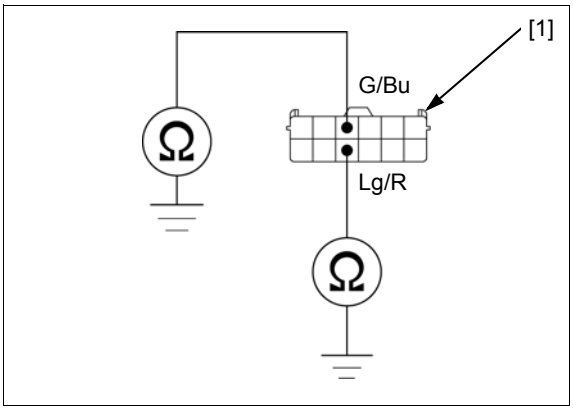
Check for continuity between the wire harness side 12P (Black) connector [1] and ground.

Connection: Green/blue – Ground
Light green/red – Ground

Is there continuity?

YES – • Short circuit in the Green/blue wire
• Short circuit in the Light green/red wire

NO – Replace the PCM with a known good one and recheck (page 4-39).



DTC 44-1 (P0197) (EOT SENSOR LOW VOLTAGE)

1. EOT Sensor System Inspection

Check the EOT sensor with the MCS or GST.

Is about 0 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. EOT Sensor Inspection

Turn the ignition switch OFF.
Disconnect the EOT sensor 2P (Black) connector (page 13-81).
Turn the ignition switch ON.
Check the EOT sensor with the MCS or GST.

Is about 0 V indicated?

YES – GO TO STEP 3.

NO – Faulty EOT sensor

3. EOT Sensor Input Line Short Circuit Inspection

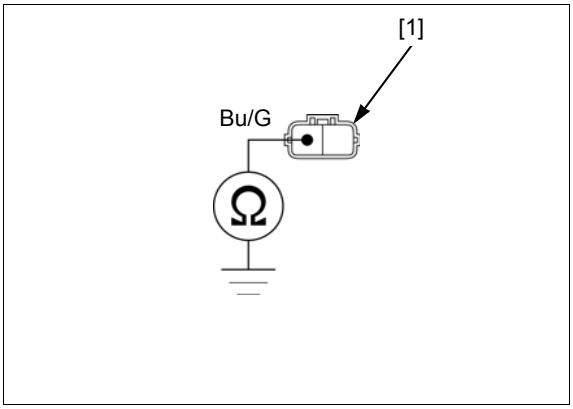
Turn the ignition switch OFF.
Disconnect the PCM 33P (Brown) connector (page 4-39).
Check the continuity between the wire harness side 2P (Black) connector [1] and ground.

Connection: Blue/green – Ground

Is there continuity?

YES – Short circuit in the Blue/green wire

NO – Replace the PCM with a known good one and recheck (page 4-39).



DTC 44-2 (P0198) (EOT SENSOR HIGH VOLTAGE)

NOTE:

- Before starting the inspection, check for loose or poor contact on the EOT sensor 2P (Black) and PCM 33P (Brown) connectors, and recheck the DTC.

1. EOT Sensor System Inspection

Check the EOT sensor with the MCS or GST.

Is about 5 V indicated?

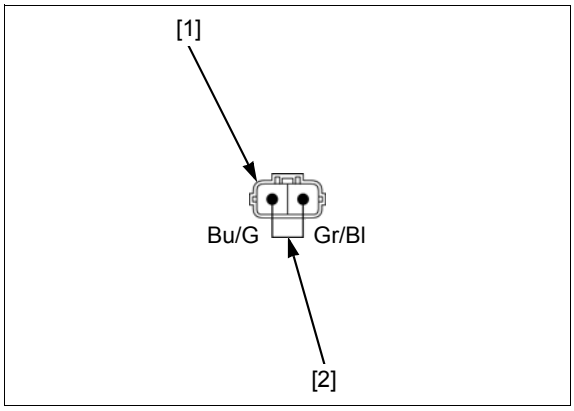
YES – GO TO STEP 2.

NO – Intermittent failure

2. EOT Sensor Inspection

Turn the ignition switch OFF.
Disconnect the EOT sensor 2P (Black) connector (page 13-81).
Short the wire harness side 2P (Black) connector [1] terminals with a jumper wire [2].

Connection: Blue/green – Gray/black



Turn the ignition switch ON.
Check the EOT sensor with the MCS or GST.

Is about 0 V indicated?

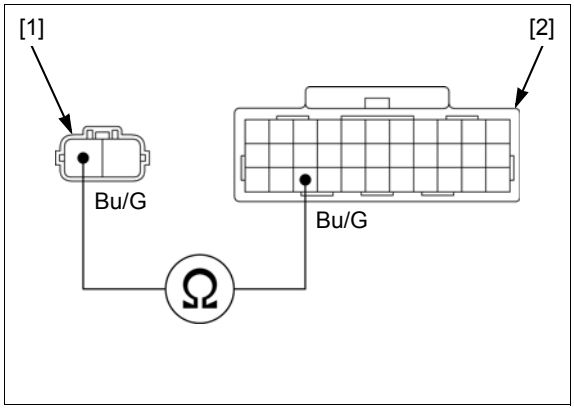
YES – Faulty EOT sensor

NO – GO TO STEP 3.

3. EOT Sensor Input Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Brown) connector (page 4-39).
Check for continuity between the wire harness side EOT sensor 2P (Black) connector [1] and PCM 33P (Brown) connector [2].

TOOL:
Test probe **07ZAJ-RDJA110**



Connection: Blue/green – Blue/green

Is there continuity?

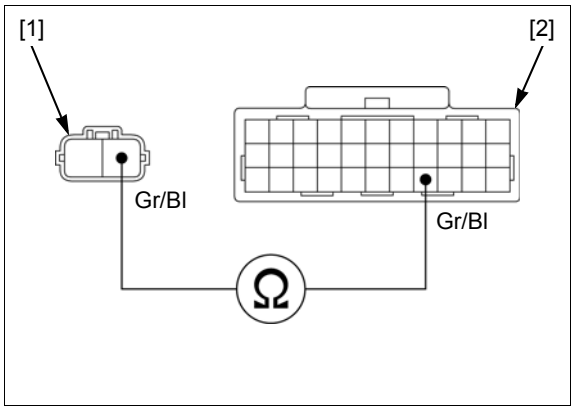
YES – GO TO STEP 4.

NO – Open circuit in the Blue/green wire

4. EOT Sensor Ground Line Open Circuit Inspection

Disconnect the PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 2P (Black) connector [1] and 33P (Gray) connector [2].

TOOL:
Test probe **07ZAJ-RDJA110**



Connection: Gray/black– Gray/black

Is there continuity?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Open circuit in the Gray/black wire

DTC 47-1 (P1704) or 48-1 (P1706) (No.1 or No.2 CLUTCH EOP SENSOR LOW VOLTAGE)

1. Clutch EOP Sensor System Inspection

Connect the MCS or GST and start the engine.
Check the clutch EOP sensor with the MCS or GST.

Is about 0 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. Clutch EOP Sensor Inspection

Stop the engine.
Disconnect the clutch EOP sensor 3P (No.1: Gray, No.2: Black) connector (page 13-80).
Turn the ignition switch ON.
Check the clutch EOP sensor with the MCS or GST.

Is about 0 V indicated?

YES – GO TO STEP 3.

NO – Faulty clutch EOP sensor

3. Clutch EOP Sensor Input Voltage Inspection

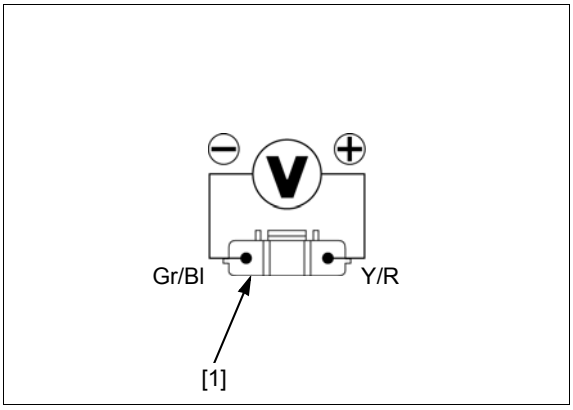
Measure the voltage between the wire harness side 3P connector [1].

Connection: Yellow/red (+) – Gray/black (–)

Is the voltage within 4.75 – 5.25 V?

YES – GO TO STEP 5.

NO – GO TO STEP 4.



4. Clutch EOP Sensor Input Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 3P connector [1] and 33P (Gray) connector [2].

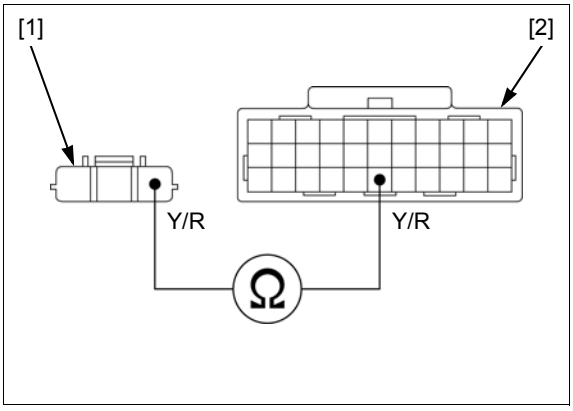
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Yellow/red – Yellow/red

Is there continuity?

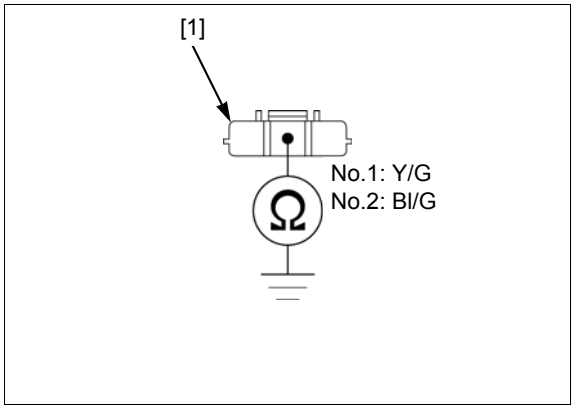
YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Open circuit in the Yellow/red wire



5. Clutch EOP Sensor Output Line Short Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Brown) connector (page 4-39).
Check for continuity between the wire harness side sensor 3P connector [1] and ground.



Connection:
No.1 clutch EOP sensor:
Yellow/green – Ground
No.2 clutch EOP sensor:
Black/green – Ground

Is there continuity?

YES – • Short circuit in the Yellow/green wire
• Short circuit in the Black/green wire

NO – Replace the PCM with a known good one and recheck (page 4-39).

DTC 47-2 (P1705) or 48-2 (P1707) (No.1 or No.2 CLUTCH EOP SENSOR HIGH VOLTAGE)

NOTE:
• Before starting the inspection, check for loose or poor contact on the clutch EOP sensor 3P (No.1: Gray, No.2: Black), and PCM 33P (Brown) and 33P (Gray) connectors, and recheck the DTC.

1. Clutch EOP Sensor System Inspection

Check the clutch EOP sensor with the MCS or GST.

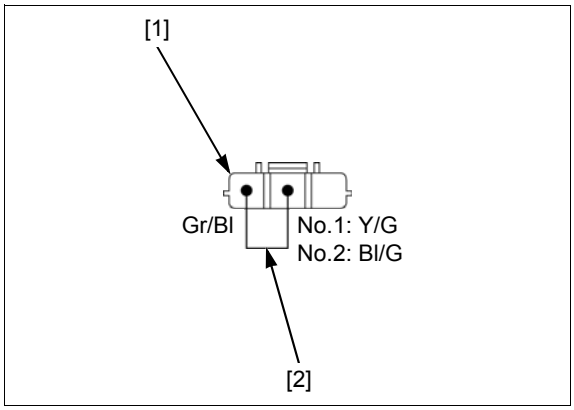
Is about 5 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. Clutch EOP Sensor Inspection

Turn the ignition switch OFF.
Disconnect the clutch EOP sensor 3P connector (page 13-80).
Short the wire harness side 3P connector [1] terminals with a jumper wire [2].



Connection:
No.1 clutch EOP sensor:
Yellow/green – Gray/black
No.2 clutch EOP sensor:
Black/green – Gray/black

Turn the ignition switch ON.
Check the clutch EOP sensor with the MCS or GST.

Is about 0 V indicated?

YES – Faulty clutch EOP sensor

NO – GO TO STEP 3.

3. Clutch EOP Sensor Ground Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side clutch EOP sensor 3P connector [1] and PCM 33P (Gray) connector [2].

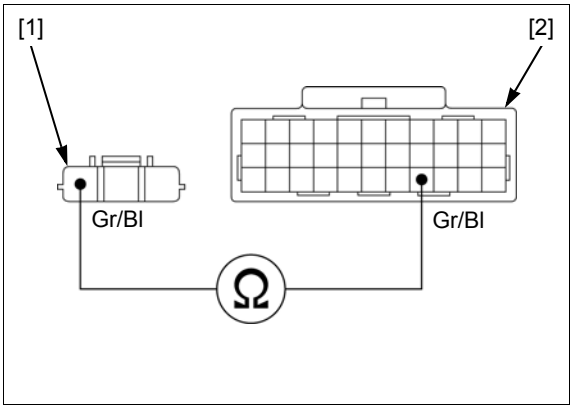
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Gray/black – Gray/black

Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Gray/black wire



4. Clutch EOP Sensor Output Line Open Circuit Inspection

Disconnect the PCM 33P (Brown) connector (page 4-39).
Check for continuity between the wire harness side No.1 clutch EOP sensor 3P connector [1] and No.2 clutch EOP sensor 3P connector [2], 33P (Brown) connector [3].

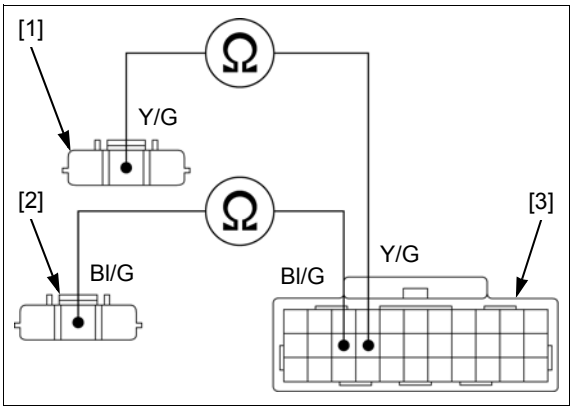
TOOL:
Test probe **07ZAJ-RDJA110**

Connection:
No.1 clutch EOP sensor:
Yellow/green – Yellow/green
No.2 clutch EOP sensor:
Black/green – Black/green

Is there continuity?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – • Open circuit in the Yellow/green wire
• Open circuit in the Black/green wire



DTC 49-1, 49-2 (CLUTCH LINE LOW OIL PRESSURE)

1. Clutch Line EOP Sensor System Inspection

Check the clutch line EOP sensor with the MCS.

Is Low voltage (about 0 V) or High voltage (about 5 V) indicated?

YES – • About 0 V (while engine running): See DTC 9-1 (page 26-142).
• About 5 V: See DTC 9-2 (page 26-143).

NO – GO TO STEP 2.

2. Engine Oil Level Inspection

Check the engine oil level (page 3-11).

Is the engine oil level correct?

YES – GO TO STEP 3.

NO – Add the recommended oil to the upper level.

3. Clutch Line Oil Filter Condition Inspection

Check the clutch oil filter (page 3-13).

Is the oil filter in good condition?

YES – GO TO STEP 4.

NO – Replace the clutch oil filter.

4. Clutch Line EOP Sensor Inspection

Replace the clutch line EOP sensor with a known good one (page 13-80).
Erase the DTC (page 25-60).
Test-ride the motorcycle above 2,000 min^{-1} (rpm) and stop the engine.
Check the DTC with the MCS.

Is DTC 49-1 or 49-2 indicated?

YES – GO TO STEP 5.

NO – Faulty original clutch line EOP sensor

5. PCM Inspection

Replace the PCM with a known good one (page 4-39).
Test-ride the motorcycle above 2,000 min^{-1} (rpm) and stop the engine.
Check the DTC with the MCS.

Is DTC 49-1 or 49-2 indicated?

YES –
- Oil pressure relief valve stuck open
- Damaged oil pump
- Internal oil leak in the clutch oil line

NO – Faulty original PCM

DTC 51-1 (P1702) (TR SENSOR LOW VOLTAGE)

NOTE:
- Before starting the inspection, check for loose or poor contact on the TR sensor 3P (Black), PCM 33P (Blue) and 33P (Gray) connectors, and recheck the DTC.

1. TR Sensor System Inspection

Check the TR sensor with the MCS or GST.

Is about 0 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. TR Sensor Input Voltage Inspection

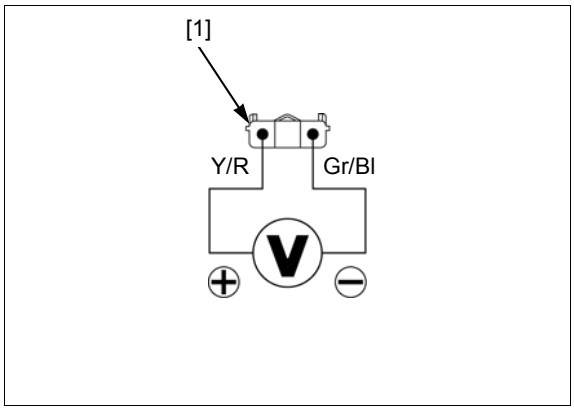
Turn the ignition switch OFF.
Disconnect the TR sensor 3P (Black) connector (page 13-79).
Turn the ignition switch ON.
Measure the voltage at the wire harness side 3P (Black) connector [1].

Connection: Yellow/red (+) – Gray/black (–)

Is the voltage within 4.75 – 5.25 V?

YES – GO TO STEP 5.

NO – GO TO STEP 3.



3. TR Sensor Input Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 3P (Black) connector [1] and 33P (Gray) connector [2].

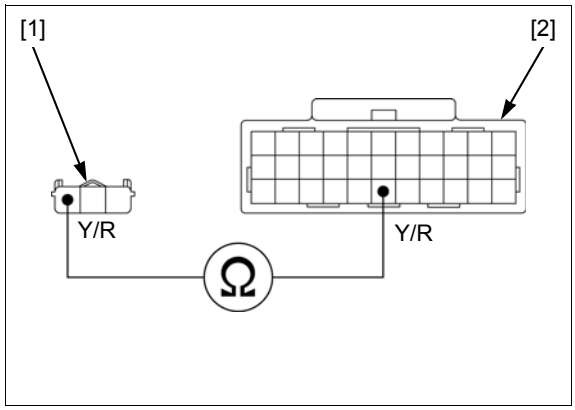
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Yellow/red – Yellow/red

Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Yellow/red wire



4. TR Sensor Ground Line Open Circuit Inspection

Check for continuity between the wire harness side 33P (Gray) connector [1] and 3P (Black) connector [2].

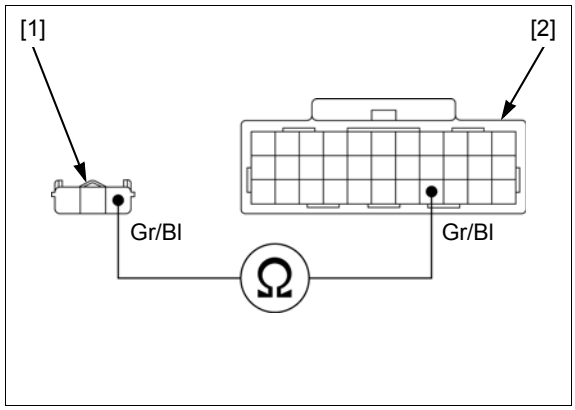
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Gray/black – Gray/black

Is there continuity?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Open circuit in the Gray/black wire



5. TR Sensor Signal Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Blue) connector (page 4-39).
Check for continuity between the wire harness side 3P (Black) connector [1] and 33P (Blue) connector [2].

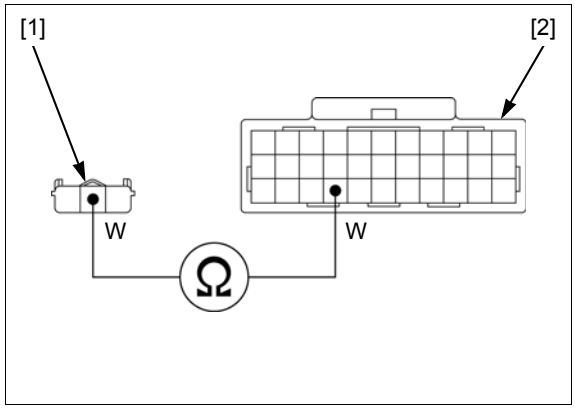
TOOL:
Test probe 07ZAJ-RDJA110

Connection: White – White

Is there continuity?

YES – GO TO STEP 6.

NO – Open circuit in the White wire



6. TR Sensor Output Line Short Circuit Inspection

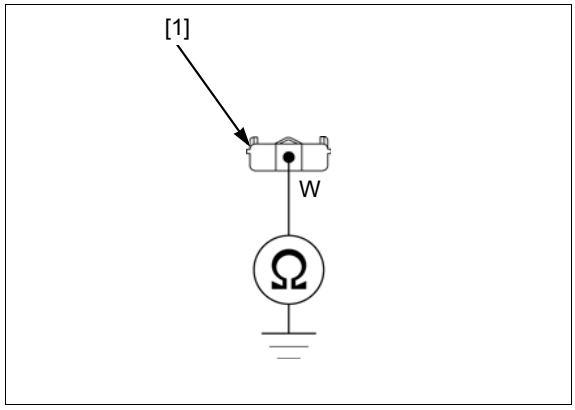
Check for continuity between the wire harness side 3P (Black) connector [1] and ground.

Connection: White – Ground

Is there continuity?

YES – Short circuit in the White wire

NO – GO TO STEP 7.



7. TR Sensor Inspection

Replace the TR sensor with a known good one (page 13-79).
Connect the 3P (Black) connector, 33P (Gray) connector and 33P (Blue) connector.
Check the TR sensor with the MCS or GST.

Is about 0 V indicated?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Faulty original TR sensor

DTC 51-2 (P1703) (TR SENSOR HIGH VOLTAGE)

1. TR Sensor System Inspection

Check the TR sensor with the MCS or GST.

Is about 5 V indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. TR Sensor Inspection

Replace the TR sensor with a known good one (page 13-79).
Turn the ignition switch ON.
Check the TR sensor with the MCS or GST.

Is about 5 V indicated?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Faulty original TR sensor

DTC 52-1 (NEUTRAL SWITCH STUCK OFF)

NOTE:

- Before starting the inspection, check for loose or poor contact on the neutral switch terminal and PCM 33P (Black) connector, and recheck the DTC.

1. DTC Recheck

Recheck the DTC with the MCS.

Is DTC 52-1 indicated?

YES – GO TO STEP 2.

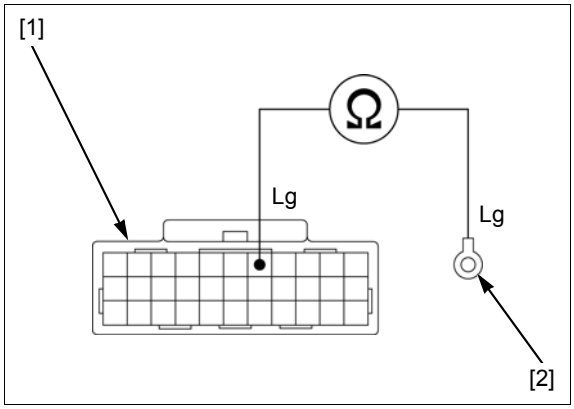
NO – Intermittent failure

2. Neutral Switch Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Brown) connector (page 4-39).
Remove the neutral switch terminal (page 13-82).
Check for continuity between the wire harness side 33P (Brown) connector [1] and neutral switch terminal [2].

Connection: Light green – Light green

TOOL:
Test probe **07ZAJ-RDJA110**



Is there continuity?

YES – GO TO STEP 3.

NO – Open circuit in the Light green wire

3. Neutral Switch Inspection

Replace the neutral switch with a known good one (page 13-82).
Connect the PCM 33P (Black) connector.
Turn the ignition switch ON.
Recheck the DTC with the MCS.

Is DTC 52-1 indicated?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Faulty original neutral switch

DTC 52-2 (NEUTRAL SWITCH STUCK ON)

1. Neutral Switch Line Short Circuit Inspection

Remove the neutral switch terminal (page 13-82).
Check for continuity between the neutral switch terminal and ground.

Connection: Light green – Ground

Is there continuity?

YES – Short circuit in the Light green wire

NO – GO TO STEP 2.

2. Neutral Switch Inspection

Replace the neutral switch with a known good one (page 13-82).
Install the neutral switch terminal (page 13-82).
Check the DTC with the MCS.

Is DTC 52-2 indicated?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Faulty original neutral switch

DTC 53-1 (P0715) (INNER MAINSHAFT SENSOR SPEED LOW)

NOTE:

- Before starting the inspection, check for loose or poor contact on the inner mainshaft sensor 3P (Black), PCM 33P (Brown) and 33P (Gray) connectors, and recheck the DTC.

1. DTC Recheck

Erase the DTC (page 25-60).
Test-ride the motorcycle and stop the engine.
Check the DTC with the MCS or GST.

Is DTC 53-1 (P0715) indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. Inner Mainshaft Sensor Input Voltage Inspection

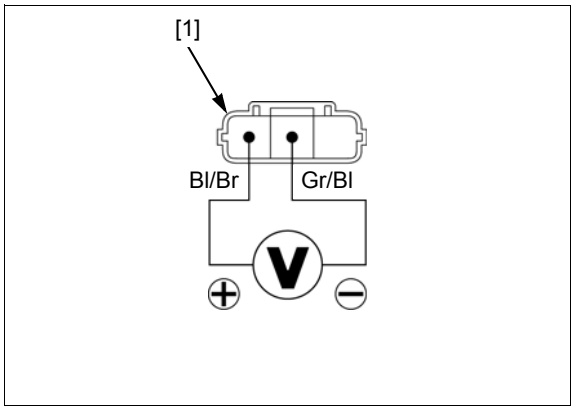
Turn the ignition switch OFF.
Disconnect the inner mainshaft sensor 3P (Black) connector (page 13-78).
Turn the ignition switch ON.
Measure the voltage at the wire harness side 3P (Black) connector [1].

Connection: Black/brown(+) – Gray/black (–)

Is there about battery voltage?

YES – GO TO STEP 5.

NO – GO TO STEP 3.



3. Inner Mainshaft Sensor Input Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Brown) connector (page 4-39).
Check for continuity between the wire harness side 3P (Black) connector [1] and 33P (Brown) connector [2].

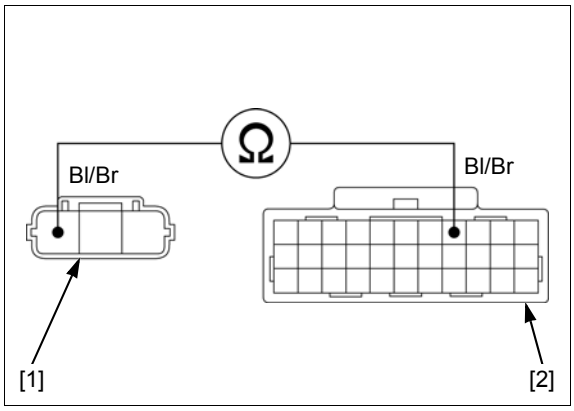
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Black/brown – Black/brown

Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the Black/brown wire



4. Inner Mainshaft Sensor Ground Line Open Circuit Inspection

Disconnect the PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 3P (Black) connector [1] and 33P (Gray) connector [2].

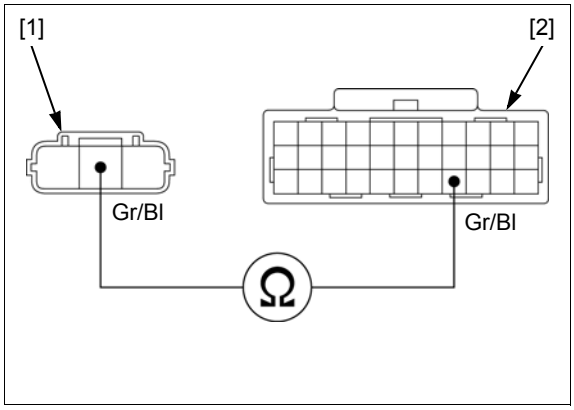
TOOL:
Test probe 07ZAJ-RDJA110

Connection: Gray/black – Gray/black

Is there continuity?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Open circuit in the Gray/black wire



5. Inner Mainshaft Sensor Output Line Inspection

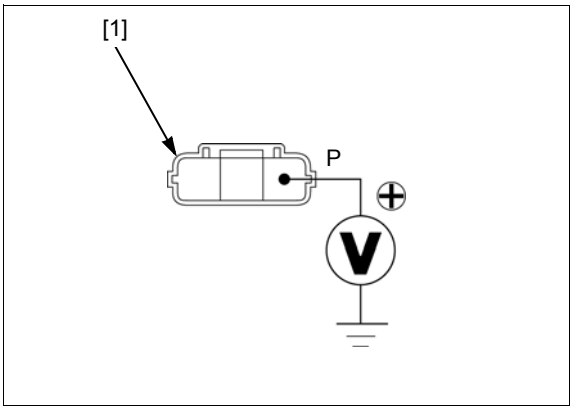
Measure the voltage between the wire harness side 3P (Black) connector [1] and ground.

Connection: Pink (+) – Ground (–)

Is the voltage within 4.75 – 5.25 V?

YES – GO TO STEP 8.

NO – GO TO STEP 6.



6. Inner Mainshaft Sensor Output Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Brown) connector (page 4-39).
Check for continuity between the wire harness side 3P (Black) connector [1] and 33P (Brown) connector [2].

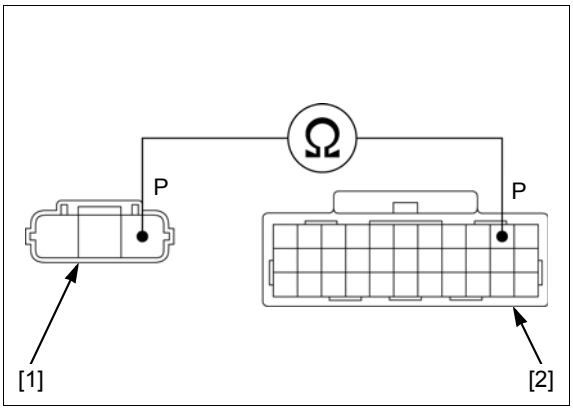
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Pink – Pink

Is there continuity?

YES – GO TO STEP 7.

NO – Open circuit in the Pink wire



7. Inner Mainshaft Sensor Output Line Short Circuit Inspection

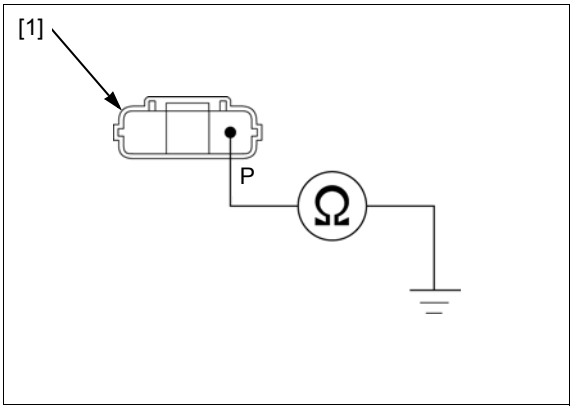
Check for continuity between the wire harness side 3P (Black) connector [1] and ground.

Connection: Pink – Ground

Is there continuity?

YES – Short circuit in the Pink wire

NO – Replace the PCM with a known good one and recheck (page 4-39).



8. Inner Mainshaft Sensor Inspection

Turn the ignition switch OFF.
Replace the inner mainshaft sensor with a known good one (page 13-78).
Erase the DTC (page 25-60).
Test-ride the motorcycle and stop the engine.
Check the DTC with the MCS or GST.

Is DTC 53-1 (P0715) indicated?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Faulty original inner mainshaft sensor

DTC 54-1 (P2765) (OUTER MAINSHAFT SENSOR SPEED LOW)

NOTE:

- Before starting the inspection, check for loose or poor contact on the outer mainshaft sensor 3P (Black), PCM 33P (Brown) and 33P (Gray) connectors, and recheck the DTC.

1. DTC Recheck

Erase the DTC (page 25-60).
Test-ride the motorcycle and stop the engine.
Check the DTC with the MCS or GST.

Is DTC 54-1 (P2765) indicated?

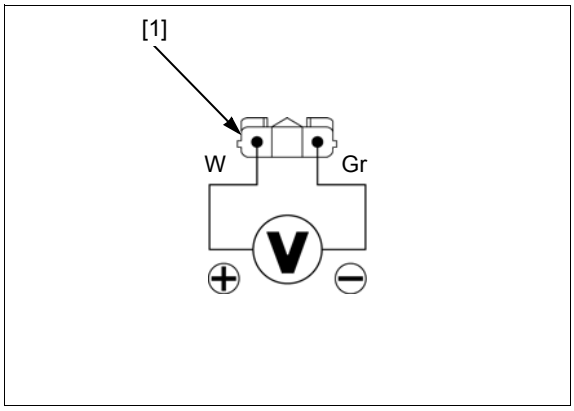
YES – GO TO STEP 2.

NO – Intermittent failure

2. Outer Mainshaft Sensor Input Voltage Inspection

Turn the ignition switch OFF.
Disconnect the outer mainshaft sensor 3P (Black) connector (page 13-78).
Temporarily install the removed electrical parts in the reverse order of removal.
Turn the ignition switch ON.
Measure the voltage at the wire harness side 3P (Black) connector [1].

Connection: White (+) – Gray (–)



Is there about battery voltage?

YES – GO TO STEP 5.

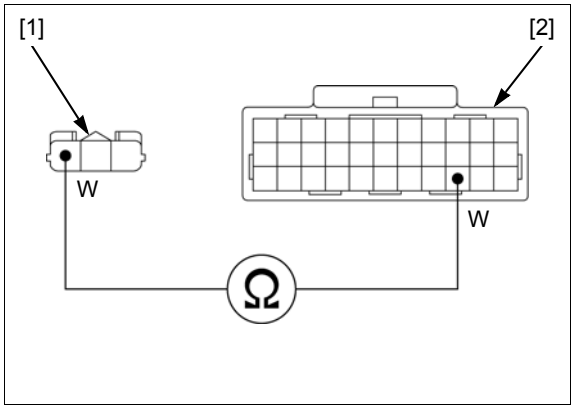
NO – GO TO STEP 3.

3. Outer Mainshaft Sensor Input Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Brown) connector (page 4-39).
Check for continuity between the wire harness side 3P (Black) connector [1] and 33P (Brown) connector [2].

TOOL:
Test probe **07ZAJ-RDJA110**

Connection: White – White



Is there continuity?

YES – GO TO STEP 4.

NO – Open circuit in the White wire

4. Outer Mainshaft Sensor Ground Line Open Circuit Inspection

Disconnect the PCM 33P (Gray) connector (page 4-39).
Check for continuity between the wire harness side 3P (Black) connector [1] and 33P (Gray) connector [2]

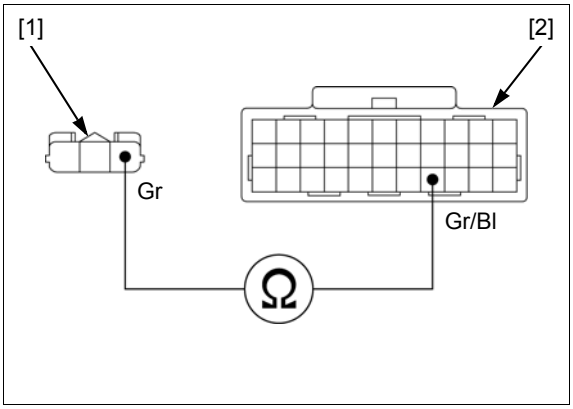
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Gray – Gray/black

Is there continuity?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Open circuit in the Gray or Gray/black wire



5. Outer Mainshaft Sensor Output Line Inspection

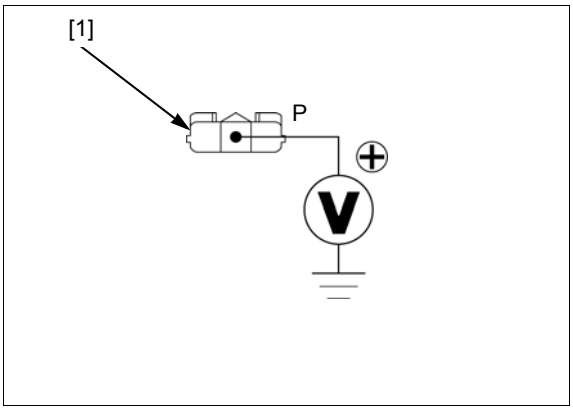
Measure the voltage between the wire harness side 3P (Black) connector [1] and ground.

Connection: Pink (+) – Ground (–)

Is the voltage within 4.75 – 5.25 V?

YES – GO TO STEP 8.

NO – GO TO STEP 6.



6. Outer Mainshaft Sensor Output Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the PCM 33P (Brown) connector (page 4-39).
Check for continuity between the wire harness side 3P (Black) connector [1] and 33P (Brown) connector [2].

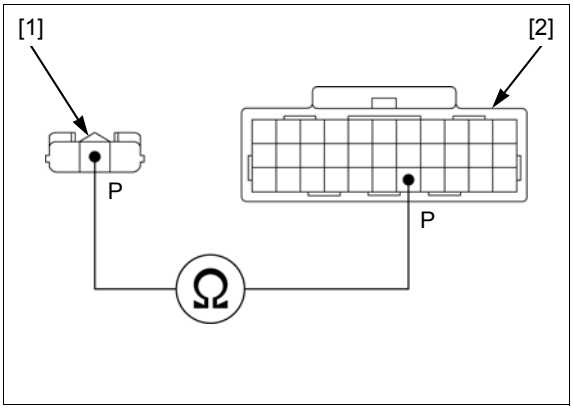
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Pink – Pink

Is there continuity?

YES – GO TO STEP 7.

NO – Open circuit in the Pink wire



7. Outer Mainshaft Sensor Output Line Short Circuit Inspection

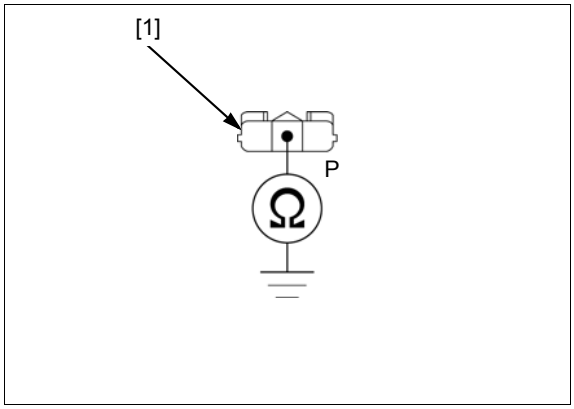
Check for continuity between the wire harness side 3P (Black) connector [1] and ground

Connection: Pink – Ground

Is there continuity?

YES – Short circuit in the Pink wire

NO – Replace the PCM with a known good one and recheck (page 4-39).



8. Outer Mainshaft Sensor Condition Inspection

Turn the ignition switch OFF.
Replace the outer mainshaft sensor with a known good one (page 13-78).
Erase the DTC (page 25-60).
Test-ride the motorcycle and stop the engine.
Check the DTC with the MCS or GST.

Is DTC 54-1 (P2765) indicated?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Faulty original outer mainshaft sensor

DTC 55-1 (P0745)/55-2 (P0745) (No.1 LINEAR SOLENOID VALVE)

NOTE:

- Before starting the inspection, check for loose or poor contact on the linear solenoid valve 4P (Black) and PCM 33P (Brown) connectors, and recheck the DTC.

1. DTC Recheck

Recheck the DTC with the MCS or GST.

Is DTC 55-1 (P0745) or 55-2 (P0745) indicated?

YES – GO TO STEP 2.

NO – Intermittent failure

2. No.1 Linear Solenoid Valve Inspection

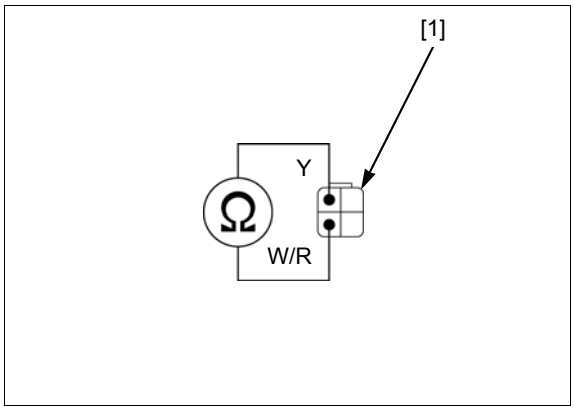
Turn the ignition switch OFF.
Disconnect the linear solenoid valve 4P (Black) connector (page 13-60).
Measure the resistance at the linear solenoid valve side 4P (Black) connector [1].

Connection: Yellow – White/red

Is the resistance within 5.0 – 5.6 Ω (20°C/68°F)?

YES – GO TO STEP 3.

NO – Faulty linear solenoid valve

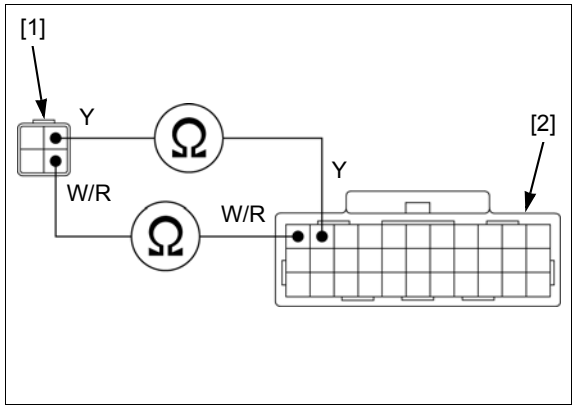


3. No.1 Linear Solenoid Valve Line Open Circuit Inspection

Disconnect the PCM 33P (Brown) connector (page 4-39).
Check for continuity between the wire harness side 4P (Black) connector [1] and 33P (Brown) connector [2].

TOOL:
Test probe 07ZAJ-RDJA110

Connection: Yellow – Yellow
White/red – White/red



Is the continuity normal?

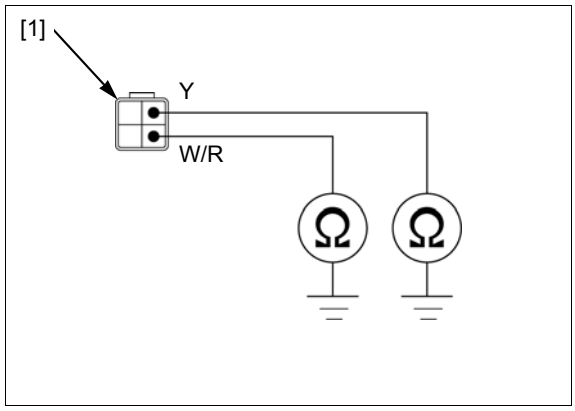
YES – GO TO STEP 4.

NO – • Open circuit in the Yellow wire
• Open circuit in the White/red wire

4. No.1 Linear Solenoid Valve Line Short Circuit Inspection

Check for continuity between the wire harness side 4P (Black) connector [1] and ground.

Connection: Yellow – Ground
White/red – Ground



Is there continuity?

YES – • Short circuit in the Yellow wire
• Short circuit in the White/red wire

NO – Replace the PCM with a known good one and recheck (page 4-39).

DTC 56-1 (P0775)/56-2 (P0775) (No.2 LINEAR SOLENOID VALVE)

NOTE:
- Before starting the inspection, check for loose or poor contact on the linear solenoid valve 4P (Black) and PCM 33P (Brown) connectors, and recheck the DTC.

1. DTC Recheck

Recheck the DTC with the MCS or GST.

Is DTC 56-1 (P0775) or 56-2 (P0775) indicated?

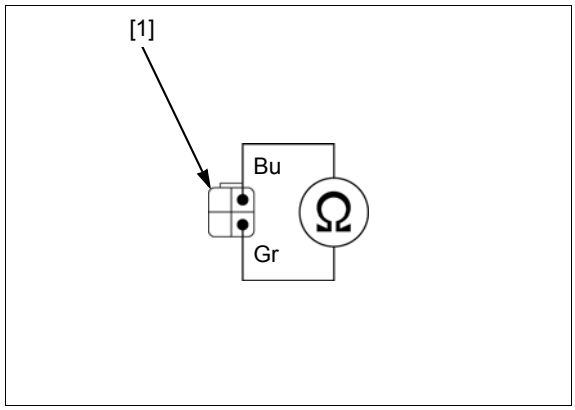
YES – GO TO STEP 2.

NO – Intermittent failure

2. No.2 Linear Solenoid Valve Inspection

Turn the ignition switch OFF.
Disconnect the linear solenoid valve 4P (Black) connector (page 13-60).
Measure the resistance at the linear solenoid valve side 4P (Black) connector [1].

Connection: Blue – Gray



Is the resistance within 5.0 – 5.6 Ω (20°C/68°F)?

YES – GO TO STEP 3.

NO – Faulty linear solenoid valve

3. No.2 Linear Solenoid Valve Input/ground Line Open Circuit Inspection

Disconnect the PCM 33P (Brown) connector (page 4-39).
Check for continuity between the wire harness side 4P (Black) connector [1] and 33P (Brown) connector [2].

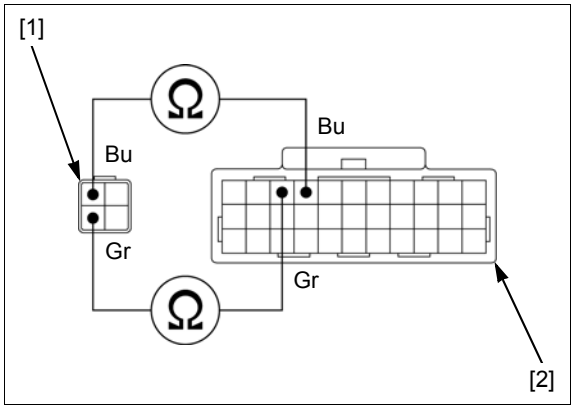
TOOL:
Test probe **07ZAJ-RDJA110**

Connection: Blue – Blue
Gray – Gray

Is the continuity normal?

YES – GO TO STEP 4.

NO – • Open circuit in the Blue wire
• Open circuit in the Gray wire



4. No.2 Linear Solenoid Valve Input/ground Line Short Circuit Inspection

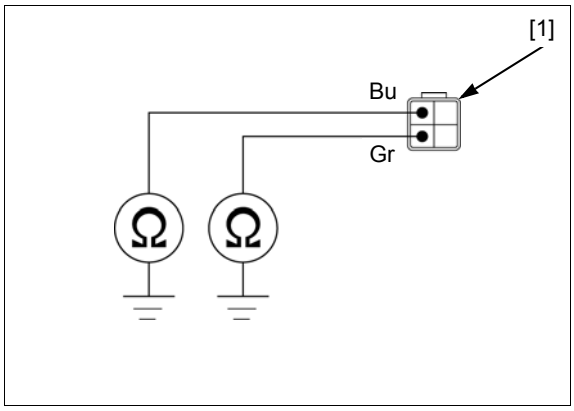
Check for continuity between the wire harness side 4P (Black) connector [1] and ground.

Connection: Blue – Ground
Gray – Ground

Is there continuity?

YES – • Short circuit in the Blue wire
• Short circuit in the Gray wire

NO – Replace the PCM with a known good one and recheck (page 4-39).



DTC 57-1 (GEARSHIFT MECHANISM MALFUNCTION)

Refer to DTC 27-1 (page 26-151).

DTC 57-2 (GEAR POSITION MALFUNCTION; JUMPS OUT OF GEAR)

Refer to DTC 27-1 (page 26-151).

DTC 58-1 or DTC 59-1 (No.1 or No.2 CLUTCH DOES NOT DISENGAGE; WHEN SHIFTING GEAR)

1. Clutch Condition Inspection

Remove the dual clutch assembly and inspect the clutch for sticking (page 13-63).

Is the No.1 clutch stuck?

YES – Faulty clutch

NO – GO TO STEP 2.

2. Clutch Oil Line Inspection

Check the clutch oil passages in the right crankcase cover and mainshaft for clogging.

Is the oil passage clogged?

YES – Clean the oil passage.

NO – Replace the PCM with a known good one and recheck (page 4-39).

DTC 61-1/61-2/61-3/61-4/62-1/62-2 (No.1 CLUTCH OIL PRESSURE MALFUNCTION)

1. DTC Recheck

Recheck the DTC with the MCS or GST.

Is DTC 47-1 (P1704), 47-2 (P1705), 55-1 (P0745), or 55-2 (P0745) indicated?

YES –
- DTC 47-1 (P1704) is indicated (page 26-159).
- DTC 47-2 (P1705) is indicated (page 26-160).
- DTC 55-1 (P0745) is indicated (page 26-170).
- DTC 55-2 (P0745) is indicated (page 26-170).

NO – GO TO STEP 2.

2. No.1 Clutch EOP Sensor Inspection

Replace the No.1 clutch EOP sensor with a known good one (page 13-80).
Erase the DTC (page 25-60).
Test-ride the motorcycle and stop the engine.
Check the DTC with the MCS or GST.

Is DTC 61-1, 61-2, 61-3, 61-4, 62-1 or 62-2 indicated?

YES – GO TO STEP 3.

NO – Faulty original No.1 clutch EOP sensor

3. PCM Inspection

Replace the PCM with a known good one (page 4-39).
Test-ride the motorcycle and stop the engine.
Check the DTC with the MCS or GST.

Is DTC 61-1, 61-2, 61-3, 61-4, 62-1 or 62-2 indicated?

YES –
- Faulty No.1 linear solenoid valve
- Clogged No.1 clutch oil line
- Internal oil leak in the No.1 clutch oil line

NO – Faulty original PCM

DTC 63-1/63-2/63-3/63-4/64-1/64-2 (No.2 CLUTCH OIL PRESSURE MALFUNCTION)

1. DTC Recheck

Recheck the DTC with the MCS or GST.

Is DTC 48-1 (P1706), 48-2 (P1707), 56-1 (P0775), or 56-2 (P0775) indicated?

YES – • DTC 48-1 (P1706) is indicated (page 26-159).
• DTC 48-2 (P1707) is indicated (page 26-160).
• DTC 56-1 (P0775) is indicated (page 26-171).
• DTC 56-2 (P0775) is indicated (page 26-171).

NO – GO TO STEP 2.

2. No.2 Clutch EOP Sensor Inspection

Replace the No.2 clutch EOP sensor with a known good one (page 13-80).
Erase the DTC (page 25-60).
Test-ride the motorcycle and stop the engine.
Check the DTC with the MCS or GST.

Is DTC 63-1, 63-2, 63-3, 63-4, 64-1 or 64-2 indicated?

YES – GO TO STEP 3.

NO – Faulty original No.2 clutch EOP sensor

3. PCM Inspection

Replace the PCM with a known good one (page 4-39).
Test-ride the motorcycle and stop the engine.
Check the DTC with the MCS or GST.

Is DTC 63-1, 63-2, 63-3, 63-4, 64-1 or 64-2 indicated?

YES – • Faulty No.2 linear solenoid valve
• Clogged No.2 clutch oil line
• Internal oil leak in the No.2 clutch oil line

NO – Faulty original PCM

DTC 65-1 (P170C) (FRONT AND REAR WHEEL SPEED SIGNAL MALFUNCTION)

NOTE:

• Before starting the inspection, check that the tire sizes are correct, and the drive and driven sprockets are the specified ones.

1. DTC Recheck

Erase the DTC (page 25-60).
Test-ride the motorcycle above 20 km/h (12 mph) for more than 20 seconds.
Stop the engine.
Check the DTC with the MCS or GST.

Is DTC P0500 or P1500 indicated?

YES – • DTC P0500 is indicated (page 26-76).
• DTC P1500 is indicated (page 26-88).

NO – GO TO STEP 2.

2. Front Wheel Speed Sensor Condition Inspection

Inspect the area around the front wheel speed sensor.
Check that there is no iron or other magnetic deposits between the pulser ring and wheel speed sensor, and check the pulser ring slots for obstructions.
Check installation condition of the pulser ring or wheel speed sensor for looseness.
Check the pulser ring and sensor tip for deformation or damage.

Are the sensor and pulser ring in good condition?

YES – GO TO STEP 3.

NO – Remove any deposits. Install properly or replace faulty part.

3. VS Sensor Condition Inspection

Remove the VS sensor (page 4-42).
Check the VS sensor for damage or contaminated.

Is the VS sensor in good condition?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Replace the VS sensor with a known good one and recheck.

DTC 68-1 (No.1 CLUTCH OPERATION MALFUNCTION; CLUTCH SLIPS)

1. DTC Recheck

Erase the DTC (page 25-60).
Test-ride the motorcycle above 20 km/h (12 mph) for more than 20 seconds.
Stop the engine.
Check the DTC with the MCS or GST.

Is DTC P0500 indicated?

YES – Refer to DTC P0500 troubleshooting (page 26-76).

NO – GO TO STEP 2.

2. Clutch Condition Inspection

Disassemble and check the No.1 clutch assembly (page 13-63).

Is the No.1 clutch in good condition?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Replace the faulty part.

DTC 69-1 (No.2 CLUTCH OPERATION MALFUNCTION; CLUTCH SLIPS)

1. DTC Recheck

Erase the DTC (page 25-60).
Test-ride the motorcycle above 20 km/h (12 mph) for more than 20 seconds.
Stop the engine.
Check the DTC with the MCS or GST.

Is DTC P0500 indicated?

YES – Refer to DTC P0500 troubleshooting (page 26-76).

NO – GO TO STEP 2.

2. Clutch Condition Inspection

Disassemble and check the No.2 clutch assembly (page 13-63).

Is the No.2 clutch in good condition?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Replace the faulty part.

DTC 71-1 (P1700)/72-1 (P1701) (INNER, OUTER MAINSHAFT/COUNTERSHAFT SPEED RATIO FAILURE)

1. DTC Recheck 1

Check the DTC with the MCS or GST.

Is DTC 53-1 (P0715), 54-1 (P2765), or 11-1 (P0500) indicated?

YES –
- DTC 53-1 (P0715) is indicated (page 26-165).
- DTC 54-1 (P2765) is indicated (page 26-168).
- DTC P0500 is indicated (page 26-76).

NO – GO TO STEP 2.

2. DTC Recheck 2

Erase the DTC (page 25-60).
Test-ride the motorcycle above 20 km/h (12 mph) for more than 20 seconds.
Stop the engine.
Check the DTC with the MCS or GST.

Is DTC 71-1 (P1700) or 72-1 (P1701) indicated?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Intermittent failure

DTC 84-1 (P0606) (CPU IN THE PCM MALFUNCTION)

1. DTC Recheck

Erase the DTC (page 25-60).
Check the DTC with the MCS or GST.

Is DTC 84-1 (P0606) indicated?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Intermittent failure

A/M SWITCH TROUBLESHOOTING

If the engine can be started but AT/MT mode cannot be changed, perform this troubleshooting.

NOTE:

- Before starting the inspection, check for loose or poor contact on the right handlebar switch and PCM 33P connectors, and recheck the A/M switch operation.
- If the PCM is replaced, perform the Clutch Initialize Learning Procedure (page 13-82).

1. A/M switch Power Input Voltage Inspection

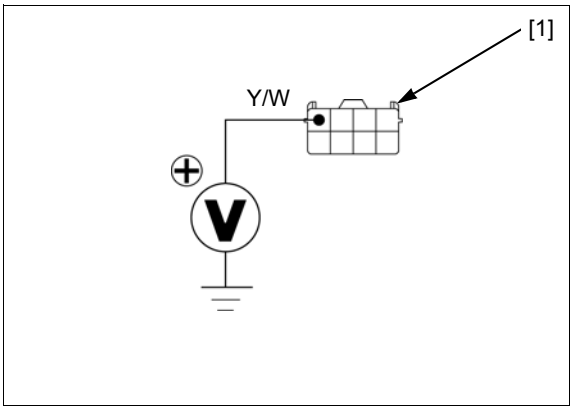
Disconnect the right handlebar switch 8P (Black) connector (page 22-23).
Turn the ignition switch ON with the engine stop switch "".
Measure the voltage between the wire harness side 6P (Black) connector [1] and ground.

Connection: Yellow/white (+) – Ground (–)

Is there battery voltage?

YES – GO TO STEP 2.

NO – Open circuit in the Yellow/white wire between the right handlebar switch connector and fuse box (ENG STOP 10 A)



2. A/M switch Inspection

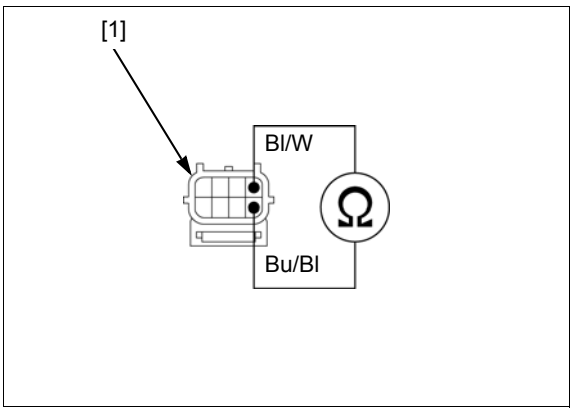
Turn the ignition switch OFF.
Check for continuity at the switch side right handlebar switch 8P (Black) connector [1] in each switch position.

Connection: Black/white – Blue/black

Is there continuity with the switch pushed and no continuity with the switch released?

YES – GO TO STEP 3.

NO – Faulty A/M switch



3. A/M switch Input Line Open Circuit Inspection

Disconnect the PCM 33P (Brown) connector (page 4-39).
Check for continuity between the wire harness side right handlebar switch 8P (Black) connector [1] and PCM 33P (Brown) connector [2].

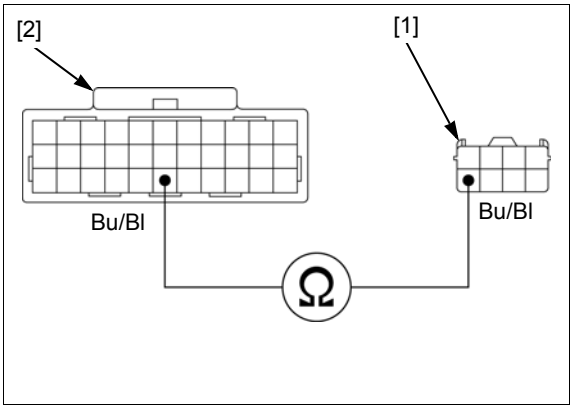
Connection: Blue/black – Blue/black

TOOL:
Test probe **07ZAJ-RDJA110**

Is there continuity?

YES – Replace the PCM with a known good one and recheck (page 4-39).

NO – Open circuit in the Blue/black wire



RIGHT CRANKCASE COVER (CRF1000D2/DL2)

NOTE:

- For procedures not described below, refer to the Service Manual of 62MJP00 or 62MJP00Z.

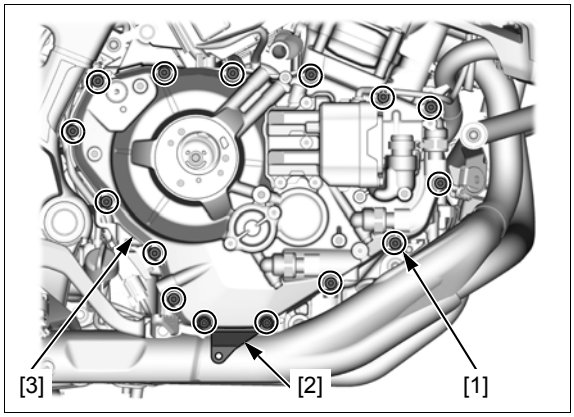
REMOVAL

Remove the bolts [1].

Remove the right skid plate bracket [2].

Do not allow dust or dirt to enter the oil passages.

Remove the right crankcase cover [3].



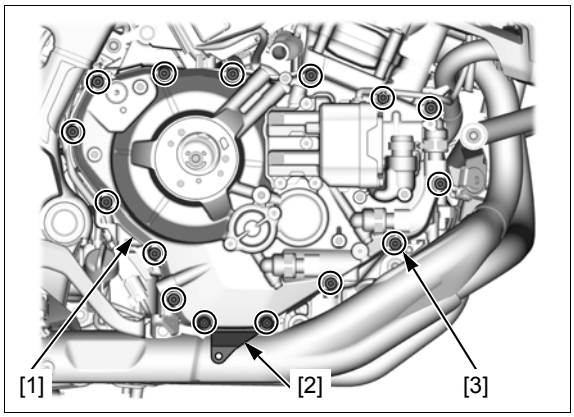
INSTALLATION

Install the right crankcase cover [1].

Install the right skid plate bracket [2].

Install the bolts [3] and tighten them in a crisscross pattern in 2 or 3 steps to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



ENGINE REMOVAL

NOTE:

- For procedures not described below, refer to the Service Manual of 62MJP00 or 62MJP00Z.

Support the motorcycle using a safety stand or hoist.

Remove the following:

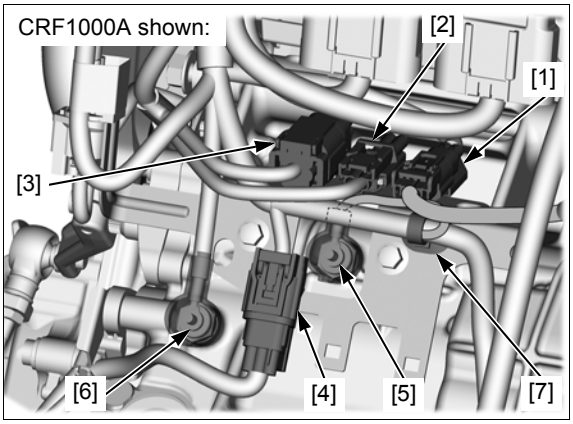
– Muffler/exhaust pipe
  – CRF1000A/D/AL/DL (page 2-16)
  – CRF1000A2/D2/AL2/DL2 (page 26-58)
– Engine oil filter (page 3-12)
– Ignition coil tray (page 26-124)
– Radiator (page 8-6)
– Radiator reserve tank (page 8-10)
– Rear brake pedal (page 19-15)
– Battery box (page 21-5)
– Gearshift spindle cover (CRF1000A/A2/AL/AL2) (page 12-17)
– Shift pedal (CRF1000A/A2/AL/AL2) (page 12-21)
– EOP switch (CRF1000A/A2/AL/AL2) (page 22-19)
– EOP sensor (CRF1000D/D2/DL/DL2) (page 22-20)
– Front side pipe stay (CRF1000A2/AL2/D2/DL2) (page 26-47)
– Lower cross pipe bracket (CRF1000A2/AL2/D2/DL2) (page 26-47)

CRF1000A/A2/AL/AL2:

Disconnect the following:

- Rear brake switch 2P (Gray) connector [1]
- Sidestand switch 2P (Black) connector [2]
- Alternator assembly 6P (Black) connector [3]
- Gear position sensor 3P (Black) connector [4]
- Shift spindle switch terminal [5]
- Neutral switch terminal [6]

Release the O_2 sensor wire clip [7] from the connector clip stay.

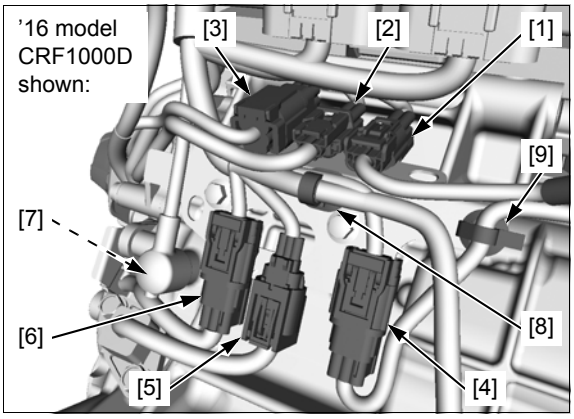


CRF1000D/D2/DL/DL2:

Disconnect the following:

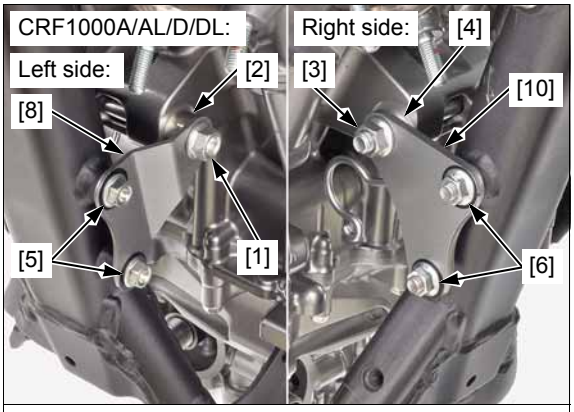
- Rear brake switch 2P (Gray) connector [1]
- Sidestand switch 2P (Black) connector [2]
- Alternator assembly 6P (Black) connector [3]
- Shift spindle angle sensor 3P (Blue) connector [4]
- Inner mainshaft sensor 3P (Black) connector [5]
- TR sensor 3P (Black) connector [6]
- Neutral switch terminal [7]

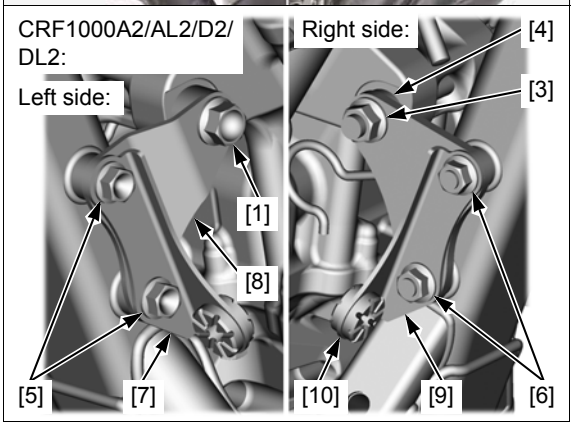
Release the O_2 sensor wire clip [8] and shift spindle angle sensor wire clip [9] from the connector clip stay.



Remove the following:

- Front middle bolt (10 x 100 mm) [1]
- Collar (left side, long) [2]
- Front middle nut (10 mm) [3]
- Collar (right side, short) [4]
- Front middle bolts [5]
  - CRF1000A/AL/D/DL: 8 x 87 mm
  - CRF1000A2/AL2/D2/DL2: 8 x 90 mm
- Front middle nuts (8 mm) [6]
- Lower cross pipe bracket (left side) (CRF1000A2/AL2/D2/DL2) [7]
- Stay (left side) [8]
- Lower cross pipe bracket (right side) (CRF1000A2/AL2/D2/DL2) [9]
- Stay (right side) [10]





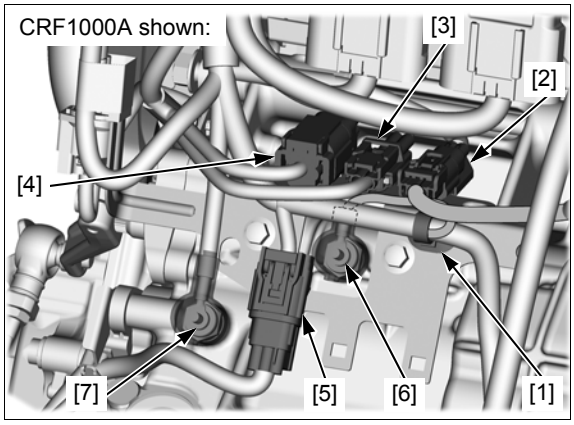
ENGINE INSTALLATION

NOTE:

- For procedures not described below, refer to the Service Manual of 62MJP00 or 62MJP00Z.

CRF1000A/A2/AL/AL2:

Install the O_2 sensor wire clip [1] to the connector clip stay.



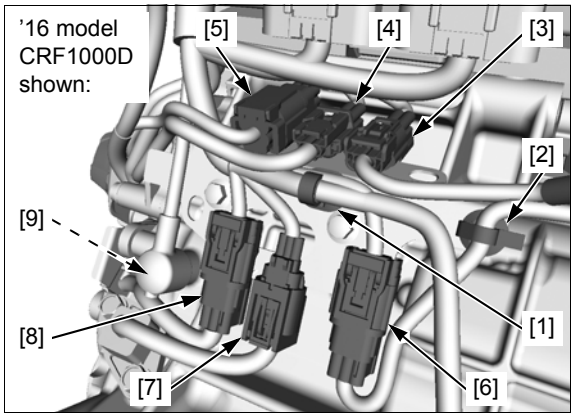
Connect the following:

– Rear brake switch 2P (Gray) connector [2]
– Sidestand switch 2P (Black) connector [3]
– Alternator assembly 6P (Black) connector [4]
– Gear position sensor 3P (Black) connector [5]
– Shift spindle switch terminal [6]
– Neutral switch terminal [7]

TORQUE:
Shift spindle switch terminal nut:
1.7 N·m (0.2 kgf·m, 1.3 lbf·ft)
Neutral switch terminal nut:
1.7 N·m (0.2 kgf·m, 1.3 lbf·ft)

CRF1000D/D2/DL/DL2:

Install the O_2 sensor wire clip [1] and shift spindle angle sensor wire clip [2] to the connector clip stay.



Connect the following:

– Rear brake switch 2P (Gray) connector [3]
– Sidestand switch 2P (Black) connector [4]
– Alternator assembly 6P (Black) connector [5]
– Shift spindle angle sensor 3P (Blue) connector [6]
– Inner mainshaft sensor 3P (Black) connector [7]
– TR sensor 3P (Black) connector [8]
– Neutral switch terminal [9]

TORQUE:
Neutral switch terminal nut:
1.7 N·m (0.2 kgf·m, 1.3 lbf·ft)

Install the alternator assembly wire onto the frame:

– CRF1000A/A2/AL/AL2 (page 11-4)
– CRF1000D/D2/DL/DL2 (page 11-5)

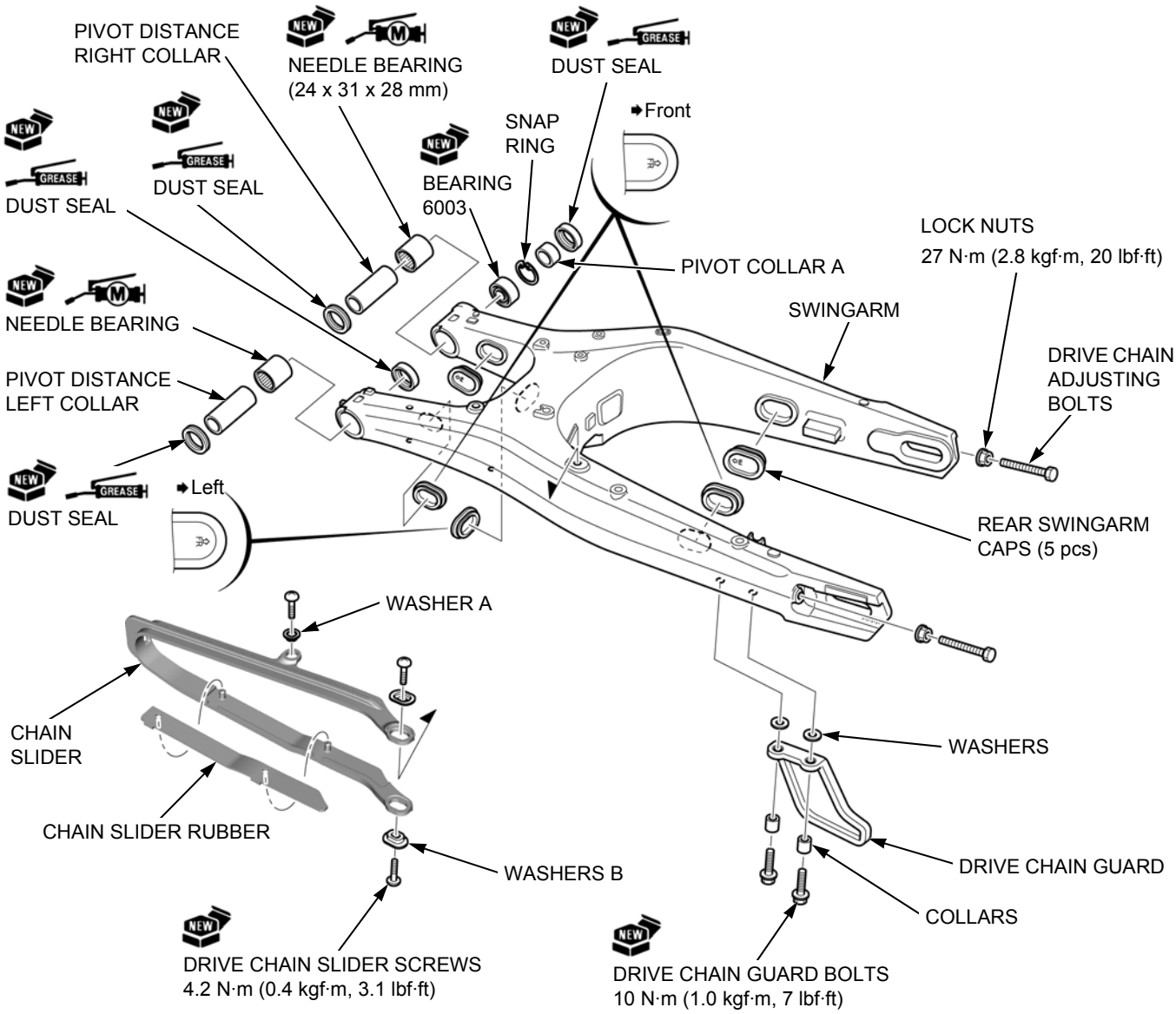
Install the following:

– Muffler/exhaust pipe
  – CRF1000A/D/AL/DL (page 2-16)
  – CRF1000A2/D2/AL2/DL2 (page 26-58)
– Engine oil filter (page 3-12)
– Ignition coil tray (page 26-124)
– Radiator (page 8-6)
– Radiator reserve tank (page 8-10)
– Rear brake pedal (page 19-15)
– Battery box (page 21-5)
– Shift pedal (CRF1000A/A2/AL/AL2) (page 12-21)
– Gearshift spindle cover (CRF1000A/A2/AL/AL2) (page 12-17)
– EOP switch (CRF1000A/A2/AL/AL2) (page 22-19)
– EOP sensor (CRF1000D/D2/DL/DL2) (page 22-20)
– Front side pipe stay (CRF1000A2/AL2/D2/DL2) (page 26-47)
– Lower cross pipe bracket (CRF1000A2/AL2/D2/DL2) (page 26-47)

Adjust the drive chain slack (page 3-16).

SWINGARM

DISASSEMBLY/ASSEMBLY



NOTE:

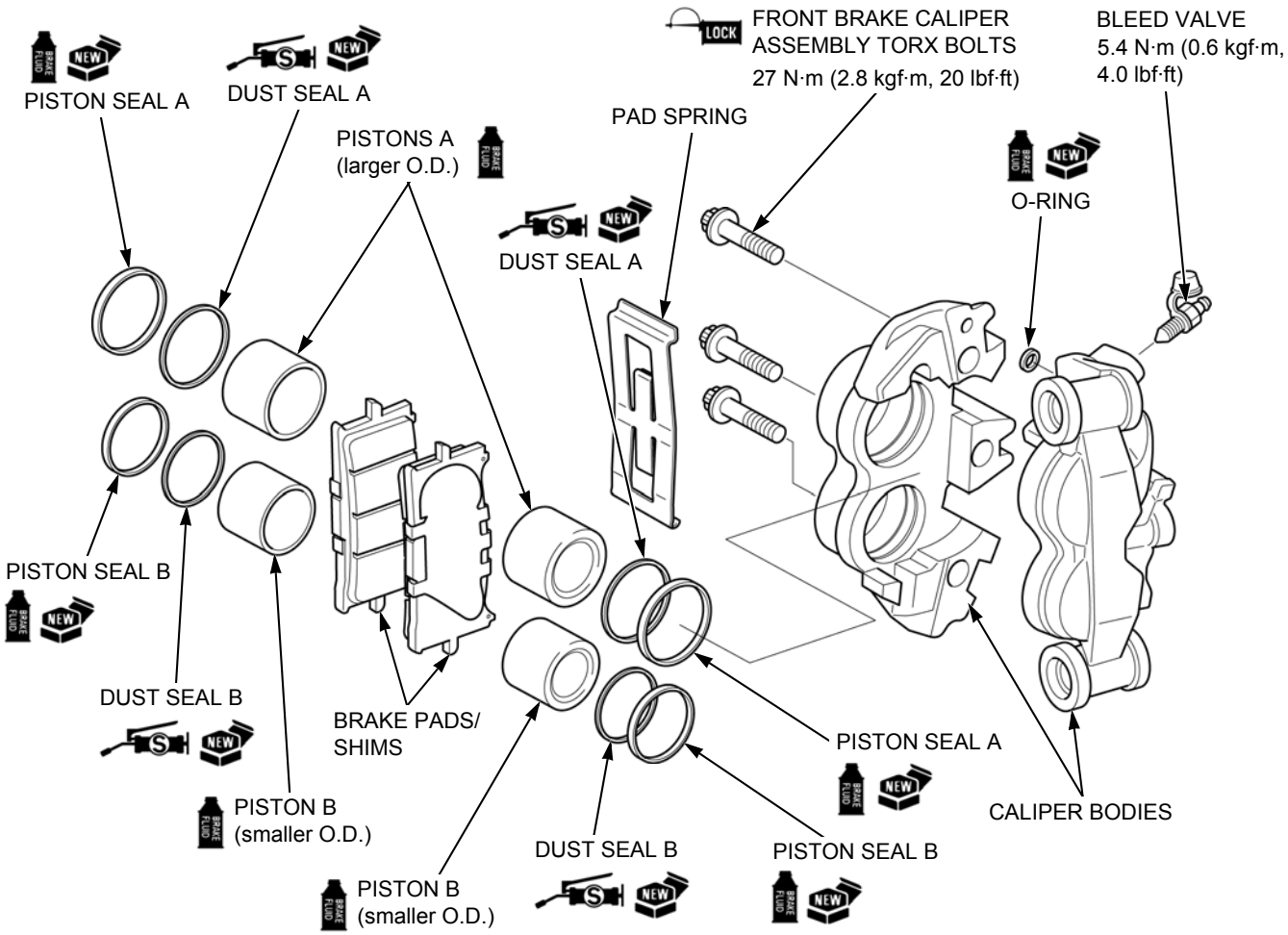
- Install the dust seals until it is flush with the swingarm surface.
- Apply ThreeBond 1521 or an equivalent to the swingarm cap mating surface.

FRONT BRAKE CALIPER

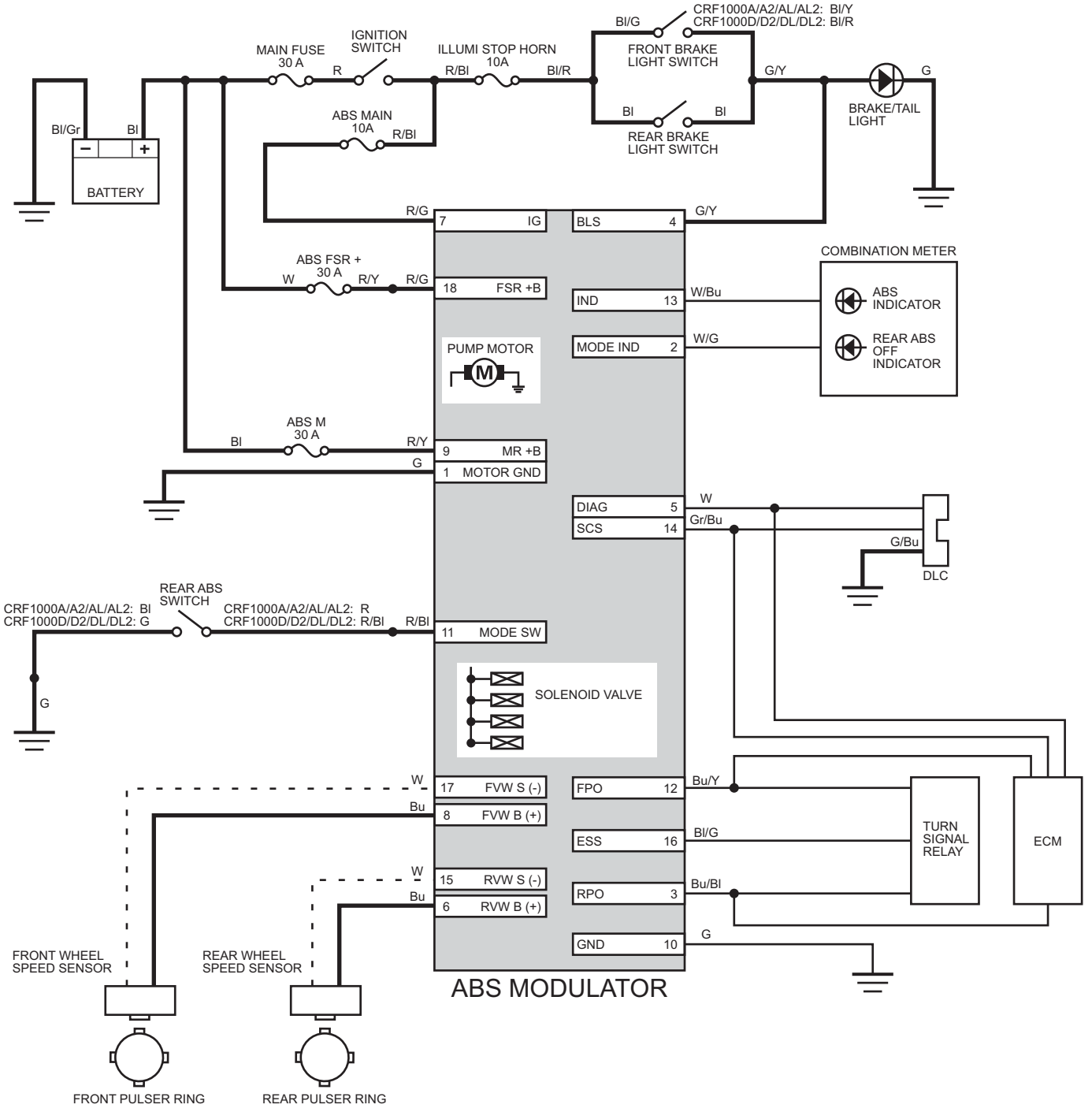
DISASSEMBLY/ASSEMBLY

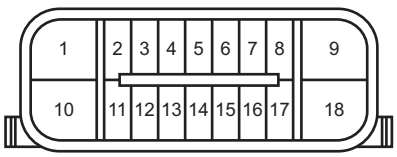
NOTE:

- Be careful not to damage each piston.
- When removing the caliper pistons with compressed air, place a shop towel over the piston to prevent damaging the piston and caliper body. Do not use high pressure or bring the nozzle too close to the fluid inlet.
- Mark the pistons to ensure correct reassembly.
- Be careful not to damage the piston sliding surface.
- Install each caliper piston in their proper locations.
  – Piston A: larger O.D.
  – Piston B: smaller O.D.
- Do not disassemble the caliper bodies unless necessary.



ABS SYSTEM DIAGRAM





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

Bl : Black
Bu : Blue
G : Green
Gr : Gray
R : Red
W : White
Y : Yellow

ABS DTC INDEX

NOTE:

- The ABS indicator might blink in the following cases. Correct the problem.
  – Incorrect tire pressure.
  – Tires not recommended for the motorcycle were installed (incorrect tire size).
  – Deformation of the wheel or tire.
- The ABS indicator might blink while riding under the following conditions. This is a temporary failure. Be sure to erase the DTC (page 20-6).
  Test-ride the motorcycle above 10 km/h (6 mph) and check the DTC (page 20-6). Ask the rider for the riding conditions in detail when the motorcycle is brought in for inspection.
  – The motorcycle has a continuous run on bumpy roads.
  – The front wheel leaves the ground for a long time when riding (wheelie).
  – Only either the front or rear wheel rotates.
  – The ABS operates continuously.
  – The ABS control unit has been disrupted by an extremely powerful radio wave (electromagnetic interference).

DTC	Function failure	Detection		Symptom/Fail-safe function	Refer to
		A	B		
–	ABS indicator malfunction • ABS modulator voltage input line • Indicator related wires • Combination meter • ABS modulator • Sub fuse ABS_MAIN 10 A			• ABS indicator never comes ON at all	20-10
				• ABS indicator stays ON at all	20-10
1-1	Front wheel speed sensor circuit malfunction • Wheel speed sensor or related wires	○	○	• Stops ABS operation	26-186
1-2	Front wheel speed sensor malfunction • Wheel speed sensor, pulser ring or related wires • Electromagnetic interference		○	• Stops ABS operation	26-186
1-3	Rear wheel speed sensor circuit malfunction • Wheel speed sensor or related wires	○	○	• Stops ABS operation	26-188
1-4	Rear wheel speed sensor malfunction • Wheel speed sensor, pulser ring or related wires • Electromagnetic interference		○	• Stops ABS operation	26-188
2-1	Front pulser ring • Pulser ring or related wires		○	• Stops ABS operation	26-186
2-3	Rear pulser ring • Pulser ring or related wires		○	• Stops ABS operation	26-188
3-1 3-2 3-3 3-4	Solenoid valve malfunction (ABS modulator)	○	○	• Stops ABS operation	26-189
4-1	Front wheel lock • Riding condition		○	• Stops ABS operation	26-186
4-2	Front wheel lock (Wheelie) • Riding condition		○		
4-3	Rear wheel lock • Riding condition		○	• Stops ABS operation	26-188
5-1	Pump motor lock • Pump motor (ABS modulator) or related wires • Fuse ABS M 30 A	○	○	• Stops ABS operation	26-190
5-2	Motor stuck off • Pump motor (ABS modulator) or related wires • Sub fuse ABS M 30 A	○	○	• Stops ABS operation	26-190
5-3	Motor stuck on • Pump motor (ABS modulator) or related wires	○	○	• Stops ABS operation	26-190

DTC	Function failure	Detection		Symptom/Fail-safe function	Refer to
		A	B		
5-4	Power supply relay malfunction • Power supply relay (ABS modulator) or related wires • Fuse ABS M 30 A	○	○	• Stops ABS operation	26-191
6-1	Power circuit under voltage • Input voltage (too low) • Sub fuse ABS_MAIN 10 A	○	○	• Stops ABS operation	26-192
6-2	Power circuit over voltage • Input voltage (too high)	○	○	• Stops ABS operation	
7-1	Tire malfunction • Tire size		○	• Stops ABS operation	26-193
8-1	ABS control unit malfunction • ABS modulator	○	○	• Stops ABS operation	26-193
8-2	Rear ABS off indicator • Rear ABS off indicator or related wire	○	○	• Rear ABS off mode function does not work	26-193

(A) Pre-start self-diagnosis (page 20-5)

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

ABS DTC TROUBLESHOOTING

NOTE:

- Perform inspection with the ignition switch OFF, unless otherwise specified.
- All connector diagrams in the troubleshooting are viewed from the terminal side.
- When the ABS modulator assembly is detected to be faulty, recheck the wire harness and connector connections closely before replacing it.
- After diagnostic troubleshooting, erase the DTC (page 20-6).
  Then test-ride the motorcycle to check that the ABS indicator operates normally during pre-start self-diagnosis (page 20-5).

DTC 1-1/1-2/2-1/4-1/4-2 (Front Wheel Speed Sensor Circuit/Front Wheel Speed Sensor/Front Pulser Ring/Front Wheel Lock)

NOTE:

- The ABS indicator might blink under unusual riding conditions (page 26-184). This is temporary failure.
  Erase the DTC (page 20-6).
  Then test-ride the motorcycle above 10 km/h (6 mph) to check that the ABS indicator operates normally (page 20-5).
- If DTC 4-1 is indicated, check the front brake for drag.

1. Front Wheel Speed Sensor Clearance Gap Inspection

Check the clearance gap between sensor bracket and pulser ring (page 20-21).

Is the clearance gap correct?

YES – GO TO STEP 2.

NO – Check the related parts for deformation and looseness, or damage and repair if necessary. Recheck the clearance gap.

2. Front Wheel Speed Sensor Condition Inspection

Inspect the area around the front wheel speed sensor:
Check for iron or other magnetic deposits between the pulser ring and wheel speed sensor and check the pulser ring slots for obstructions.
Check the installation condition of the pulser ring or wheel speed sensor for looseness.
Check the pulser ring and sensor tip for deformation or damage.

Are the sensor and pulser ring in good condition?

YES – GO TO STEP 3.

NO – Remove any deposits. Install properly or replace faulty part.

3. Front Wheel Speed Sensor Short Circuit Inspection

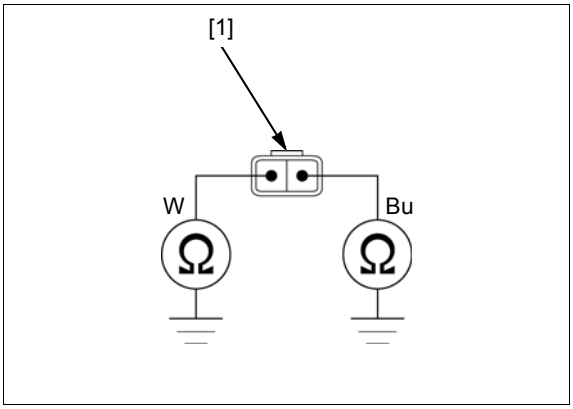
Turn the ignition switch OFF.
Disconnect the front wheel speed sensor 2P (Black) connector (page 20-20).
Check for continuity between each terminal of the sensor side 2P (Black) connector [1] and ground.

CONNECTION: White – Ground
Blue – Ground

Is there continuity?

YES – Faulty front wheel speed sensor

NO – GO TO STEP 4.



4. Front Wheel Speed Sensor Line Short Circuit Inspection

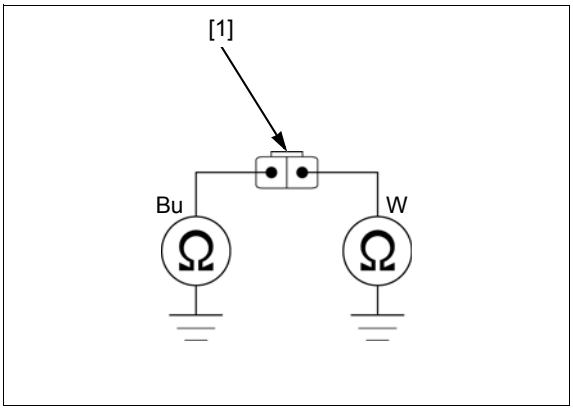
Disconnect the ABS modulator 18P (Black) connector (page 20-7).
Check for continuity between each terminal of the wire harness side 2P (Black) connector [1] and ground.

CONNECTION: Blue – Ground
White – Ground

Is there continuity?

YES – • Short circuit in the Blue wire
• Short circuit in the White wire

NO – GO TO STEP 5.



5. Front Wheel Speed Sensor Line Open Circuit Inspection

Short the wire harness side 18P (Black) connector [1] terminals with a jumper wire [2].

CONNECTION: 8 – 17

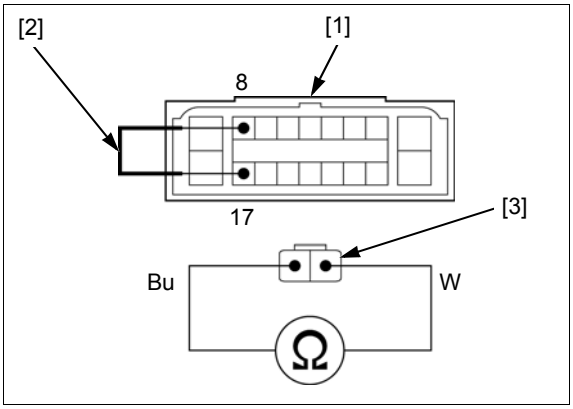
Check for continuity between the wire harness side 2P (Black) connector [3] terminals.

CONNECTION: Blue – White

Is there continuity?

YES – GO TO STEP 6.

NO – Open circuit in the Blue or White wire



6. Failure Reproduction with a Known Good Front Wheel Speed Sensor

Replace the front wheel speed sensor with a known good one (page 20-20).
Connect the 18P (Black) and front wheel speed sensor 2P (Blue) connectors.
Erase the DTC (page 20-6).
Test-ride the motorcycle above 10 km/h (6 mph).
Recheck the DTC (page 20-6).

Is the DTC 1-1, 1-2, 2-1, 4-1 or 4-2 indicated?

YES – Faulty ABS modulator

NO – Faulty original front wheel speed sensor

DTC 1-3/1-4/2-3/3-4-3 (Rear Wheel Speed Sensor Circuit/Rear Wheel Speed Sensor/Rear Pulser Ring/Rear Wheel Lock)

NOTE:

- The ABS indicator might blink under unusual riding conditions (page 26-184). This is temporary failure. Erase the DTC (page 20-6).
  Then test-ride the motorcycle above 10 km/h (6 mph) to check that the ABS indicator operates normally (page 20-6).
- If DTC 4-3 is indicated, check the rear brake for drag.

1. Rear Wheel Speed Sensor Clearance Gap Inspection

Check the clearance gap between sensor bracket and pulser ring (page 20-23).

Is the clearance gap correct?

YES – GO TO STEP 2.

NO – Check the related parts for deformation and looseness, or damage and repair if necessary. Recheck the clearance gap.

2. Rear Wheel Speed Sensor Condition Inspection

Inspect the area around the rear wheel speed sensor:
Check for iron or other magnetic deposits between the pulser ring and wheel speed sensor and check the pulser ring slots for obstructions.
Check the installation condition of the pulser ring or wheel speed sensor for looseness.
Check the pulser ring and sensor tip for deformation or damage.

Are the sensor and pulser ring in good condition?

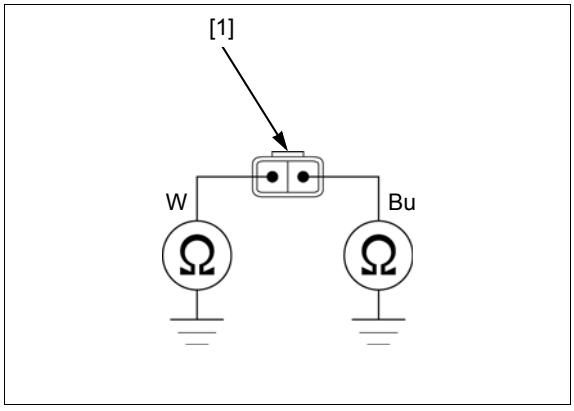
YES – GO TO STEP 3.

NO – Remove any deposits. Install properly or replace faulty part.

3. Rear Wheel Speed Sensor Short Circuit Inspection

Turn the ignition switch OFF.
Disconnect the rear wheel speed sensor 2P (Black) connector (page 20-23).
Check for continuity between each terminal of the sensor side 2P (Black) connector [1] and ground.

CONNECTION: Blue – Ground
White – Ground



Is there continuity?

YES – Faulty rear wheel speed sensor

NO – GO TO STEP 4.

4. Rear Wheel Speed Sensor Line Short Circuit Inspection

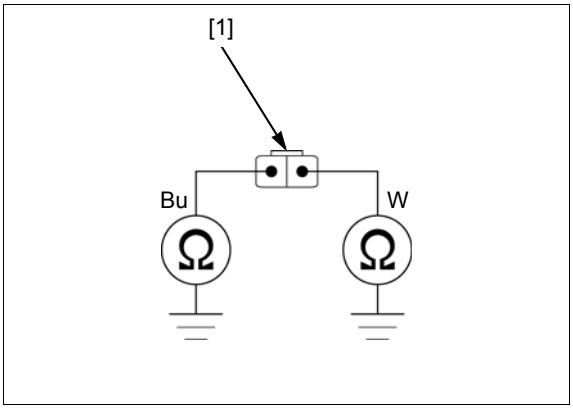
Disconnect the ABS modulator 18P (Black) connector (page 20-7).
Check for continuity between each terminal of the wire harness side 2P (Black) connector [1] and ground.

CONNECTION: White – Ground
Blue – Ground

Is there continuity?

YES – • Short circuit in the White wire
• Short circuit in the Blue wire

NO – GO TO STEP 5.



5. Rear Wheel Speed Sensor Line Open Circuit Inspection

Short the wire harness side 18P (Black) connector [1] terminals with a jumper wire [2].

CONNECTION: 6 – 15

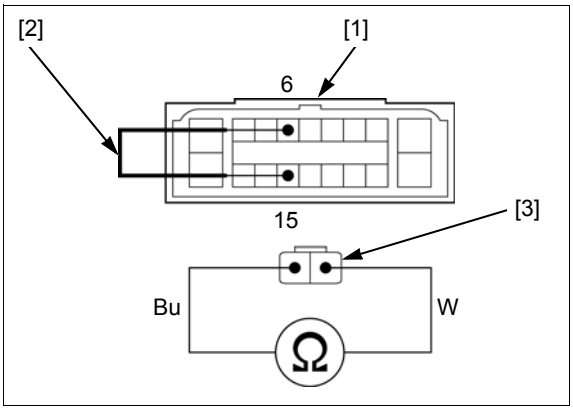
Check for continuity between the wire harness side 2P (Black) connector [3] terminals.

CONNECTION: White – Blue

Is there continuity?

YES – GO TO STEP 6.

NO – Open circuit in the White or Blue wire



6. Failure Reproduction with a Known Good Rear Wheel Speed Sensor

Replace the rear wheel speed sensor with a known good one (page 20-23).
Connect the 18P (Black) connector.
Erase the DTC (page 20-6).
Test-ride the motorcycle above 10 km/h (6 mph).
Recheck the DTC (page 20-6).

Is the DTC 1-3, 1-4, 2-3, or 4-3 indicated?

YES – Faulty ABS modulator

NO – Faulty original rear wheel speed sensor

DTC 3-1/3-2/3-3/3-4 (Solenoid Valve)

1. Failure Reproduction

Erase the DTC (page 20-6).
Test-ride the motorcycle above 10 km/h (6 mph).
Recheck the DTC (page 20-6).

Is the DTC 3-1, 3-2, 3-3 or 3-4 indicated?

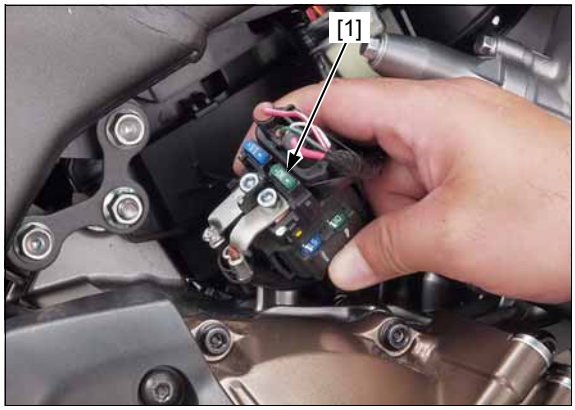
YES – Faulty ABS modulator

NO – Solenoid valve is normal (intermittent failure).

DTC 5-1/5-2/5-3 (Pump Motor)

1. Fuse Inspection

Turn the ignition switch OFF.
Remove the starter relay switch cover (page 6-5) and check for a blown sub fuse ABS M. 30 A [1].



Is the fuse blown?

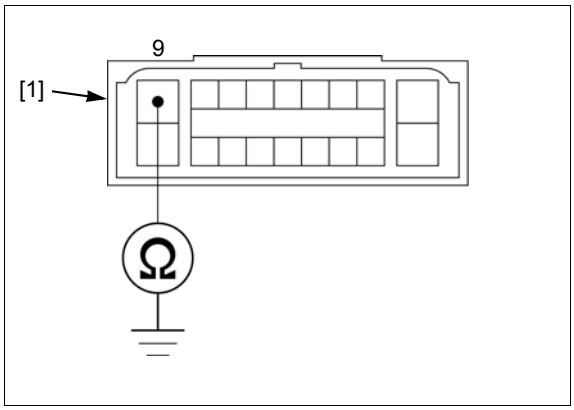
YES – GO TO STEP 2.

NO – GO TO STEP 3.

2. Motor Power Input Line Short Circuit Inspection

Disconnect the ABS modulator 18P (Black) connector (page 20-7).
With the sub fuse ABS M. 30 A removed, check for continuity between the wire harness side 18P (Black) connector [1] terminal and ground.

CONNECTION: 9 – Ground



Is there continuity?

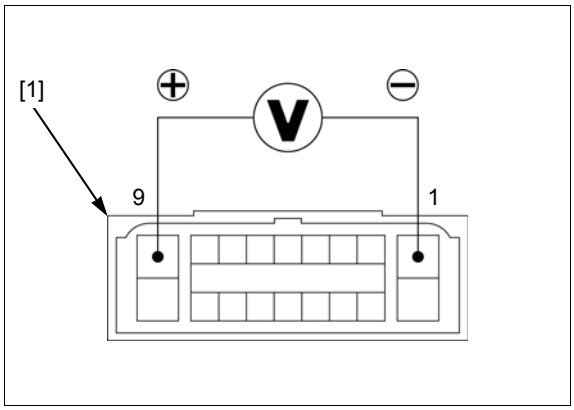
YES – Short circuit in the Red/yellow wire between the starter relay switch and 18P (Black) connector

NO – Intermittent failure. Replace the sub fuse ABS M. 30 A with a new one and recheck.

3. Motor Power Related Line Open Circuit Inspection

Install the sub fuse ABS M. 30 A.
Disconnect the ABS modulator 18P (Black) connector (page 20-7).
Measure the voltage between the wire harness side 18P (Black) connector [1] terminals.

CONNECTION: 9 (+) – 1 (–)



Is there battery voltage?

YES – GO TO STEP 4.

NO –
- Open circuit in the Black or Red/yellow wire between the 18P (Black) connector and battery
- Open circuit in the Green wire between the 18P (Black) connector and ground terminal

4. Failure Reproduction

Turn the ignition switch OFF.
Connect the 18P (Black) connector.
Erase the DTC (page 20-6).
Test-ride the motorcycle above 10 km/h (6 mph).
Recheck the DTC (page 20-6).

Is the DTC 5-1, 5-2, or 5-3 indicated?

YES – Faulty ABS modulator

NO – Pump motor is normal (intermittent failure)

DTC 5-4 (Fail-safe Relay)

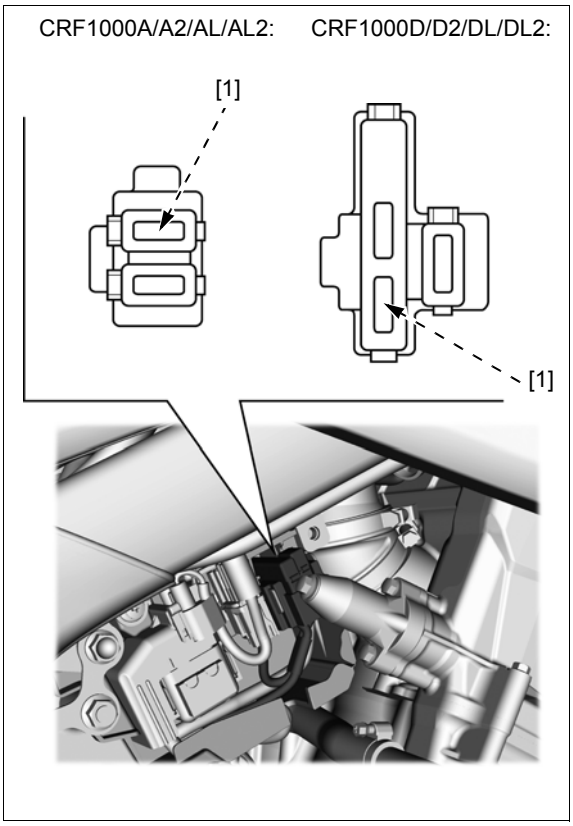
1. Fuse Inspection

Turn the ignition switch OFF.
Remove the battery box cover (page 6-5).
Remove the fuse case cover and check for a blown sub fuse ABS FSR 30 A [1].

Is the fuse blown?

YES – GO TO STEP 2.

NO – GO TO STEP 3.



2. Solenoid Power Input Line Short Circuit Inspection

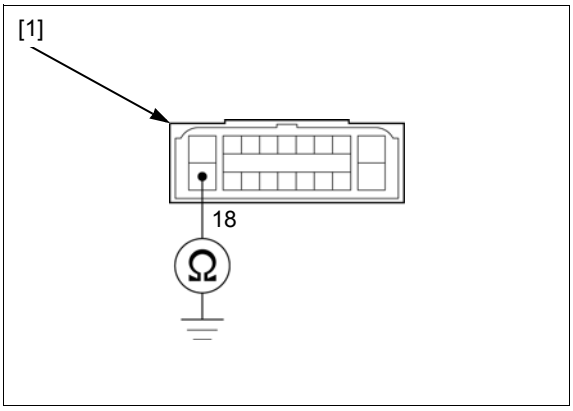
Disconnect the ABS modulator 18P (Black) connector (page 20-7).
With the sub fuse ABS FSR 30 A removed, check for continuity between the wire harness side 18P (Black) connector [1] terminal and ground.

CONNECTION: 18 – Ground

Is there continuity?

YES – Short circuit in the Red/green or Red/yellow wire between the 18P (Black) connector and sub fuse ABS FSR 30 A terminal

NO – Intermittent failure. Replace the sub fuse ABS FSR 30 A with a new one and recheck.



3. Solenoid Power Input Line Open Circuit Inspection

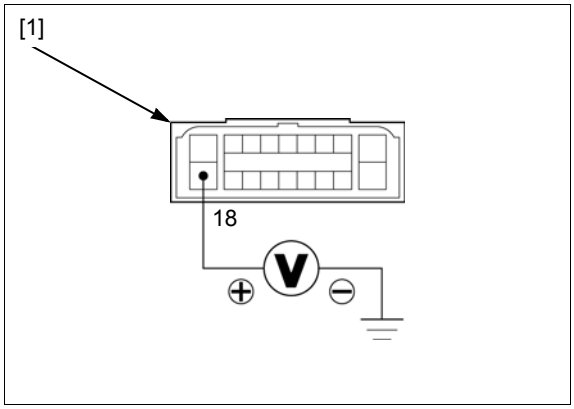
Install the sub fuse ABS FSR 30 A.
Disconnect the ABS modulator 18P (Black) connector (page 20-7).
Measure the voltage between the wire harness side 18P (Black) connector [1] terminal and ground.

CONNECTION: 18 (+) – Ground (–)

Is there battery voltage?

YES – GO TO STEP 4.

NO – Open circuit in the Red/green, Red/yellow or White wire between the 18P (Black) connector and battery



4. Failure Reproduction

Turn the ignition switch OFF.
Connect the ABS modulator 18P (Black) connector.
Erase the DTC (page 20-6).
Test-ride the motorcycle above 10 km/h (6 mph).
Recheck the DTC (page 20-6).

Is the DTC 5-4 indicated?

YES – Faulty ABS modulator

NO – Solenoid valve is normal (intermittent failure).

DTC 6-1/6-2 (Power Circuit)

1. Battery Voltage Inspection

Inspect the battery voltage (page 26-200).

Is the battery voltage normal?

YES – GO TO STEP 2.

NO – Replace the battery (page 26-199).

2. Charging Voltage Inspection

Inspect the battery charging voltage (page 26-201).

Is the voltage above 15.5 V?

YES – Faulty regulator/rectifier

NO – GO TO STEP 3.

3. Failure Reproduction

Erase the DTC (page 20-6).
Test-ride the motorcycle above 10 km/h (6 mph).
Recheck the DTC (page 20-6).

Is the DTC 6-1 or 6-2 indicated?

YES – Faulty ABS modulator

NO – Power circuit is normal (intermittent failure)

DTC 7-1 (Tire Size)

NOTE:

- Check the following and correct the faulty part.
  – Incorrect tire pressure
  – Tires not recommended for the motorcycle were installed (incorrect tire size)
  – Deformation of the wheel or tire

1. Failure Reproduction

If the above items are normal, recheck the DTC as follows:
Erase the DTC (page 20-6).
Test-ride the motorcycle above 10 km/h (6 mph).
Recheck the DTC (page 20-6).

Is the DTC 7-1 indicated?

YES – Faulty ABS modulator

NO – Tire size is normal (intermittent failure)

DTC 8-1 (ABS Control Unit)

1. Failure Reproduction

Erase the DTC (page 20-6).
Test-ride the motorcycle above 10 km/h (6 mph).
Recheck the DTC (page 20-6).

Is the DTC 8-1 indicated?

YES – Faulty ABS modulator

NO – ABS control unit (ABS modulator) is normal (intermittent failure)

DTC 8-2 (Rear ABS Off Indicator)

1. Rear ABS Off Indicator Inspection 1

Turn the ignition switch OFF.
Disconnect the ABS modulator 18P (Black) connector (page 20-7).
Turn the ignition switch ON and check the rear ABS off indicator.

Is the rear ABS off indicator indicated?

YES – GO TO STEP 2.

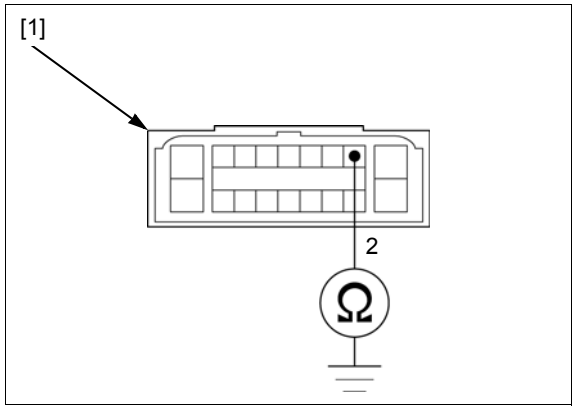
NO – GO TO STEP 3.

2. Rear ABS Off Indicator Line Short Circuit Inspection

Turn the ignition switch OFF.
Disconnect the combination meter 32P (Gray) connector (page 22-12).
Check tor continuity between the wire harness side 18P (Black) [1] connector and ground

TOOL:
Test probe **07ZAJ-RDJA110**

CONNECTION: 2 – Ground



Is there continuity?

YES – Short circuit in the White/green wire

NO – Replace the combination meter with a new one and recheck (page 22-12).

3. Rear ABS Off Indicator Inspection 2

Ground the wire harness side 18P (Black) connector [1] with a jumper wire [2].

TOOL:
Test probe 07ZAJ-RDJA110

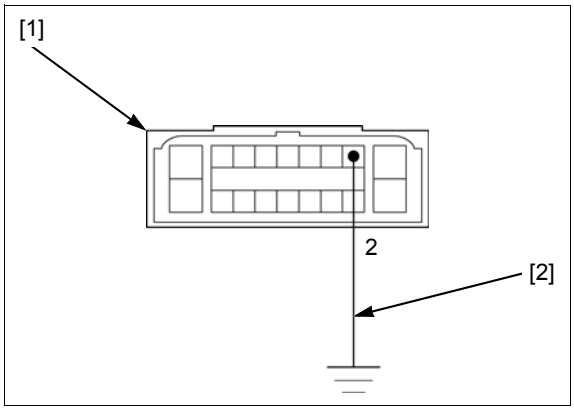
CONNECTION: 2 – Ground

Check the rear ABS off indicator.

Is the rear ABS off indicator off mode indicated?

YES – GO TO STEP 5.

NO – GO TO STEP 4.



4. Rear ABS Off Indicator Line Open Circuit Inspection

Turn the ignition switch OFF.
Disconnect the combination meter 32P (Gray) connector (page 22-12).
Check tor continuity between the wire harness side 18P (Black) [1] and 32P (Gray) [2] connectors.

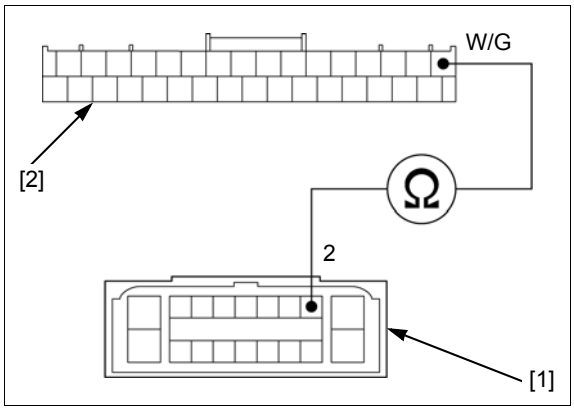
TOOL:
Test probe 07ZAJ-RDJA110

CONNECTION: 2 – White/Green

Is there continuity?

YES – Replace the combination meter with a new one and recheck (page 22-12).

NO – Open circuit in the White/green wire



5. Failure Reproduction

Erase the DTC (page 20-6).
Recheck the DTC (page 20-6).

Is the DTC 8-2 indicated?

YES – Faulty ABS modulator

NO – ABS control unit is normal (intermittent failure)

ABS MODULATOR

NOTICE

Spilled fluid can damage painted, plastic or rubber parts. Place a rag over these parts whenever the system is serviced.

NOTE:

- When removing the oil bolt, cover the end of the brake hose to prevent contamination.
- Be careful not to bend or damage the brake pipes during assembly or removal.

REMOVAL/INSTALLATION

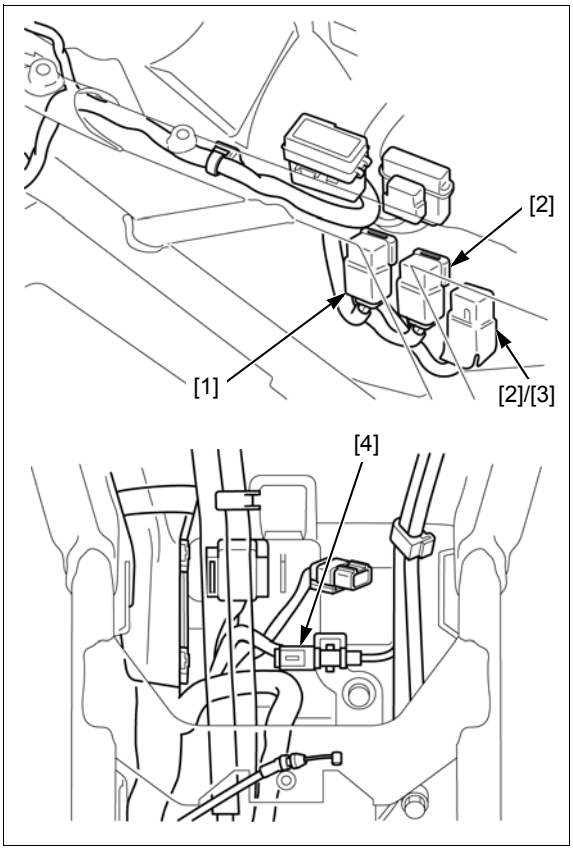
Remove the following:

– Fuel tank (page 26-128)
– ETC tray (page 26-49)

Release the following:

– Fuel pump relay [1]
– Headlight relay [2]
– Engine stop/FI relay [3]

Disconnect the rear wheel speed sensor 2P (Black) connector [4].



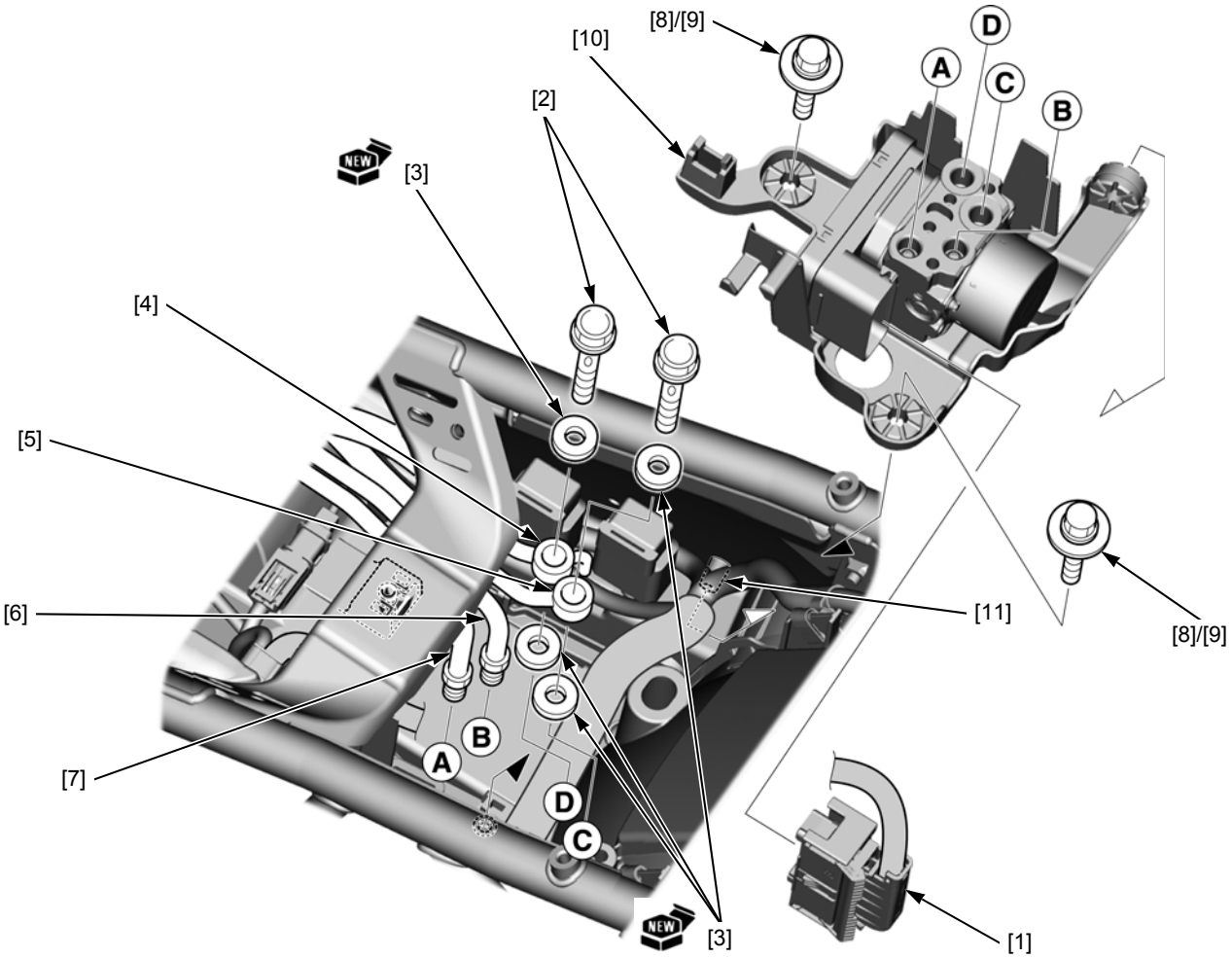
Disconnect the ABS modulator 18P (Black) connector [1].

Remove the following:

– Oil bolts [2]
– Sealing washers [3]
– Rear brake hose A [4]
– Rear brake hose B [5]
– Brake pipe joint A [6]
– Brake pipe joint B [7]

Remove the bolts [8] and washers [9].

Remove the ABS modulator assembly [10] by releasing its grommet from the rear fender boss [11].



Remove the following from the modulator tray [1]:

– Bolts [2]
– ABS modulator [3]
– Grommets [4]

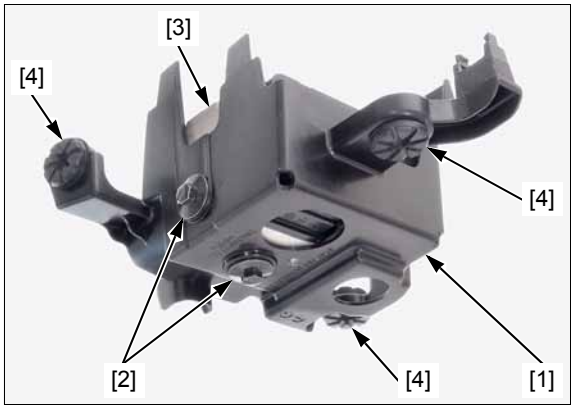
Installation is in the reverse order of removal.

NOTE:

- Apply brake fluid to the joint nut threads.
- Replace the sealing washers with new ones.

TORQUE:

Brake hose oil bolt:
34 N·m (3.5 kgf·m, 25 lbf·ft)
Brake pipe joint:
14 N·m (1.4 kgf·m, 10 lbf·ft)



BATTERY/CHARGING SYSTEM SERVICE INFORMATION

GENERAL

⚠ WARNING

- If electrolyte gets on your skin or clothes, flush with clean water such as tap water etc. immediately.
- If electrolyte gets on your eyes, flush with large quantities of water immediately and consult an eye doctor.

NOTICE

- *Do not jump-start the motorcycle. It may blow out the built-in fuse in the lithium ion battery.*
- *Always turn OFF the ignition switch before disconnecting any electrical component.*
- *Some electrical components may be damaged if terminals or connectors are connected or disconnected while the ignition switch is ON and current is present.*

- For a battery remaining in a stored motorcycle, disconnect the negative battery cable from the battery terminal.
- Before troubleshooting the charging system, check for proper use and maintenance of the battery. Check if the battery is frequently under heavy load.
- When checking the charging system, always follow the steps in the troubleshooting flow chart (page 26-198).
- For alternator/stator servicing (page 11-2).
- The following color codes are used throughout this section.

Be = Beige	Bl = Black	Br = Brown	Bu = Blue	G = Green	Gr = Gray
Lb = Light blue	Lg = Light green	O = Orange	P = Pink	R = Red	V = Violet
W = White	Y = Yellow				

- For extended storage, remove the battery and store it in a cool space.
- The battery can be damaged if overcharged or undercharged, or if left to discharge for a long period. These same conditions contribute to shortening the “life span” of the battery.
- The battery will self-discharge when the motorcycle is not in use. For this reason, charge the battery at a suitable time to prevent it from discharging.

BATTERY CHARGING

- Turn power ON/OFF at the charger, not at the battery terminal.
- These models are equipped with the Lithium Ion (Li-Ion) battery. To charge the battery, use only the specified battery charger (C-1401B manufactured by ELIIY Power Co., Ltd.). Follow the manufacturer’s instructions.
- Quick charging should only be done in an emergency; slow charging is preferred.

BATTERY TESTING

Refer to the instruction in the Operation Manual for the recommended battery tester for details about battery testing.
The recommended battery tester puts a “load” on the battery so that the actual battery condition can be measured.

Battery charger: C-1401B manufactured by ELIIY Power Co., Ltd.

BATTERY/CHARGING SYSTEM TROUBLESHOOTING

BATTERY IS DAMAGED OR WEAK

1. BATTERY TEST

Remove the battery (page 26-199).

Check the battery condition using the recommended battery tester.

Battery charger:
C-1401B manufactured by ELIIY Power Co., Ltd.

Is the battery good condition?

YES – GO TO STEP 2.

NO – Faulty battery

2. CURRENT LEAKAGE TEST

Install the battery (page 26-199).

Check the battery current leakage test (page 26-200).

Is the current leakage below 0.66 mA?

YES – GO TO STEP 4.

NO – GO TO STEP 3.

3. CURRENT LEAKAGE TEST WITHOUT REGULATOR/RECTIFIER CONNECTOR

Disconnect the regulator/rectifier 3P (Black) connector and recheck the battery current leakage.

Is the current leakage below 0.66 mA?

YES – Faulty regulator/rectifier

NO –
- Shorted wire harness
- Faulty ignition switch

4. ALTERNATOR CHARGING COIL INSPECTION

Check the alternator charging coil (page 21-9).

Is the alternator charging coil resistance within 0.1 – 1.0 Ω (20°C/68°F)?

YES – GO TO STEP 5.

NO – Faulty charging coil

5. CHARGING VOLTAGE INSPECTION

Measure and record the battery voltage using a digital multimeter (page 26-200).

Start the engine.

Measure the charging voltage (page 26-201).

Compare the measurement to result of the following calculation.

STANDARD:
Measured BV < Measured CV < 15.5 V
- **BV = Battery Voltage**
- **CV = Charging Voltage**

Is the measured charging voltage within the standard voltage?

YES – Faulty battery

NO – GO TO STEP 6.

6. REGULATOR/RECTIFIER SYSTEM INSPECTION

Check the voltage and resistance at the regulator/rectifier connector (page 21-8).

Are the results of checked voltage and resistance correct?

YES – Faulty regulator/rectifier

NO –
- Open circuit in related wire
- Shorted wire harness
- Loose or poor contacts of related terminal

STARTER MOTOR CANNOT BE TURNED

1. **STARTER SYSTEM INSPECTION**

   Check that the starter motor can be turned.

   Can the starter motor be turned?

   YES – GO TO STEP 2.

   NO – Check the starter system (page 6-2).

2. **BATTERY CONDITION INSPECTION**

   Check the battery for cracked or deformed case, electrolyte leakage, nasty smell or heat generation.

   Is the battery in above conditions?

   YES – Follow the emergency manual.

   NO – GO TO STEP 3.

3. **BATTERY VOLTAGE INSPECTION**

   Leave the battery for 30 minutes and check the battery voltage.

   Is the voltage below 6 V or above 14.6?

   YES – Replace the battery (page 26-199).

   NO – GO TO STEP 4.

4. **CHARGING CONDITION INSPECTION**

   Charge the battery using the specified battery charger (C-1401B manufactured by ELIIY Power Co., Ltd.).

   Is the battery charged?

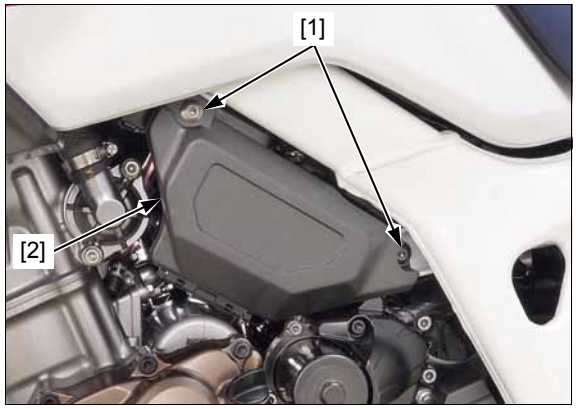
   YES – Battery is normal.

   NO – Replace the battery (page 26-199).

BATTERY

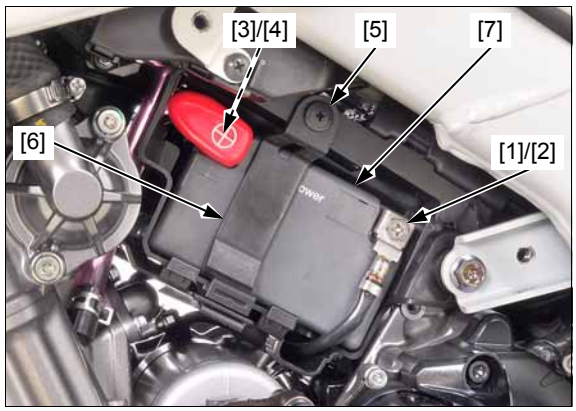
REMOVAL/INSTALLATION

Remove the socket bolts [1] and tool box [5].



Always turn the ignition switch OFF before removing the battery.

Remove the bolt [1] and disconnect the negative (-) terminal [2] first.
Then remove the bolt [3] and disconnect the positive (+) terminal [4].



Remove the trim clip [5].

Open the battery holder [6].

Remove the battery [7].

Install the battery in the reverse order of removal.

NOTE:

- Connect the positive (+) terminal first and then the negative (-) terminal.
- For digital clock setting procedure (page 22-15).

VOLTAGE INSPECTION

Remove the tool box (page 26-199).

Measure the battery voltage using a commercially available digital multimeter.

VOLTAGE (20°C/68°F):

Fully charged:	**13.5 – 14.0 V**
Needs charging:	**Below 10.8 V**

BATTERY TESTING

Remove the battery (page 26-199).

Refer to the instructions that are appropriate to the battery testing equipment available to you.

TOOL:

Battery charger	**C-1401B manufactured by ELIIY Power Co., Ltd.**

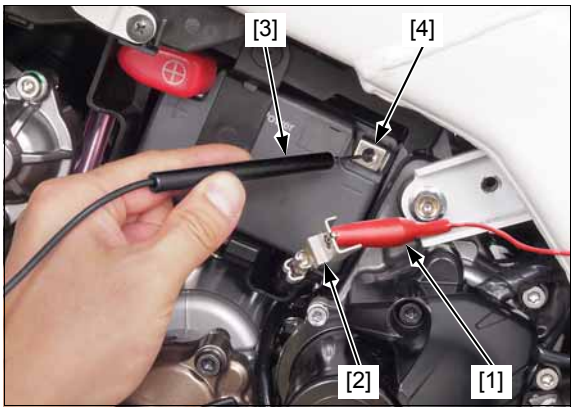
CHARGING SYSTEM INSPECTION

CURRENT LEAKAGE TEST

Turn the ignition switch OFF.

Disconnect the negative (–) terminal (page 26-199).

Connect the ammeter (+) probe [1] to the negative (–) cable [2] and the ammeter (–) probe [3] to the battery (–) terminal [4].



With the ignition switch OFF, check for current leakage.

NOTE:

- When measuring current using a tester, set it to a high range, and then bring the range down to an appropriate level. Current flow higher than the range selected may blow the fuse in the tester.
- While measuring current, do not turn the ignition switch ON. A sudden surge of current may blow the fuse in the tester.

SPECIFIED CURRENT LEAKAGE:
0.66 mA maximum

If current leakage exceeds the specified value, a shorted circuit is the probable cause.
Locate the short by disconnecting connections one by one and measuring the current.

CHARGING VOLTAGE INSPECTION

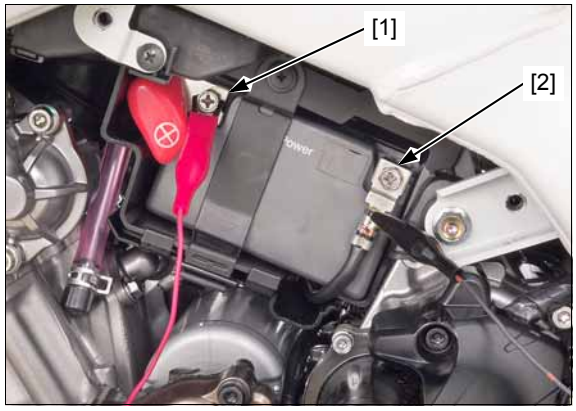
NOTE:

- Make sure the battery is in good condition before performing this test.

Start the engine and warm it up to the operating temperature; then stop the engine.

Remove the tool box (page 26-199).

Connect the multimeter between the positive terminal [1] and negative terminal [2] of the battery.



NOTE:

- To prevent a short, make absolutely certain which are the positive and negative terminals or cable.
- Do not disconnect the battery or any cable in the charging system without first switching off the ignition switch. Failure to follow this precaution can damage the tester or electrical components.

With the headlight on high beam, restart the engine. Measure the voltage on the multimeter when the engine runs at 5,000 min^{-1} (rpm).

STANDARD:

Measured BV < Measured CV < 15.5 V

- **BV = Battery Voltage (page 26-200)**
- **CV = Charging Voltage**

If the charging voltage reading is out of the specification, inspect the regulator/rectifier (page 21-8).

TURN SIGNAL LIGHT/RELAY

AUTO TURN SIGNAL CANCEL SYSTEM INSPECTION

Check the following:

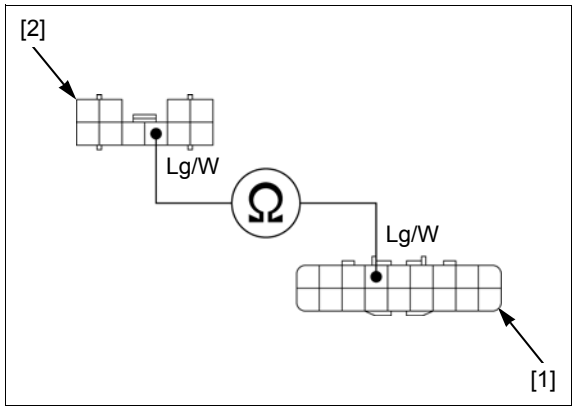
– No ABS DTC indicated (page 20-6)
– Turn signal light (page 22-9)
– Left handlebar switch (page 22-23)
– Set switch line open circuit (page 26-201)
– ABS modulator output line open circuit (page 26-202)

If any parts are OK, replace the turn signal light relay with a known good one and recheck (page 22-9).

SET SWITCH LINE OPEN CIRCUIT

Disconnect the following:

– Turn signal light relay 18P connector (page 22-9)
– Left handlebar switch 10P connector (page 22-23)



Check for continuity between the turn signal light relay 18P connector [1] and Left handlebar switch 10P connector [2] terminals.

CONNECTION:

Light green/white – Light green/white

There should be continuity.

If there is no continuity, check for open circuit in Light green/white wire.

ABS MODULATOR OUTPUT LINE OPEN CIRCUIT

Disconnect the following:

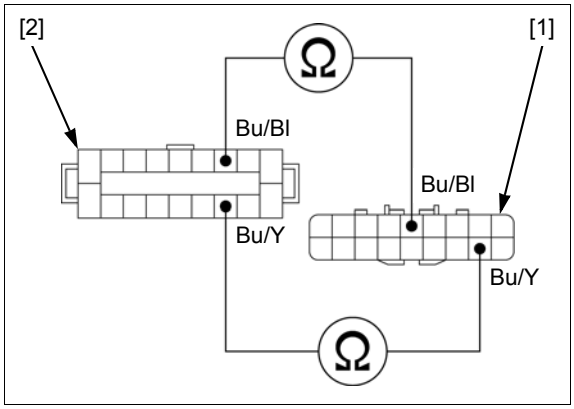
– Turn signal light relay 18P connector (page 22-9)
– ABS modulator 18P connector (page 20-7)

Check for continuity between the turn signal light relay 18P connector [1] and ABS modulator 18P connector [2] terminals.

CONNECTION:
Blue/black – Blue/black
Blue/yellow – Blue/yellow

There should be continuity.

If there is no continuity, check for open circuit in Blue/black or Blue/yellow wire.



ESS SYSTEM INSPECTION (Except KO model)

NOTE:
• While the hazard system is operating, the ESS system will not operate.

Check the following:

– No ABS DTC indicated (page 20-6)
– Turn signal light (page 22-9)
– Turn signal light relay (page 22-9)
– Brake light switch (page 22-24)
– Brake light switch line open circuit (page 26-203)
– Brake light switch line short circuit (page 26-203)
– ESS line open circuit (page 26-203)
– ESS line short circuit (page 26-203)
– Hazard flasher system (page 22-9)

NOTE:
• Even if any turn signal lights are abnormal, other normal turn signal lights will work with the ESS system.
• If the ESS system operates at all times, replace the ABS modulator with a new one (page 26-195).

To forcibly activate the ESS system, perform the procedure as follows:

1. Connect the SCS short connector to the DLC (page 25-25).
2. Turn the ignition switch ON.
3. Apply the front or rear brake and check the turn signal lights operation.

   The turn signal lights should be blinking with the brake applied and turning OFF with the brake released.

BRAKE LIGHT SWITCH LINE OPEN CIRCUIT INSPECTION

Disconnect the following:

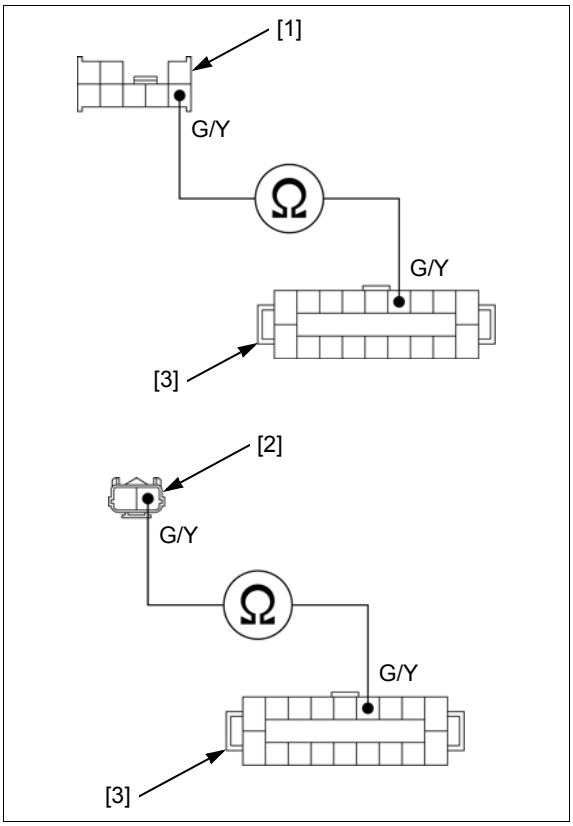
– Right handlebar switch 8P connector (page 22-23)
– Rear brake light switch 2P (Gray) connector (page 22-24)
– ABS modulator 18P connector (page 20-7)

Check for continuity between the right handlebar switch 8P [1], rear brake light switch 2P (Gray) [2] and ABS modulator 18P [3] connector terminals at the harness side.

CONNECTION:
Green/yellow – Green/yellow
Green/yellow – Green/yellow

There should be continuity.

If there is no continuity, check for open circuit in Green/yellow or Blue/black wire.



BRAKE SWITCH LINE SHORT CIRCUIT INSPECTION

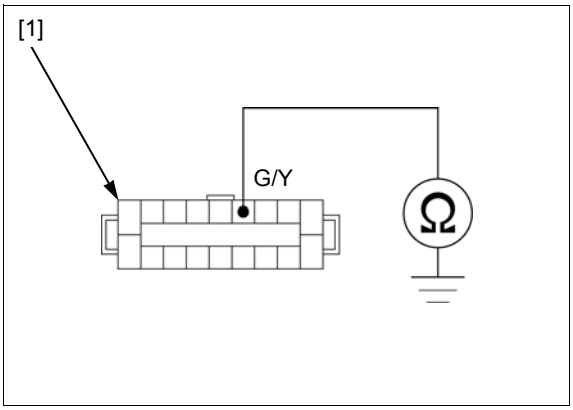
Disconnect the ABS modulator 18P connector (page 20-7).

Check for continuity between the ABS modulator 18P connector [1] terminal and ground.

CONNECTION: Green/yellow – Ground

There should be no continuity.

If there is continuity, check for short circuit in Green/yellow wire.



ESS LINE OPEN CIRCUIT INSPECTION

Disconnect the following:

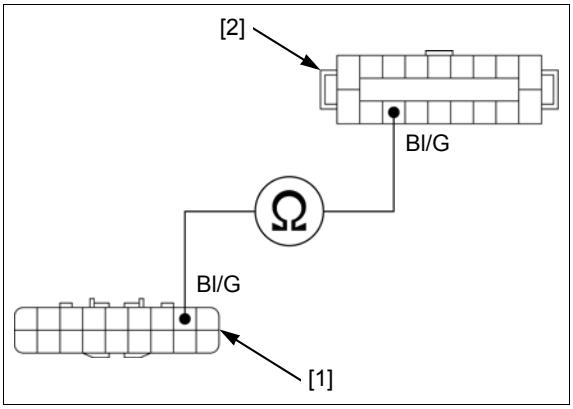
– Turn signal light relay 18P connector (page 22-9)
– ABS modulator 18P connector (page 22-9)

Check for continuity between the turn signal relay 18P connector [1] and ABS modulator 18P connector [2] terminals at the harness side.

CONNECTION: Black/green – Black/green

There should be continuity.

If there is no continuity, check for open circuit in Black/green wire.



ESS LINE SHORT CIRCUIT INSPECTION

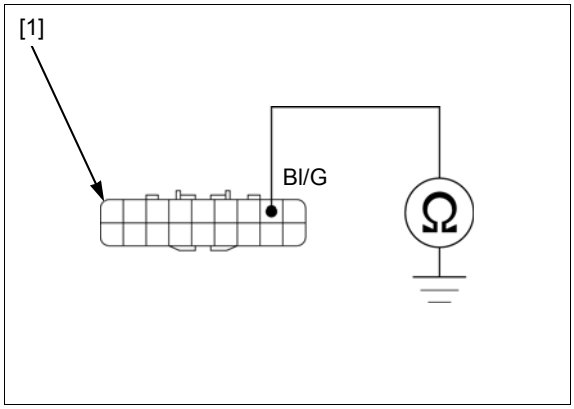
Disconnect the turn signal light relay 18P connector (page 22-9).

Check for continuity between the turn signal relay 18P connector [1] terminal and ground.

CONNECTION: Black/green – Ground

There should be no continuity.

If there is continuity, check for short circuit in Black/green wire.



COMBINATION METER

POWER/GROUND LINE INSPECTION

Remove the front cover (page 26-44).

Remove the connector cover and disconnect the combination meter 32P (Gray) connector (page 22-12).

Check the following at the wire harness side connector terminals of the combination meter.

NOTE:

- If the power and ground lines are OK, replace the combination meter (page 22-12).

POWER INPUT LINE

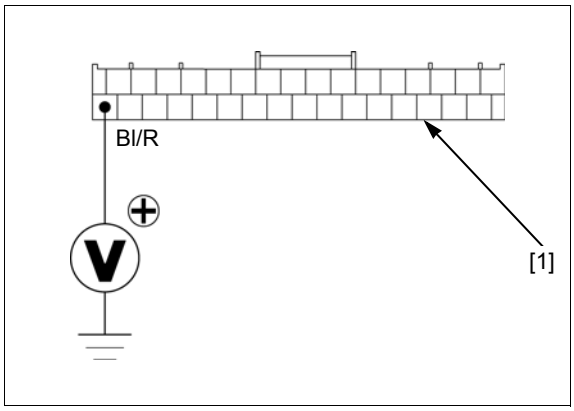
Measure the voltage at the wire harness side 32P (Gray) connector [1] and ground.

CONNECTION: Black/red (+) – Ground (–)
STANDARD: Battery voltage

There should be battery voltage with the ignition switch turned ON.

If there is no voltage, check the following:

– Open circuit in the Black/red wire
– Blown sub fuse ILLUMI STOP 10 A



BACK-UP VOLTAGE LINE

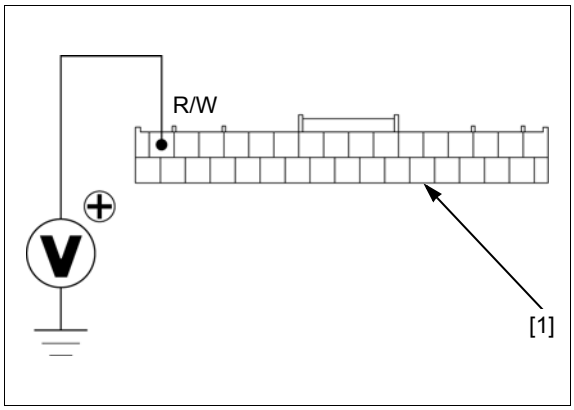
Measure the voltage at the wire harness side 32P (Gray) connector [1] and ground.

CONNECTION: Red/white (+) – Ground (–)
STANDARD: Battery voltage

There should be battery voltage at all times.

If there is no voltage, check the following:

– Open circuit in the Red/white wire
– Blown sub fuse CLOCK TURN 10 A



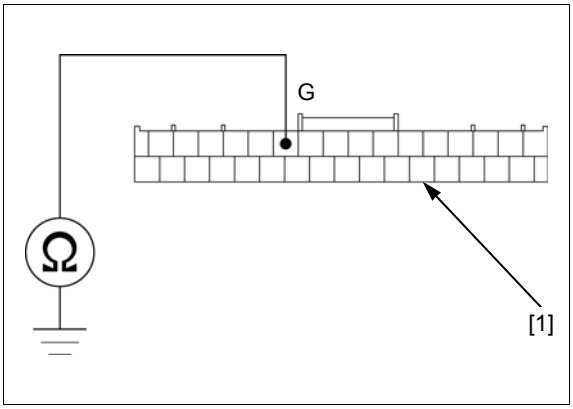
GROUND LINE

Check for continuity at the wire harness side 32P (Gray) connector [1] and ground.

CONNECTION: Green – Ground

There should be continuity.

If there is no continuity, check for open circuit in the Green wire.



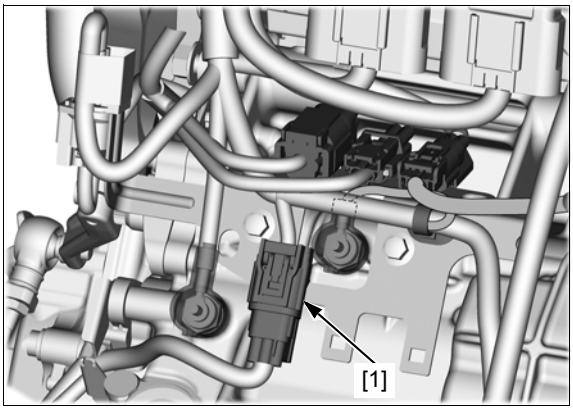
GEAR POSITION SENSOR (CRF1000A/A2/AL/AL2)

REMOVAL/INSTALLATION

Remove the left rear cover (page 2-10).

Support the motorcycle using a safety stand or hoist, raise the rear wheel off the ground.
Remove the rear shock absorber (page 18-8).

Release the gear position sensor 3P (Black) connector [1] from the connector clip stay and disconnect it.



Remove the following:

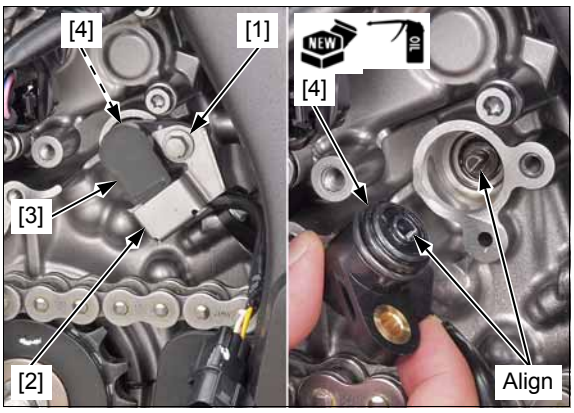
– Bolt [1]
– Sensor cover [2]
– Gear position sensor [3]
– O-ring [4]

Installation is in the reverse order of removal.

NOTE:

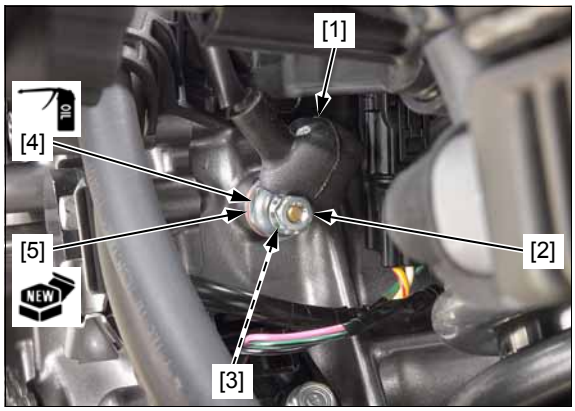
- Always replace the O-ring with a new one.
- Apply engine oil to a new O-ring.
- Align the flat surfaces of the gear position sensor and shift drum end.
- Route the wires properly (page 26-17).

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



NEUTRAL SWITCH (CRF1000A/AL/A2/AL2)

REMOVAL/INSTALLATION



Release the rubber cap [1].

Remove the nut [2] and disconnect the neutral switch terminal [3].

Remove the neutral switch [4] and sealing washer [5].

Installation is in the reverse order of removal.

NOTE:

- Apply engine oil to the neutral switch threads and seating surface.
- Replace the sealing washer with a new one.

TORQUE:

Neutral switch:
12 N·m (1.2 kgf·m, 9 lbf·ft)

Neutral switch terminal nut:
1.7 N·m (0.2 kgf·m, 1.3 lbf·ft)

INSPECTION

Remove the neutral switch terminal nut and neutral switch wire terminal (page 26-206).

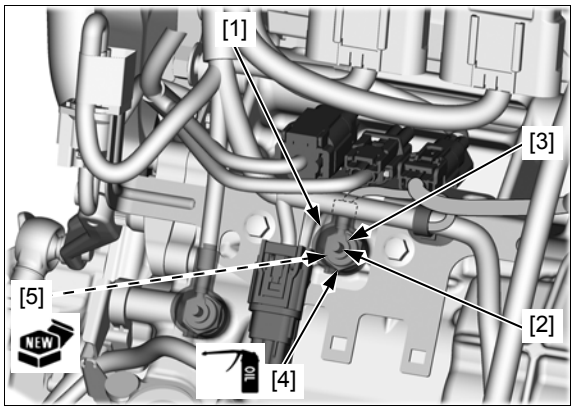
Shift the transmission into neutral.

Check for continuity between the neutral switch terminal and ground.

There should be continuity with the transmission in neutral, and no continuity when the transmission is in gear.

SHIFT SPINDLE SWITCH (CRF1000A/AL/A2/AL2)

REMOVAL/INSTALLATION



Release the rubber cap [1].

Remove the nut [2] and disconnect the shift spindle switch terminal [3].

Remove the shift spindle switch [4] and sealing washer [5].

Installation is in the reverse order of removal.

NOTE:

- Apply engine oil to the shift spindle switch threads and seating surface.
- Replace the sealing washer with a new one.

TORQUE:

Shift spindle switch:
12 N·m (1.2 kgf·m, 9 lbf·ft)

Shift spindle switch terminal nut:
1.7 N·m (0.2 kgf·m, 1.3 lbf·ft)

GRIP HEATER (CRF1000A2/AL2/D2/DL2)

REMOVAL/INSTALLATION

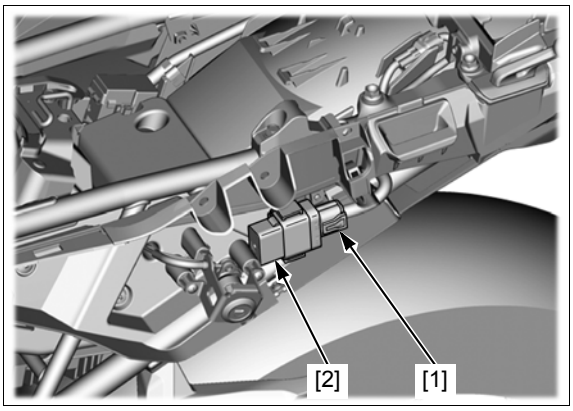
GRIP HEATER CONTROLLER

Remove the left side cover (page 2-10).

Disconnect the grip heater controller 10P (Black) connector [1].

Remove the grip heater controller [2].

Installation is in the reverse order of removal.

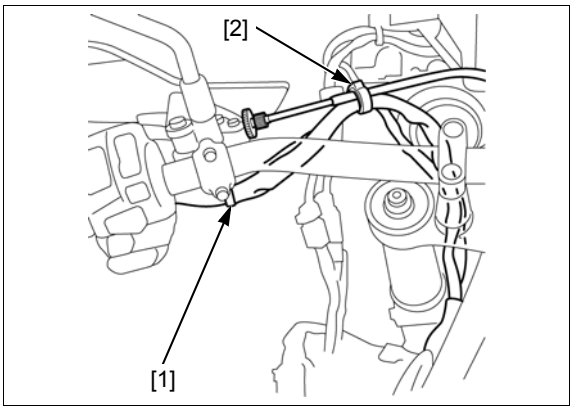


LEFT GRIP HEATER

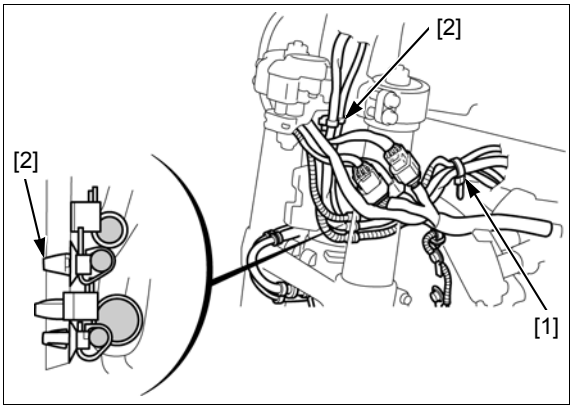
Remove the following:

– Left middle cowl (page 26-42)
– Knuckle guard (page 2-5)

Release the wire band [1] and wire clip [2].

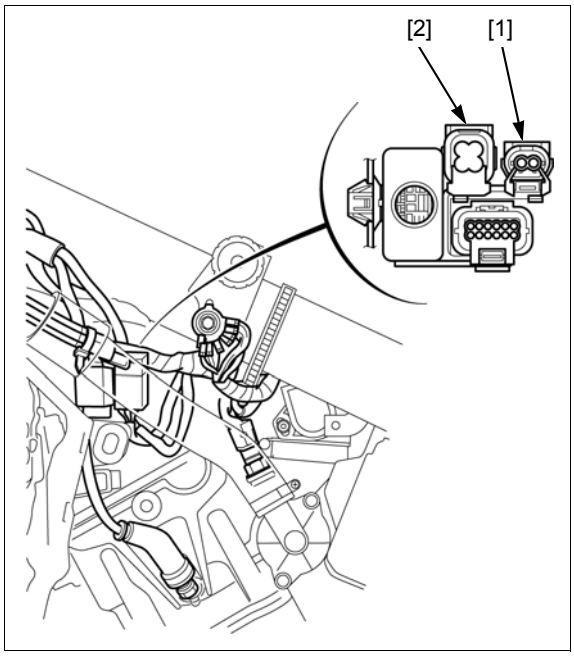


Release the wire band [1] and wire clips [2].

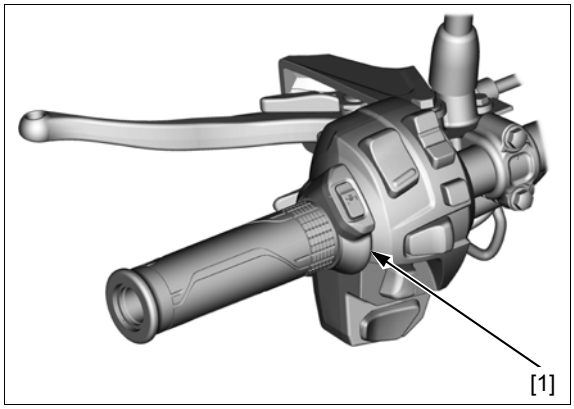


Disconnect the following:

– Left grip heater 2P (Black) connector [1]
– Left grip heater 4P (Black) connector [2]



Remove the left grip heater [1] from the handlebar.



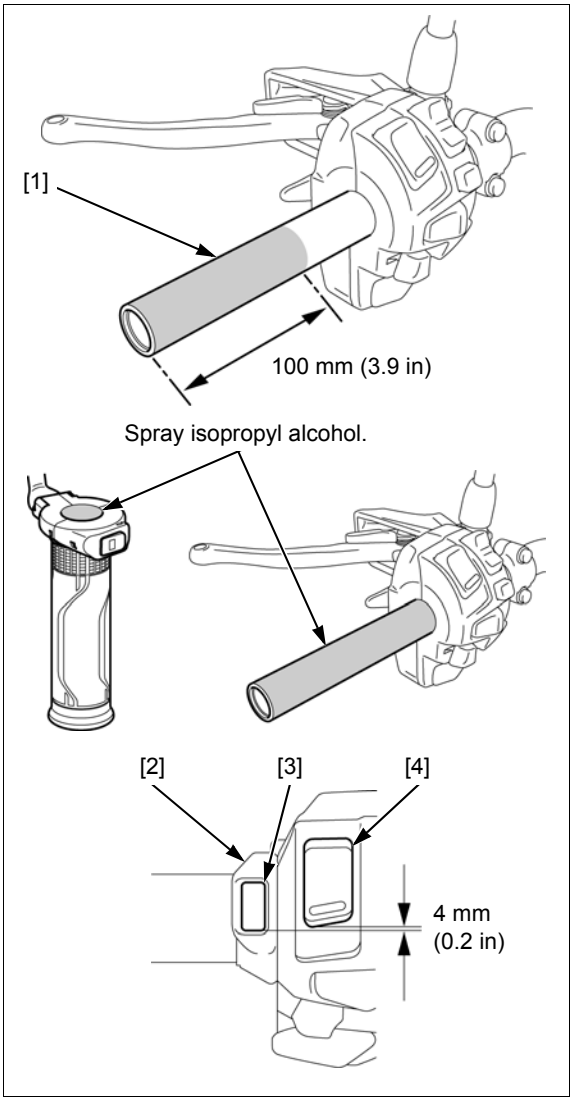
Installation is in the reverse order of removal.

NOTE:

- When replacing the left grip heater, install the left grip heater to the following procedure:

Clean the outside surface of the left handlebar [1].

Apply Honda Bond A or equivalent adhesive to the outside surface of the left handlebar as specified. Spray isopropyl alcohol over the inside of the left grip heater [2] and outside of the left handlebar.
Install the grip heater as indicated.



NOTICE

- *Do not tap the grip end with a hammer and do not twist the grip with force to insert the left grip heater onto the handlebar, as it can damage the element.*
- *Avoid putting pressure on the switch part when inserting the left grip heater. There is a possibility that the switch part will break. Also, install so that there is no gap with the left handlebar switch.*
- *If the grip gets stuck halfway during installation, apply isopropyl alcohol to the gap between the grip heater and handlebar. Do not try to remove the left grip heater using force or tools as the grip heater element can be damaged.*

Install the heater with the lower edge of the heater switch [3] is 4 mm (0.2 in) above the lower edge of the dimmer switch [4].

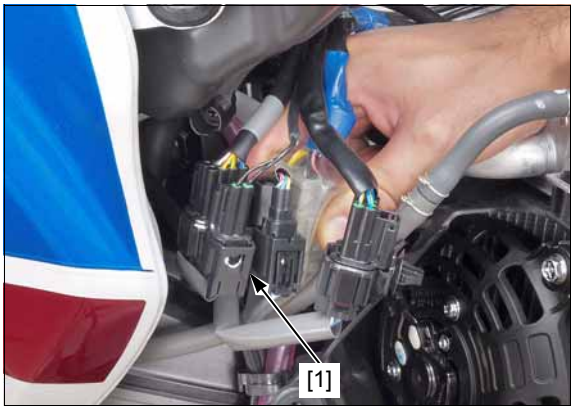
NOTE:

- Push the left grip heater in tight against the left handlebar switch.
- Allow the adhesive to dry for at least 1 hour before touching or checking the heater operation.
- When checking the heater operation, do not set the heater level higher than level 2.
- Make sure to turn off the heater switch after the operation check.
- Do not set the heater level higher than level 2 for the first week after installation.

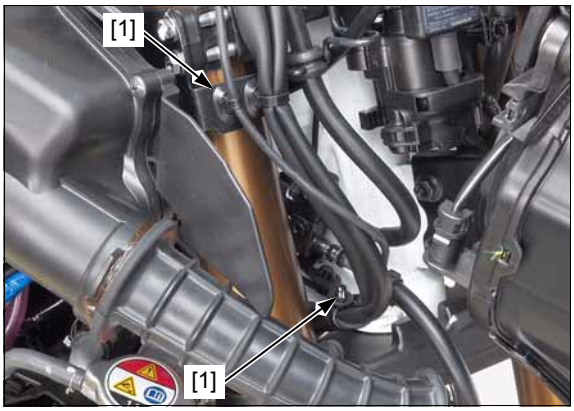
RIGHT GRIP HEATER

Remove the right handlebar switch/grip APS (page 26-116).

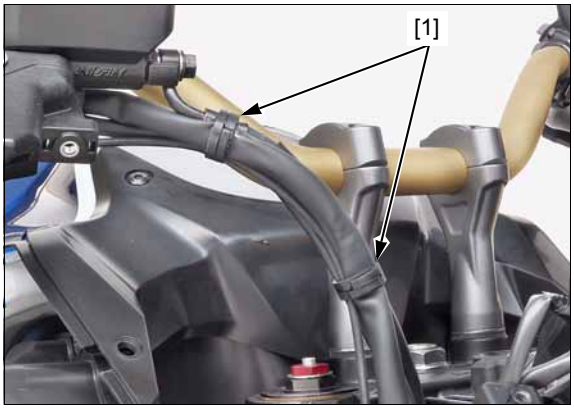
Disconnect the right grip heater 2P (Black) connector [2].



Release the harness clips [1] from the stays.



Remove the clamps [1].

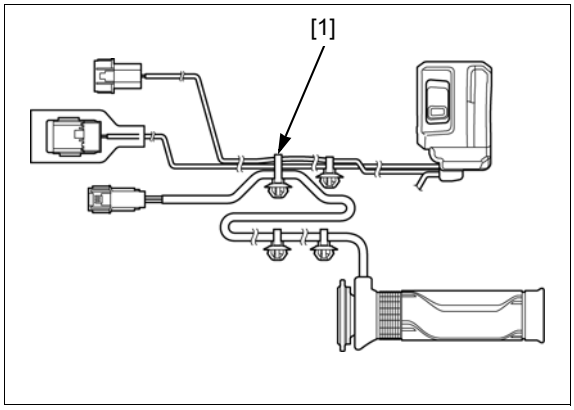


Installation is in the reverse order of removal.

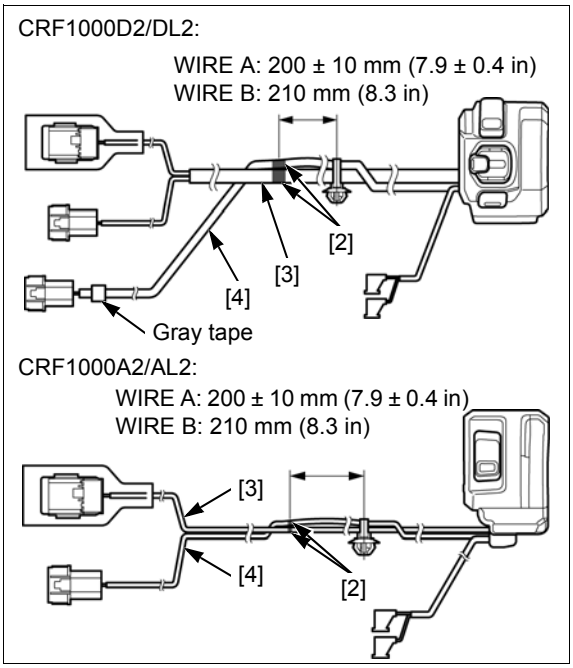
NOTE:

- When replacing the right grip heater, install the wire band to the following procedure:

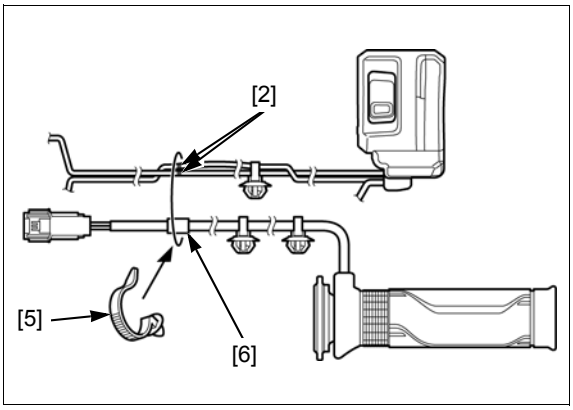
1. Remove the wire band [1].



2. Mark [2] the right handlebar switch/APS wire A [3] and right handlebar switch/APS wire B [4] as shown.

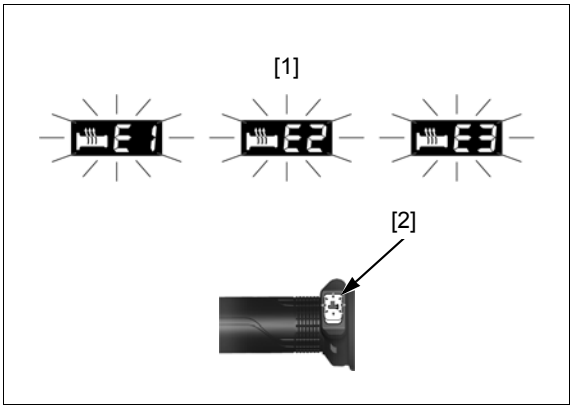


3. Install a new wire band [5] by aligning the yellow tape [6] of the right grip heater wire and the marking of the right handlebar switch/APS wire.



FAILURE SYMPTOM CHECK

When any abnormality occurs, the heater level indication [1] of the combination meter blinks "E1", "E2" or "E3" and the heater switch indicator [2] on the left grip heater blinks according to the meter indication (1 blink, 2 blinks, or 3 blinks) at the same time.



- E1: Low battery voltage
  - Inspect the battery voltage (page 26-200)
- E2: Short circuit in the grip heater or related circuit
  - Inspect the grip heater resistance (page 26-212)
  - Inspect the grip heater power input line short circuit (page 26-214)
  - Inspect the grip heater controller power input line short circuit (page 26-213)
- E3: Faulty grip heater switch or other failures
  - Inspect the grip heater resistance (page 26-212)
  - Inspect the grip heater switch (page 26-213)
  - Inspect the grip heater controller power input line short circuit (page 26-213)
  - Inspect the grip heater circuit (page 26-214)

If the grip heaters do not work at all, check the following:

- Blown OP fuse (10 A)
- Inspect the grip heater controller power/ground line (page 26-213)
- Inspect the grip heater switch (page 26-213)
- Inspect the grip heater switch power input line open circuit (page 26-215)
- Inspect the grip heater switch ground line open circuit (page 26-215)

Indicator on the left grip heater does not function, check the following:

- Inspect the grip heater switch indicator line open circuit (page 26-216)
- Inspect the grip heater switch indicator line short circuit (page 26-216)
- Inspect the grip heater switch ground line open circuit (page 26-215)
- Faulty left grip heater (page 26-207)
- Faulty grip heater controller (page 26-207)

Indicator on the combination meter does not function, check the following:

- Inspect the combination meter indicator line open circuit (page 26-216)
- Inspect the combination meter indicator line short circuit (page 26-217)
- Inspect the combination meter power/ground line (page 26-204)
- Faulty combination meter (page 26-204)
- Faulty grip heater controller (page 26-207)

INSPECTION

Grip Heater Resistance Inspection

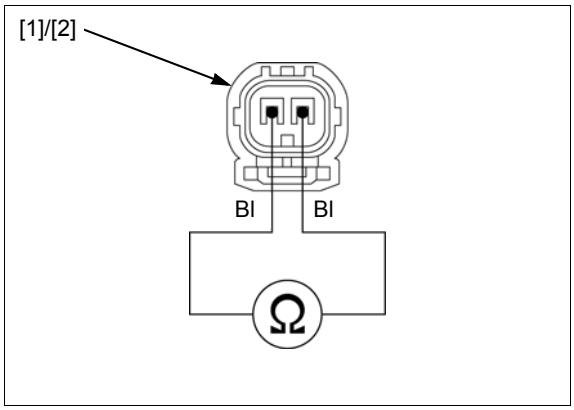
Turn the ignition switch OFF.

Disconnect the following:

– Left grip heater 2P (Black) connector (page 26-207)
– Right grip heater 2P (Black) connector (page 26-210)

Disconnect the left grip heater 2P (Black) connector [1] and right grip heater 2P (Black) connector [2].

Measure the resistance between the grip heater connector terminals at the grip heater side.



CONNECTION:
Left: Black – Black
Right: Black – Black

STANDARD: 7.4 - 9.0 Ω

If the resistance is out of specification, replace the grip heater.

Grip Heater Switch Inspection

Turn the ignition switch OFF.

Disconnect the left grip heater 4P (Black) connector (page 26-207).

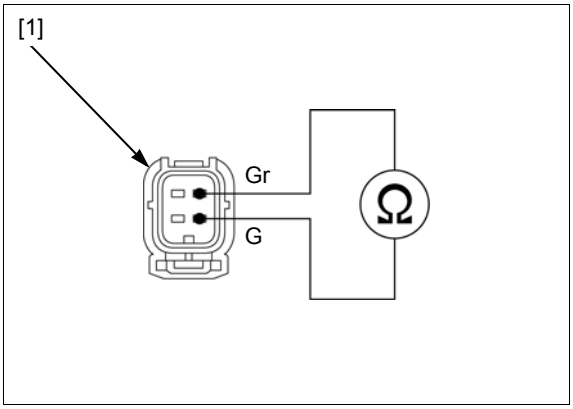
Check for continuity between the left grip heater 4P (Black) connector [1] terminals at the grip heater side.

There should be continuity only when the grip heater switch is pushed.

CONNECTION: Gray – Green

There should be continuity.

If there is no continuity, the grip heater switch is faulty.



GRIP HEATER CONTROLLER POWER/ GROUND LINE INSPECTION

Grip Heater Controller Input Voltage Inspection

Turn the ignition switch OFF.

Disconnect the grip heater controller 10P (Black) connector (page 26-207).

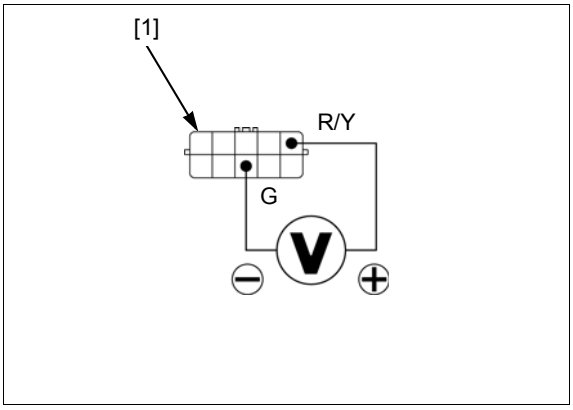
Turn the ignition switch ON.

Measure the voltage between the grip heater controller 10P (Black) connector [1] terminals at wire side.

CONNECTION: Red/yellow (+) – green (–)

There should be battery voltage.

If there is no voltage, check for open circuit in Red/ yellow and green wire.



Grip Heater Controller Power Input Line Short Circuit Inspection

Turn the ignition switch OFF.

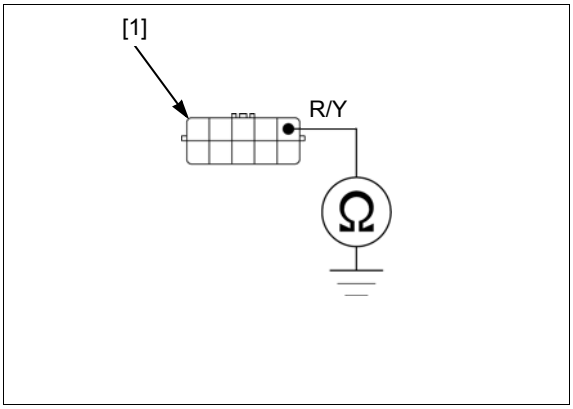
Disconnect the grip heater controller 10P (Black) connector (page 26-207).

Check for continuity between the grip heater controller 10P (Black) connector [1] terminal at the wire side and ground.

CONNECTION: Red/yellow – ground

There should be no continuity.

If there is continuity, check for short circuit in Red/ yellow wire.



GRIP HEATER CIRCUIT INSPECTION

Grip Heater Power Input Line Open Circuit Inspection

Turn the ignition switch OFF.

Disconnect the following:

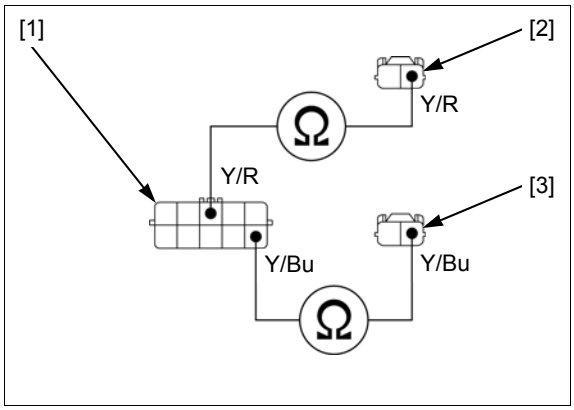
– Grip heater controller 10P (Black) connector [1] (page 26-207)
– Left grip heater 2P (Black) connector [2] (page 26-207)
– Right grip heater 2P (Black) connector [3] (page 26-210)

Check for continuity between the left/right grip heater 2P (Black) and grip heater controller 10P (Black) connector terminals at the wire side.

CONNECTION:
Left: Yellow/blue – Yellow/blue
Right: Yellow/red – Yellow/red

There should be continuity.

If there is no continuity, check for open circuit in Yellow/blue or Yellow/red wires.



Grip Heater Power Input Line Short Circuit Inspection

Turn the ignition switch OFF.

Disconnect the following:

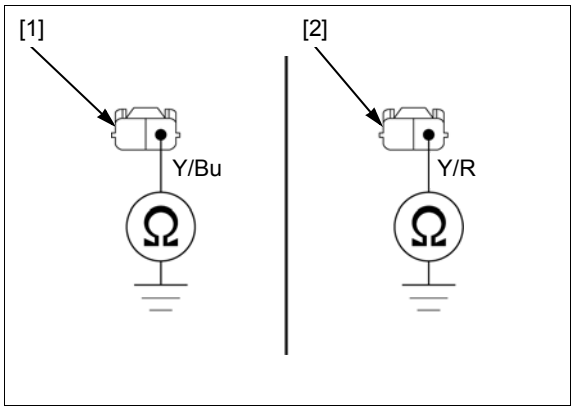
– Left grip heater 2P (Black) connector (page 26-207)
– Right grip heater 2P (Black) connector (page 26-210)

Check for continuity between the left [1]/right [2] grip heater 2P (Black) connector terminal at the wire side and ground.

CONNECTION:
Left: Yellow/blue – ground
Right: Yellow/red – ground

There should be no continuity.

If there is continuity, check for short circuit in Yellow/blue or Yellow/red wire.



Grip Heater Ground Line Open Circuit Inspection

Turn the ignition switch OFF.

Disconnect the following:

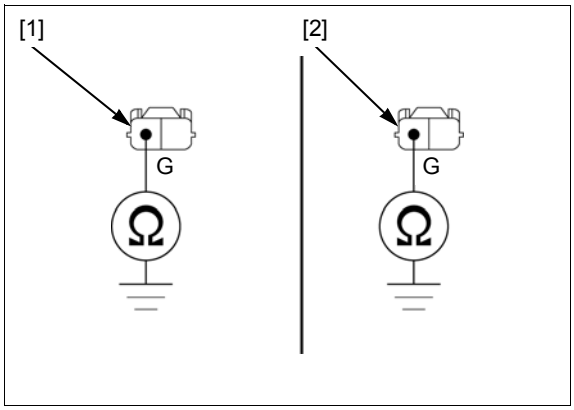
– Left grip heater 2P (Black) connector [1] (page 26-207)
– Right grip heater 2P (Black) connector [2] (page 26-210)

Check for continuity between the left [1]/right [2] grip heater 2P (Black) connector terminal at the wire side and ground.

CONNECTION:
Left: Green – ground
Right: Green – ground

There should be continuity.

If there is no continuity, check for open circuit in Green wire.



Grip Heater Switch Power Input Line Open Circuit Inspection

Turn the ignition switch OFF.

Disconnect the following:

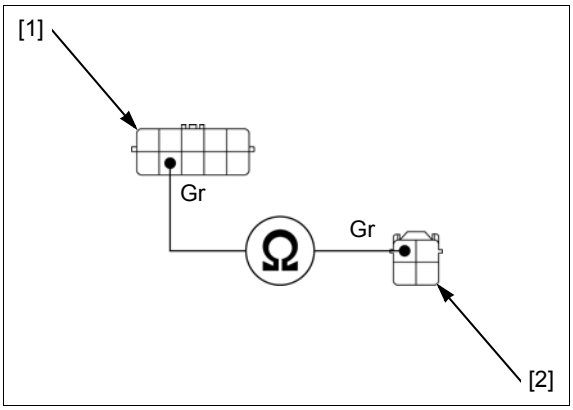
– Grip heater controller 10P (Black) connector (page 26-207)
– Left grip heater 4P (Black) connector (page 26-207)

Check for continuity between the grip heater controller 10P (Black) [1] and left grip heater 4P (Black) [2] connector terminals at the wire side.

CONNECTION: Gray – Gray

There should be continuity.

If there is no continuity, check for open circuit in Gray wire.



Grip Heater Switch Power Input Line Short Circuit Inspection

Turn the ignition switch OFF.

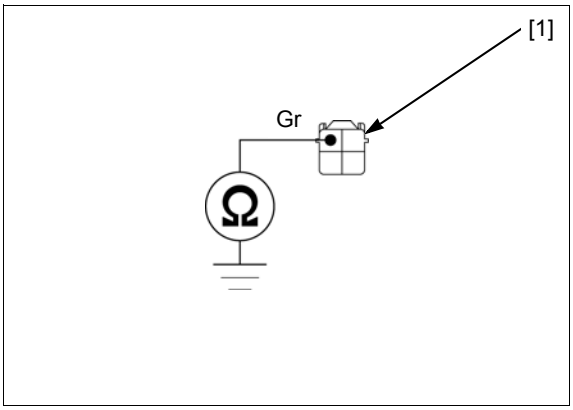
Disconnect the left grip heater 4P (Black) connector (page 26-207).

Check for continuity between the left grip heater 4P (Black) connector [1] terminal at the wire side and ground.

CONNECTION: Gray – ground

There should be no continuity.

If there is continuity, check for short circuit in Gray wire.



Grip Heater Switch Ground Line Open Circuit Inspection

Turn the ignition switch OFF.

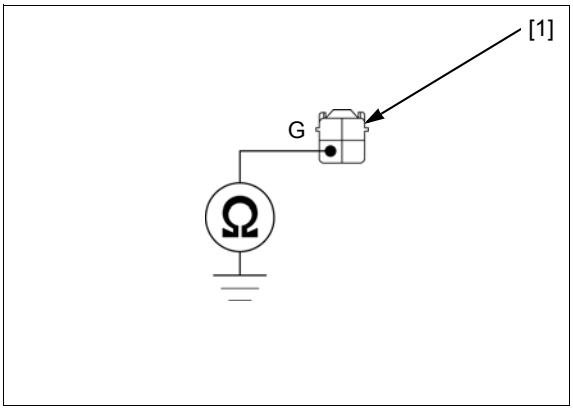
Disconnect the left grip heater 4P (Black) connector (page 26-207).

Check for continuity between the left grip heater 4P (Black) connector [1] terminal at the wire side and ground.

CONNECTION: Green – ground

There should be continuity.

If there is no continuity, check for open circuit in Green wire.



INDICATOR CIRCUIT INSPECTION

Grip Heater Switch Indicator Line Open Circuit Inspection

Turn the ignition switch OFF.

Disconnect the following:

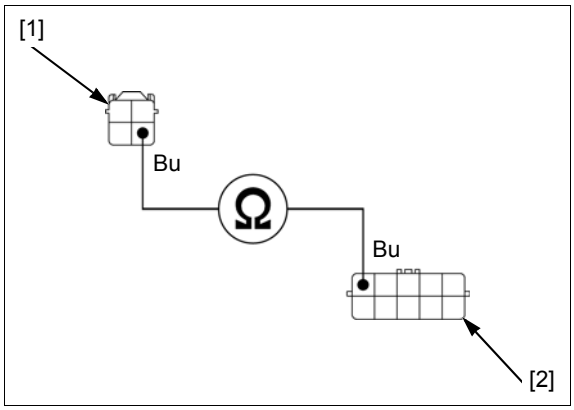
– Grip heater controller 10P (Black) connector (page 26-207)
– Left grip heater 4P (Black) connector (page 26-207)

Check for continuity between the grip heater controller 10P (Black) [1] and left grip heater 4P (Black) [2] connector terminals at the wire side.

CONNECTION: Blue – Blue

There should be continuity.

If there is no continuity, check for open circuit in Blue wire.



Grip Heater Switch Indicator Line Short Circuit Inspection

Turn the ignition switch OFF.

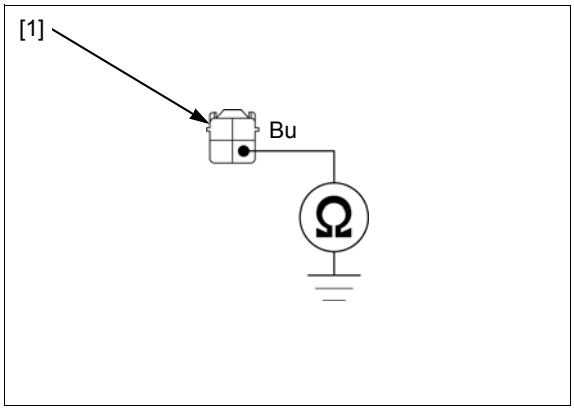
Disconnect the left grip heater 4P (Black) connector (page 26-207).

Check for continuity between the left grip heater 4P (Black) connector [1] terminal at the wire side and ground.

CONNECTION: Blue – ground

There should be no continuity.

If there is continuity, check for short circuit in Blue wire.



Combination Meter Indicator Line Open Circuit Inspection

Turn the ignition switch OFF.

Disconnect the following:

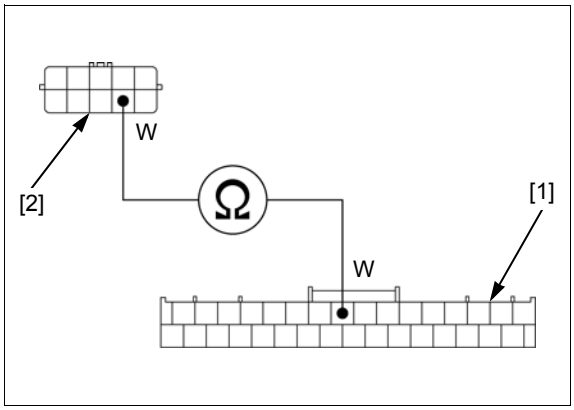
– Combination meter 32P (Gray) connector (page 22-12)
– Grip heater controller 10P (Black) connector (page 26-207)

Check for continuity between the combination meter 32P (Gray) [1] and grip heater controller 10P (Black) [2] connector terminals at the wire side.

CONNECTION: White – White

There should be continuity.

If there is no continuity, check for open circuit in White wire.



Combination Meter Indicator Line Short Circuit Inspection

Turn the ignition switch OFF.

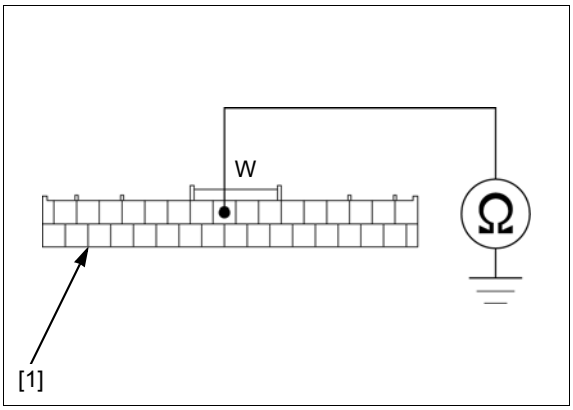
Disconnect the combination meter 32P (Gray) connector (page 22-12).

Check for continuity between the combination meter 32P (Gray) connector [1] terminal at the wire side and ground.

CONNECTION: White – ground

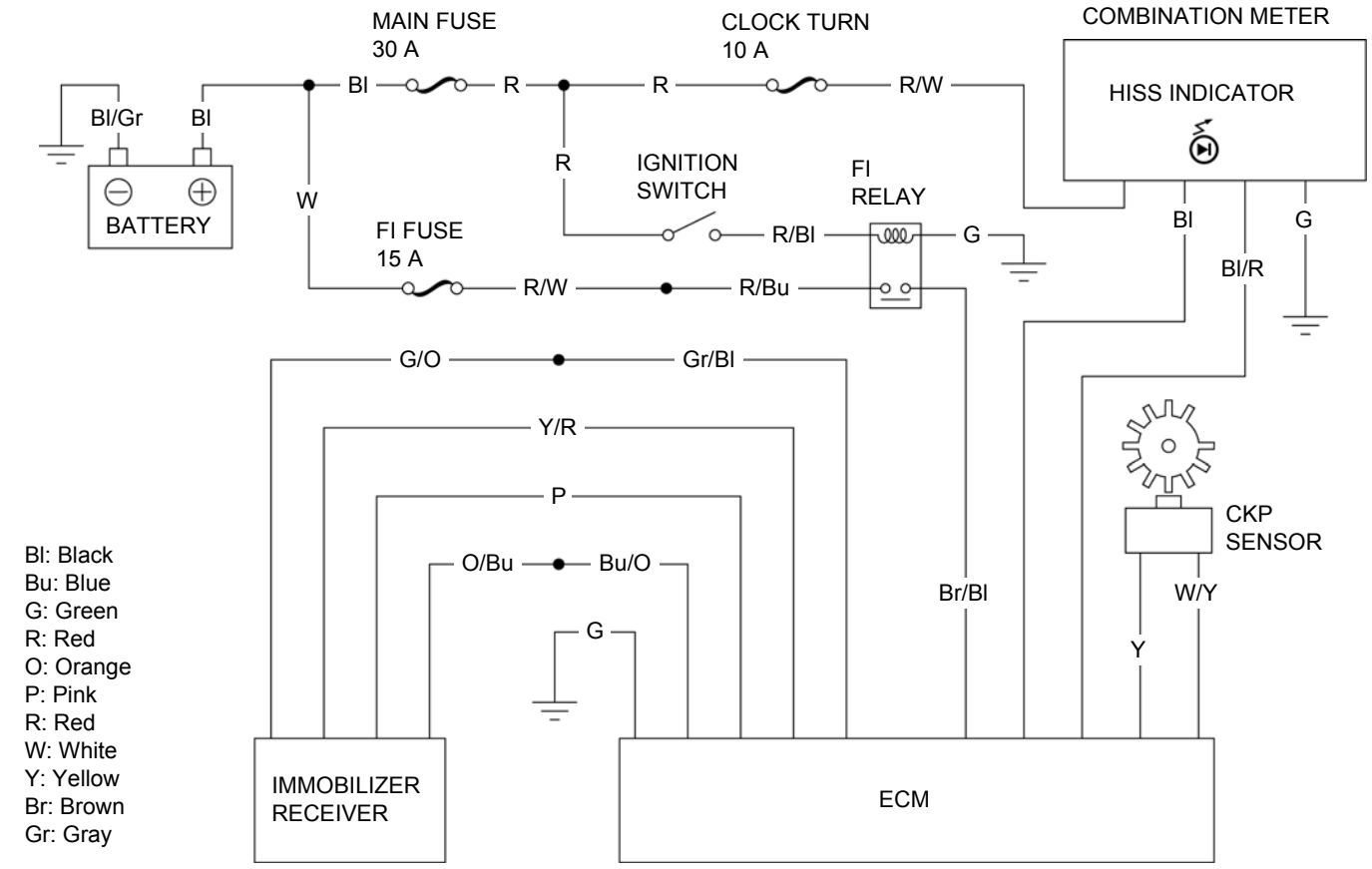
There should be no continuity.

If there is continuity, check for short circuit in White wire.

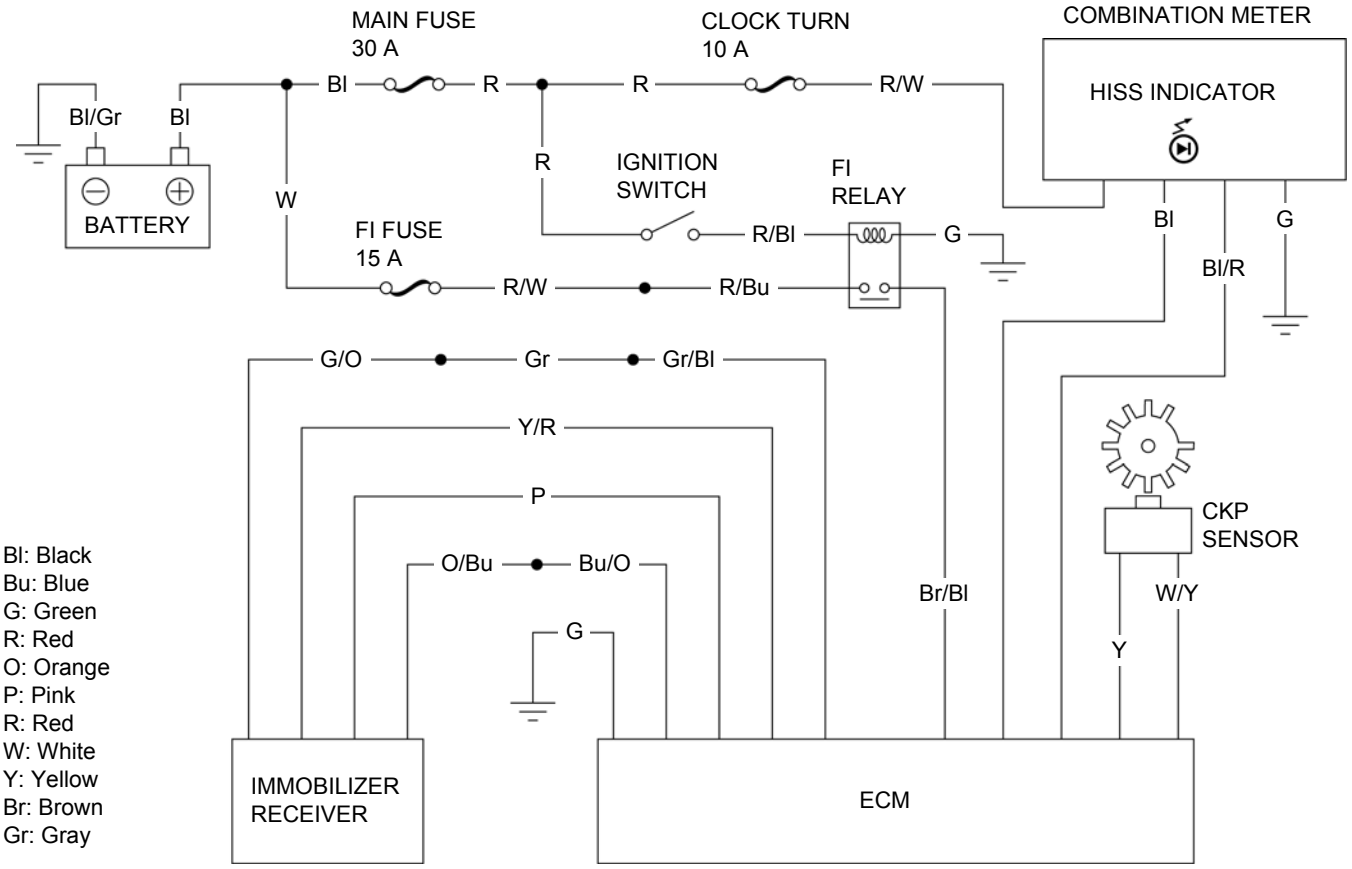


IMMOBILIZER SYSTEM (HISS) SYSTEM DIAGRAM

CRF1000A/A2/AL/AL2:



CRF1000D/D2/DL/DL2:



IMMOBILIZER SYSTEM (HISS) TROUBLESHOOTING

The HISS indicator comes on for approx. two seconds then it goes off, when the ignition switch is turned ON with the properly registered key and the HISS functions normally. If there is any problem or the properly registered key is not used, the indicator will remains on.

HISS indicator does not come on when the ignition switch is turned ON

1. **Combination Meter Initial Operation Inspection**

   Check the combination meter initial operation (page 22-12).

   Is the initial operation displayed?

   YES – GO TO STEP 2.

   NO – Check the combination meter power and ground lines (page 26-204).

2. **PGM-FI DTC Inspection**

   Check the MIL indicated.

   Does the MIL indicated?

   YES – Check the PGM-FI DTC (page 25-25).

   NO – Check the ECM/PCM power/ground lines (page 26-115).

HISS indicator remains on with the ignition switch turned ON

1. **Immobilizer Receiver Jamming Inspection**

   Check that there is any metal obstruction or the other vehicle‘s transponder key near the immobilizer receiver and key.

   Is there any metal obstruction or the other transponder key?

   YES – Remove it and recheck.

   NO – GO TO STEP 2.

2. **First Transponder Key Inspection**

   Turn the ignition switch ON with the spare transponder key and check the HISS indicator.
   The indicator should came on for 2 seconds then go off.

   Is the indicator go off?

   YES – Faulty first transponder key

   NO – GO TO STEP 3.

3. **Diagnostic Code Inspection**

   Perform the diagnostic code indication procedure (page 23-7).
   Check that the HISS indicator comes on then it starts blinking.

   Is the indicator brinks or stay lit?

   Brinks– Read the diagnostic code (page 23-7).

   Stay lit– GO TO STEP 4.

4. **PGM-FI DTC Inspection**

   Check the MIL indicated.

   Does the MIL indicated?

   YES – Check the PGM-FI DTC (page 25-25).

   NO – GO TO STEP 5.

5. **CKP sensor Line Open Circuit Inspection**

   Check the CKP sensor lines (page 26-222).

   Is there continuity?

   YES –
   - Open circuit in the Yellow wire
   - Open circuit in the White/yellow wire

   NO – Faulty ECM/PCM

Diagnostic code ⎍⎍⎍⎍ is indicated (Code signals cannot send or receive)

1. **Immobilizer Receiver Power Input Line Inspection**

   Check the immobilizer receiver power input line (page 26-222).

   Is the input line normal?

   YES – GO TO STEP 2.

   NO – Open or short circuit in the Yellow/red wire

2. **Immobilizer Receiver Ground Line Inspection**

   Check the immobilizer receiver ground line (page 26-223).

   Is the ground line normal?

   YES – GO TO STEP 3.

   NO – • CRF1000A/A2/AL/AL2: Open circuit in the Gray/black wire
   • CRF1000D/D2/DL/DL2: Open circuit in the Gray wire

3. **Immobilizer Receiver Signal Line Inspection**

   Check the immobilizer receiver signal lines (page 26-223).

   Are the signal lines normal?

   YES – GO TO STEP 4.

   NO – Open or short circuit in the Pink or Blue/orange wire

4. **Immobilizer Receiver Inspection**

   Replace the immobilizer receiver with a know good one (page 23-10).
   Perform the diagnostic code indication procedure (page 23-7).

   Is the Diagnostic code ⎍⎍⎍⎍ indicated?

   YES – Replace the PCM with a known good one and recheck.

   NO – Faulty original immobilizer receiver

ECM (CRF1000A/A2/AL/AL2)/ PCM (CRF1000D/D2/DL/DL2) (HISS)

CKP SENSOR LINE INSPECTION

Disconnect the ECM/PCM 33P (Gray) connector (page 4-39).

CRF1000A/A2/AL/AL2: Disconnect the alternator assembly 6P (Black) connector (page 11-4).

CRF1000D/D2/DL/DL2: Disconnect the alternator assembly 6P (Black) connector (page 11-5).

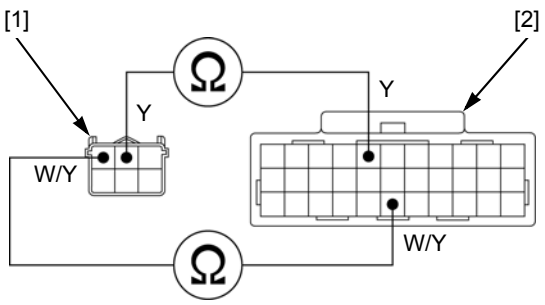
Check for continuity between the 6P (Black) [1] and 33P (Gray) [2] connectors.

CONNECTION: Yellow – Yellow
White/yellow – White/yellow

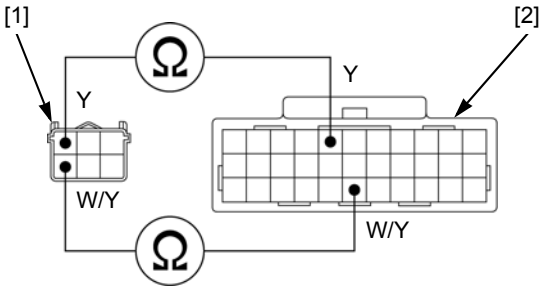
TOOL:
Test probe **07ZAJ-RDJA110**

There should be continuity.

CRF1000A/A2/AL/AL2:



CRF1000D/D2/DL/DL2:



IMMOBILIZER RECEIVER

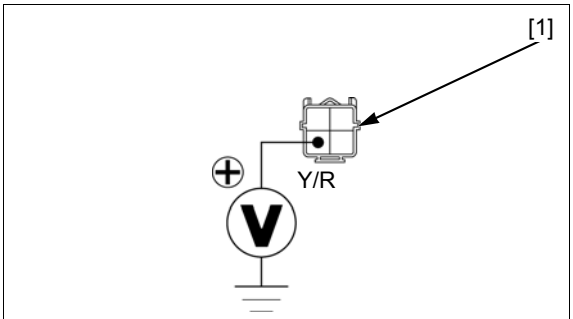
POWER INPUT LINE INSPECTION

Turn the ignition switch ON and engine stop switch "○".

Measure the voltage between the immobilizer receiver 4P (Black) connector [1] and ground at the wire side.

CONNECTION: Yellow/red (+) – Ground (–)

There should be approx. 5 V.

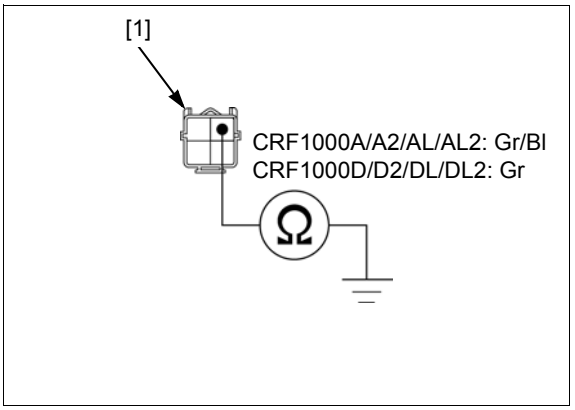


GROUND LINE INSPECTION

Check for continuity between the immobilizer receiver 4P (Black) connector [1] and ground at the wire side.

CONNECTION:
CRF1000A/A2/AL/AL2:
Gr/Bl (+) – Ground (–)
CRF1000D/D2/DL/DL2:
Gr (+) – Ground (–)

There should be continuity at all times.



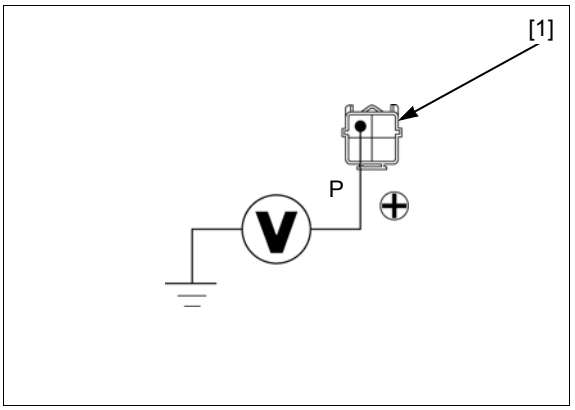
SIGNAL LINE INSPECTION

Turn the ignition switch ON and engine stop switch "".

Measure the voltage between the immobilizer receiver 4P (Black) connector [1] and ground at the wire side.

CONNECTION: Pink (+) – Ground (–)

There should be approx. 5 V.



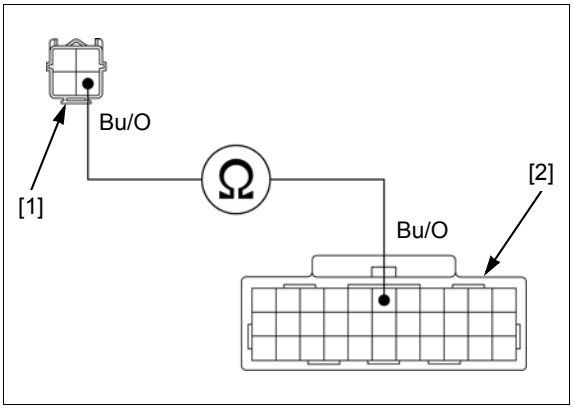
Disconnect the ECM/PCM 33P (Gray) connector (page 4-39).

Check for continuity between the immobilizer receiver 4P (Black) [1] and 33P (Gray) [2] connectors at the wire side.

CONNECTION: Blue/orange – Blue/orange

TOOL:
Test probe **07ZAJ-RDJA110**

There should be continuity.

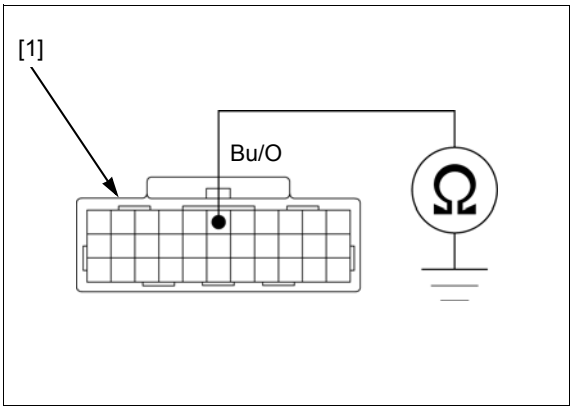


Check for continuity between the PCM 33P (Gray) connector [1] and ground at the wire side.

CONNECTION: Blue/orange – Ground

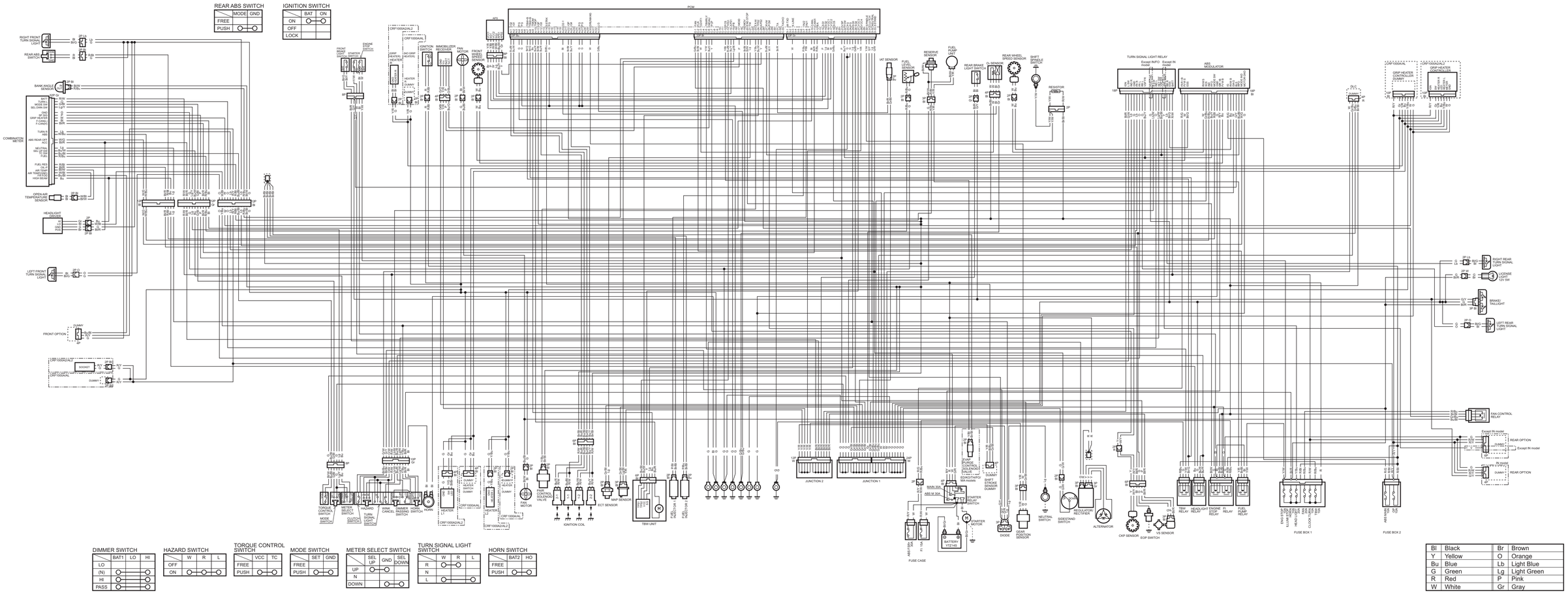
TOOL:
Test probe **07ZAJ-RDJA110**

There should be no continuity.



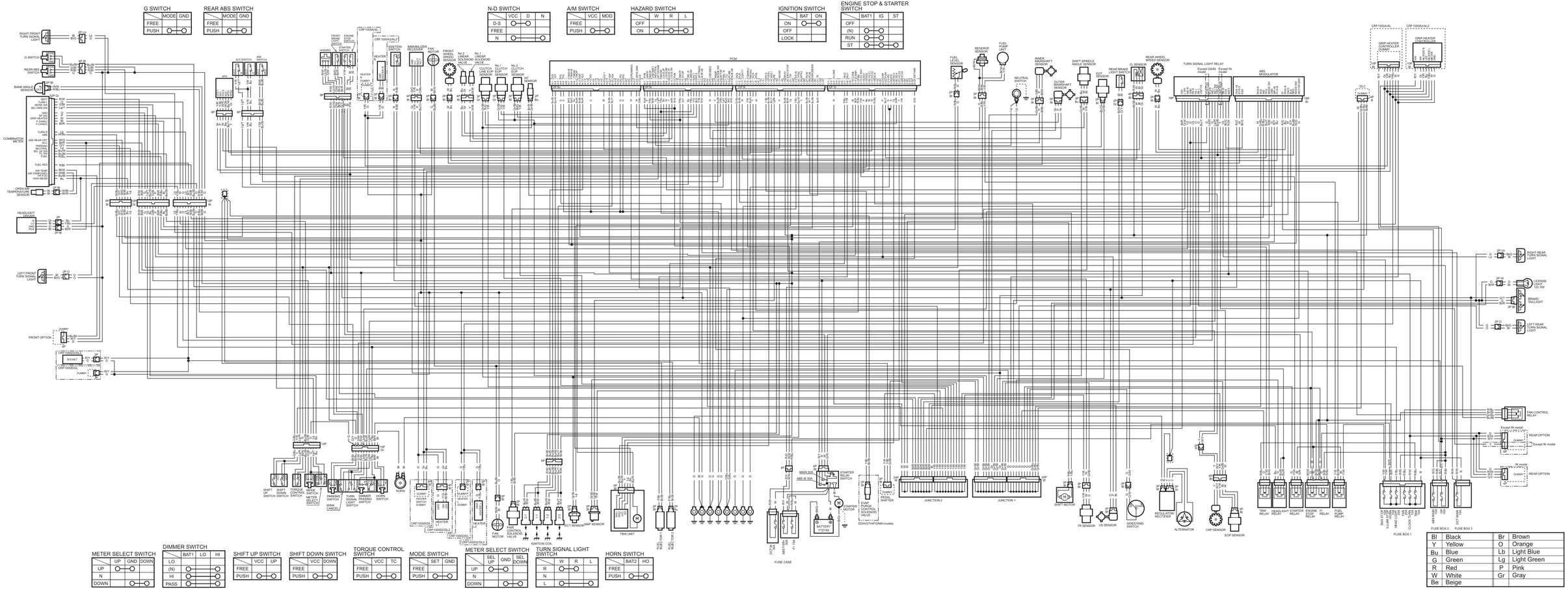
MEMO

WIRING DIAGRAM (CRF1000A/A2/AL/AL2)



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

WIRING DIAGRAM (CRF1000D/D2/DL/DL2)



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
Be	Beige		

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