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HONDA



SERVICE MANUAL

VFR800/A
INTERCEPTOR®

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HOW TO USE THIS MANUAL

This service manual describes the service procedures for the VFR/VFR-ABS.

Follow the Maintenance Schedule (Section 3) recommendations to ensure that the vehicle is in peak operating condition and emission levels are within the standards set by the U.S. Environmental Protection Agency, California Air Resources Board and Transport Canada.

Performing the first scheduled maintenance is very important. It compensates for the initial wear that occurs during the break-in period.

Sections 1 and 3 apply to the whole motorcycle. Section 2 illustrates procedures for removal/installation of components that may be required to perform service described in the following sections.

Section 4 through 20 describe parts of the motorcycle, grouped according to location.


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

Most sections start with an assembly or system illustration, service information and troubleshooting for the section. The subsequent pages give detailed procedure.

If you are not familiar with this motorcycle, read Technical Feature in Section 22.

If you don't know the source of the trouble, go to section 23 Troubleshooting.

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

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

▲ DANGER You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.

▲ WARNING You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.

▲ CAUTION You CAN be HURT if you don't follow instructions.

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












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

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SYMBOLS

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

	<p>Replace the part(s) with new one(s) before assembly.</p>
	<p>Use recommended engine oil, unless otherwise specified.</p>
	<p>Use molybdenum oil solution (mixture of the engine oil and molybdenum grease in a ratio of 1:1)</p>
	<p>Use multi-purpose grease (Lithium based multi-purpose grease NLGI #2 or equivalent)</p>
	<p>Use molybdenum disulfide grease (containing more than 3% molybdenum disulfide, NLGI #2 or equivalent. Example: Molykote® BR-2 plus manufactured by Dow Corning U.S.A. Multi-purpose M-2 manufactured by Mitsubishi Oil, Japan</p>
	<p>Use molybdenum disulfide paste (containing more than 40% molybdenum disulfide, NLGI #2 or equivalent. Example: Molykote® G-n Paste manufactured by Dow Corning U.S.A. Honda Moly 60 (U.S.A. only) Rocol ASP manufactured by Rocol Limited, U.K. Rocol Paste manufactured by Sumico Lubricant, Japan</p>
	<p>Use silicone grease.</p>
	<p>Apply a locking agent. Use a medium strength locking agent unless otherwise specified.</p>
	<p>Use sealant.</p>
	<p>Use DOT 4 brake fluid. Use the recommended brake fluid unless otherwise specified.</p>
	<p>Use fork or suspension fluid.</p>

1. GENERAL INFORMATION

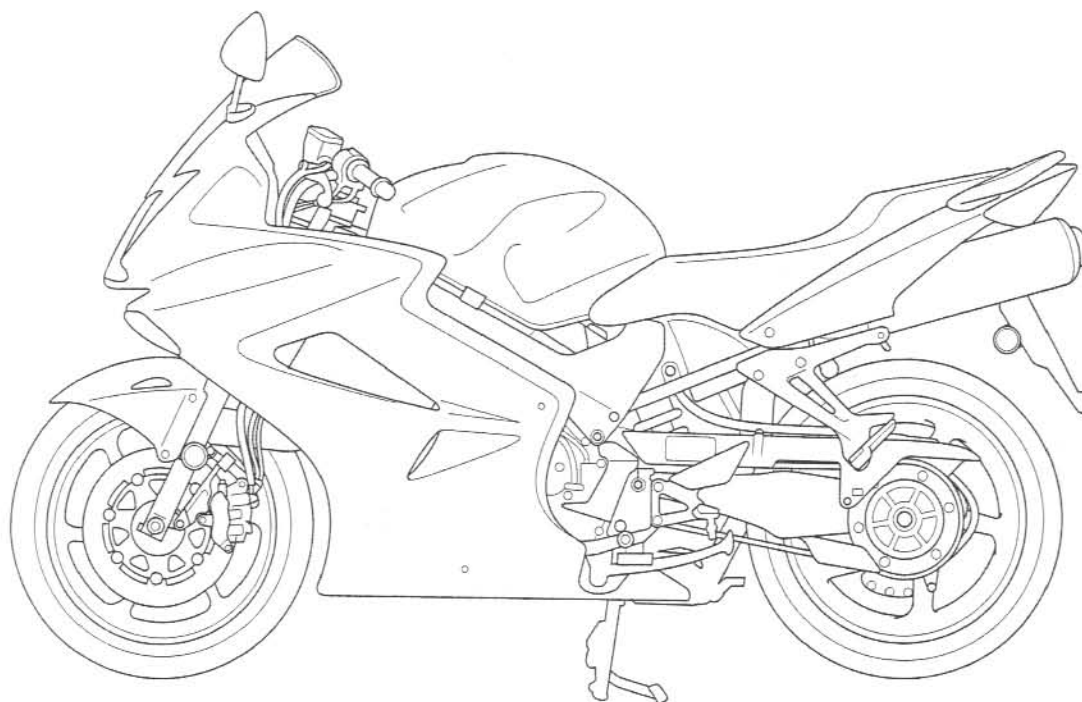
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GENERAL INFORMATION

SERVICE RULES

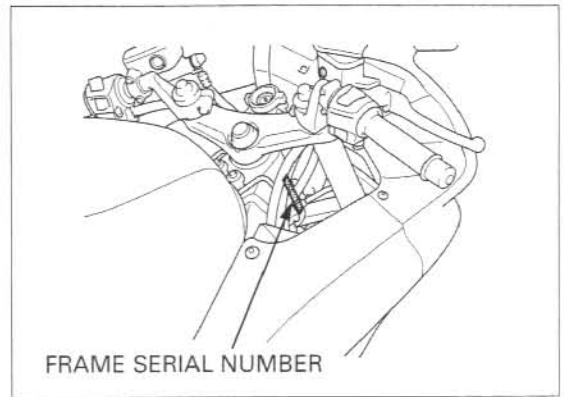
1. Use genuine Honda or Honda-recommended parts and lubricants or their equivalents. Parts that don't meet Honda's design specifications may cause damage to the motorcycle.
2. Use the special tools designed for this product to avoid damage and incorrect assembly.
3. Use only metric tools when servicing 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 show in the Cable and Harness Routing (page 1-25).

MODEL IDENTIFICATION



GENERAL INFORMATION

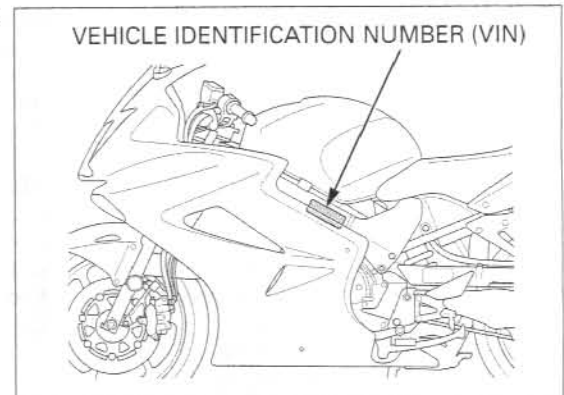
The frame serial number is stamped on the right side of the steering head.



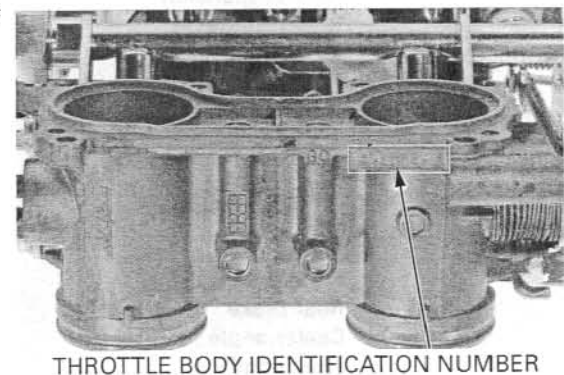
The engine serial number is stamped on the lower left side of the cylinder block.



The Vehicle identification Number (VIN) is located on left side of the main frame on the Safety Certification Labels.



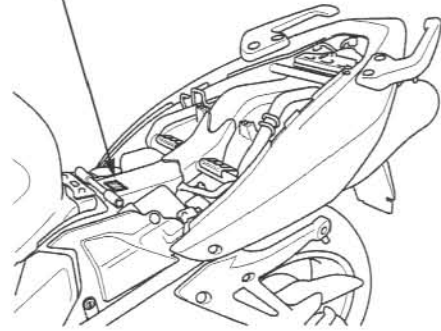
The throttle body identification number is stamped on the front side of the throttle body as shown.



GENERAL INFORMATION

The color label is attached as shown. When ordering color-coded parts, always specify the designated color code.

COLOR LABEL



GENERAL SPECIFICATIONS

ITEM		SPECIFICATIONS	
DIMENSIONS	Overall length	2,120 mm (83.5 in)	
	Overall width	735 mm (28.9 in)	
	Overall height	1,195 mm (47.0 in)	
	Wheelbase	1,460 mm (57.5 in)	
	Seat height	805 mm (31.7 in)	
	Footpeg height	349 mm (13.7 in)	
	Ground clearance	125 mm (4.9 in)	
	Dry weight	Standard type (except california type) 213 kg (470 lbs)	
	Curb weight	Standard type (California type)	214 kg (472 lbs)
		ABS type (except california type)	218 kg (481 lbs)
		ABS type (California type)	219 kg (483 lbs)
Standard type (except california type)		244 kg (538 lbs)	
Standard type (California type)		245 kg (540 lbs)	
ABS type (except california type)		249 kg (549 lbs)	
Maximum weight capacity	ABS type (California type)	250 kg (551 lbs)	
	Except canada type Canada type	181 kg (399 lbs) 185 kg (408 lbs)	
FRAME	Frame type	Diamond	
	Front suspension	Telescopic fork	
	Front axle travel	120 mm (4.8 in)	
	Rear suspension	Swingarm	
	Rear axle travel	120 mm (4.72 in)	
	Front tire size	120/70 ZR 17 M/C (58W)	
	Rear tire size	180/55 ZR 17 M/C (73W)	
	Front tire brand	BT020F BB (Bridgestone)	
		D204FK (Dunlop)	
	Rear tire brand	MEZ4A FRONT (Metzeler)	
		BT020R BB (Bridgestone)	
	Front brake	D204K (Dunlop)	
		MEZ4A (Metzeler)	
Rear brake	Hydraulic double disc		
Caster angle	Hydraulic single disc		
Trail length	25.5°		
Fuel tank capacity	95 mm (3.7 in)		
	22.0 liter (5.81 US gal, 4.84 Imp gal)		

GENERAL INFORMATION

ITEM		SPECIFICATIONS
ENGINE	Cylinder arrangement Bore and stroke Displacement Compression ratio Valve train Intake valve opens at 1 mm (0.04 in) lift closes at 1 mm (0.04 in) lift Exhaust valve opens at 1 mm (0.04 in) lift closes at 1 mm (0.04 in) lift Lubrication system Oil pump type Cooling system Air filtration Engine dry weight Firing order	90° V 72.0 X 48.0 mm (2.83 X 1.89 in) 782 cm ³ (47.7 cu-in) 11.6 : 1 Chain driven, DOHC with VTEC 12° BTDC 33° ABDC 35° BBDC 10° ATDC Forced pressure and wet sump Trochoid Liquid cooled Oiled paper element 72.4 kg (159.6 lbs) No.1 - 180° - No.3 - 270° - No.2 - 180° - No.4 - 90° - No.1
FUEL DELIVERY SYSTEM	Type Throttle bore	PGM-FI (Programmed Fuel Injection) 36 mm (1.4 in)
DRIVE TRAIN	Clutch system Clutch operation system Transmission Primary reduction Final reduction Gear ratio 1st 2nd 3rd 4th 5th 6th Gearshift pattern	Multi-plate, wet Hydraulic operating Constant mesh, 6-speeds 1.939 (64/33) 2.687 (43/16) 2.846 (37/13) 2.062 (33/16) 1.578 (30/19) 1.291 (31/24) 1.111 (30/27) 0.965 (28/29) Left foot operated return system, 1 - N - 2 - 3 - 4 - 5 - 6
ELECTRICAL	Ignition system Starting system Charging system Regulator/rectifier Lighting system	Computer-controlled digital transistorized with electric advance Electric starter motor Triple phase output alternator SCR shorted/triple phase, full wave rectification Battery

GENERAL INFORMATION

LUBRICATION SYSTEM SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT	
Engine oil capacity	After draining	2.9 liter (3.1 US qt, 2.6 Imp qt)	-	
	After draining/filter change	3.1 liter (3.3 US qt, 2.7 Imp qt)	-	
	After disassembly	3.8 liter (4.0 US qt, 3.3 Imp qt)	-	
Recommended engine oil		HONDA GN4 or HP4 (Without Moly) 4-stroke oil (U.S.A. and Canada) or Honda 4-stroke oil (Canada only), or equivalent motor oil API service classification SF, SG or Higher JASO 4T service classification: MA Viscosity: SAE 10W-40	-	
Oil pressure at oil pressure switch		490 kPa (5.0 kgf/cm ² , 71 psi) at 6,000 rpm/(80°C/176°F)	-	
Oil pump rotor	Feed pump	Tip clearance	0.15 (0.006)	0.20 (0.008)
		Body clearance	0.15 - 0.21 (0.006 - 0.008)	0.35 (0.014)
		Side clearance	0.02 - 0.09 (0.001 - 0.004)	0.10 (0.004)
	Cooler pump	Tip clearance	0.15 (0.006)	0.20 (0.008)
		Body clearance	0.15 - 0.22 (0.006 - 0.009)	0.35 (0.014)
		Side clearance	0.020 - 0.075 (0.0008 - 0.0295)	0.10 (0.004)

FUEL SYSTEM (Programmed Fuel Injection) SPECIFICATIONS

ITEM	SPECIFICATIONS
Throttle body identification number	Except California type GQ33D California type GQ33B
Starter valve vacuum difference	20mm Hg
Base throttle valve for synchronization	No.4
Idle speed	1,200 ± 100 rpm
Throttle grip free play	2 - 6 mm (1/16 - 1/4 in)
Intake air temperature sensor resistance (at 20°C/68°F)	1 - 4 kΩ
Engine coolant temperature sensor resistance (at 20°C/68°F)	2.3 - 2.6 Ω
Fuel injector resistance (at 20°C/68°F)	10.5 - 14.5 Ω
Bypass solenoid valve resistance (at 20°C/68°F)	28 - 32 Ω
PAIR solenoid valve resistance (at 20°C/68°F)	20 - 24 Ω
Purge control solenoid valve resistance (at 20°C/68°F)	30 - 34 Ω
Cam pulse generator peak voltage (at 20°C/68°F)	0.7 V minimum
Ignition pulse generator peak voltage (at 20°C/68°F)	0.7 V minimum
Manifold absolute pressure at idle	200 - 250 mm Hg
Fuel pressure at idle	250 kPa (2.5 kgf/cm ² , 36 psi)
Fuel pump flow (at 12V)	150 cm ³ (5.0 US oz, 5.3 Imp oz) minimum/10 seconds

COOLING SYSTEM SPECIFICATIONS

ITEM	SPECIFICATIONS	
Coolant capacity	Radiator and engine	2.92 liter (3.08 US qt, 2.57 Imp qt)
	Reserve tank	0.9 liter (0.95 US qt, 0.79 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	High quality ethylene glycol antifreeze containing corrosion protection inhibitors	
Standard coolant concentration	50 % mixture with soft water	

CYLINDER HEAD/VALVES SPECIFICATIONS

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Cylinder compression			981 – 1,373 kPa (10.0 – 14.0 kgf/cm ² , 142 – 178 psi) at 300 rpm	–
Valve clearance	Normal side	IN	0.20 ± 0.03 (0.008 ± 0.001)	–
		EX	0.35 ± 0.03 (0.013 ± 0.001)	–
	VTEC side	IN	0.20 ± 0.08 (0.008 ± 0.003)	–
		EX	0.35 ± 0.08 (0.013 ± 0.003)	–
Camshaft	Cam lobe height	IN	36.36 – 36.44 (1.431 – 1.435)	36.33 (1.430)
		EX	35.31 – 35.39 (1.390 – 1.393)	35.28 (1.389)
	Runout		–	0.05 (0.002)
	Oil clearance		0.020 – 0.062 (0.0008 – 0.0024)	0.10 (0.004)
Valve lifter	Valve lifter O.D.		25.978 – 25.993 (1.0228 – 1.0233)	25.97 (1.022)
	Valve lifter bore I.D.		26.010 – 26.026 (1.024 – 1.0246)	26.04 (1.025)
Valve, valve guide	Valve stem O.D.	IN	4.475 – 4.490 (0.1762 – 0.1768)	4.465 (0.1758)
		EX	4.465 – 4.480 (0.1758 – 0.1764)	4.455 (0.1754)
	Valve guide I.D.	IN/EX	4.500 – 4.512 (0.1772 – 0.1776)	4.540 (0.1787)
	Stem-to-guide clearance	IN	0.010 – 0.037 (0.0004 – 0.0015)	0.075 (0.0030)
		EX	0.020 – 0.047 (0.0008 – 0.0019)	0.085 (0.0033)
	Valve guide projection above cylinder head	Normal side	12.15 – 12.50 (0.478 – 0.492)	–
		VTEC side	19.65 – 20.00 (0.774 – 0.787)	–
	Valve seat width	IN/EX	0.90 – 1.10 (0.035 – 0.043)	1.5 (0.06)
Valve spring free length	Spring A outer		42.3 (1.67)	41.5 (1.63)
	Spring B outer		54.3 (2.14)	53.2 (2.09)
	Spring A inner		39.8 (1.57)	39.0 (1.54)
	Spring B inner		39.1 (1.54)	38.3 (1.51)
Cylinder head warpage			–	0.10 (0.004)

CLUTCH SPECIFICATIONS

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Recommended clutch fluid			Honda DOT 4 brake fluid	–
Clutch master cylinder	Cylinder I.D.		12.700 – 12.743 (0.5000 – 0.5017)	12.76 (0.502)
	Piston O.D.		12.657 – 12.684 (0.4983 – 0.4994)	12.65 (0.498)
Clutch	Spring free length		46.7 (1.84)	45.8 (1.80)
	Disc thickness		2.92 – 3.08 (0.115 – 0.121)	2.5 (0.10)
	Plate warpage		–	0.30 (0.012)
Clutch outer guide I.D.			24.995 – 25.012 (0.9841 – 0.9847)	25.08 (0.987)
Mainshaft O.D. at clutch outer guide			24.980 – 24.993 (0.9835 – 0.9840)	24.96 (0.983)

GENERAL INFORMATION

CRANKCASE/TRANSMISSION SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT	
Transmission	Gear I.D.	M5, M6	28.000 – 28.021 (1.1024 – 1.1032)	28.04 (1.104)
		C1	26.007 – 26.028 (1.0239 – 1.0247)	26.04 (1.025)
		C2	31.000 – 31.025 (1.2205 – 1.2215)	31.04 (1.222)
		C3, C4	31.000 – 31.025 (1.2205 – 1.2215)	31.04 (1.222)
	Gear busing O.D.	M5, M6	27.959 – 27.980 (1.1007 – 1.1016)	27.94 (1.100)
		C2	30.970 – 30.995 (1.2193 – 1.2203)	30.95 (1.219)
		C3, C4	30.950 – 30.975 (1.2185 – 1.2195)	30.93 (1.218)
	Gear-to-bushing clearance	M5, M6	0.020 – 0.062 (0.0008 – 0.0024)	–
		C2	0.005 – 0.055 (0.0002 – 0.0022)	–
		C3, C4	0.025 – 0.075 (0.0010 – 0.0030)	–
	Gear bushing I.D.	M5	24.985 – 25.006 (0.9837 – 0.9845)	25.03 (0.985)
		C2	28.000 – 28.021 (1.1024 – 1.1032)	28.04 (1.104)
	Mainshaft O.D.	at M5	24.959 – 24.980 (0.9826 – 0.9835)	24.95 (0.982)
Countershaft O.D.	at C2	27.967 – 27.980 (1.1011 – 1.1016)	27.96 (1.101)	
Bushing-to-shaft clearance	M5	0.005 – 0.047 (0.0002 – 0.0019)	–	
	C2	0.020 – 0.054 (0.0008 – 0.0021)	–	
Shift fork, fork shaft	Fork I.D.	14.000 – 14.021 (0.5512 – 0.5520)	14.03 (0.552)	
	Claw thickness	6.43 – 6.50 (0.253 – 0.256)	6.40 (0.252)	
	Shift fork shaft O.D.	13.973 – 13.984 (0.5501 – 0.5506)	13.965 (0.5498)	

CRANKSHAFT/PISTON/CYLINDER SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT	
Crankshaft	Connecting rod side clearance	0.10 – 0.30 (0.004 – 0.012)	0.40 (0.016)	
	Runout	–	0.05 (0.002)	
	Main journal bearing oil clearance	0.019 – 0.037 (0.0007 – 0.0015)	0.05 (0.002)	
Cylinder	I.D.	72.000 – 72.015 (2.8346 – 2.8352)	72.10 (2.839)	
	Out of round	–	0.10 (0.004)	
	Taper	–	0.10 (0.004)	
	Warpage	–	0.10 (0.004)	
Piston, piston rings	Piston O.D. at 18 mm (0.7 in) from bottom	71.965 – 71.985 (2.8333 – 2.8340)	71.90 (2.831)	
	Piston pin bore I.D.	17.002 – 17.008 (0.6694 – 0.6696)	17.02 (0.670)	
	Piston pin O.D.	16.994 – 17.000 (0.6691 – 0.6693)	16.98 (0.669)	
	Piston -to-piston pin clearance	0.002 – 0.014 (0.0001 – 0.0006)	0.04 (0.002)	
	Piston ring end gap	Top	0.20 – 0.30 (0.008 – 0.012)	0.5 (0.02)
		Second	0.30 – 0.45 (0.012 – 0.018)	0.6 (0.02)
		Oil (side rail)	0.20 – 0.70 (0.008 – 0.028)	0.9 (0.04)
	Piston ring-to-ring groove clearance	Top	0.030 – 0.065 (0.0012 – 0.0026)	0.11 (0.004)
Second		0.015 – 0.050 (0.0006 – 0.0020)	0.10 (0.004)	
Cylinder-to-piston clearance		0.015 – 0.050 (0.0006 – 0.0020)	0.10 (0.004)	
Connecting rod small end I.D.		17.016 – 17.034 (0.6699 – 0.6706)	17.04 (0.671)	
Connecting rod-to-piston pin clearance		0.016 – 0.040 (0.0006 – 0.0016)	0.06 (0.002)	
Crankpin bearing oil clearance		0.030 – 0.052 (0.0012 – 0.0020)	0.08 (0.003)	

FRONT WHEEL/SUSPENSION/STEERING SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Minimum tire tread depth		-	1.5 (0.06)
Cold tire pressure	Up to 90 kg (200 lb) load	250 kPa (2.50 kgf/cm ² , 36 psi)	-
	Up to maximum weight capacity	250 kPa (2.50 kgf/cm ² , 36 psi)	-
Axle runout		-	0.2 (0.01)
Wheel rim runout	Radial	-	2.0 (0.08)
	Axial	-	2.0 (0.08)
Wheel balance weight		-	60 g (2.1 oz) max.
Fork	Spring free length	334.3 (13.16)	327.61 (12.898)
	Pipe runout	-	0.20 (0.008)
	Pre-load adjuster initial setting	6 mm (0.2 in) from top surface of fork cap	-
	Recommended fork fluid	Pro Honda Suspension Fluid SS-8	-
	Fluid level	100 (3.9)	-
Fluid capacity		544 ± 2.5 cm ³ (18.4 ± 0.08 US oz, 19.1 ± 0.09 Imp oz)	-
Steering head bearing pre-load		1.0 – 1.5 kgf (2.2 – 3.3 lbf)	-

REAR WHEEL/SUSPENSION SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Minimum tire tread depth		-	2.0 (0.08)
Cold tire pressure	Up to 90 kg (200 lb) load	290 kPa (2.90 kgf/cm ² , 42 psi)	-
	Up to maximum weight capacity	290 kPa (2.90 kgf/cm ² , 42 psi)	-
Axle runout		-	0.2 (0.01)
Wheel rim runout	Radial	-	2.0 (0.08)
	Axial	-	2.0 (0.08)
Wheel balance weight		-	60 g (2.1 oz) max.
Drive chain	Size/link	DID	DID50VA8-110LE
		RK	RK50HFOZ5-110LE
	Slack	25 – 35 (1 – 1-3/8)	-
Shock absorber	Pre-load adjuster standard position (Standard type)		2nd groove
	Pre-load adjuster dial standard position (ABS type)		7 clicks out from lower position
	Rebound adjuster initial setting		1-1/4 turns out from full hard

GENERAL INFORMATION

HYDRAULIC BRAKE SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT	
Front	Specified brake fluid	Honda DOT 4 brake fluid	-	
	Brake disc thickness	4.5 (0.18)	3.5 (0.14)	
	Brake disc warpage	-	0.20 (0.008)	
	Master cylinder I.D.	14.000 - 14.043 (0.5512 - 0.5529)	14.055 (0.5533)	
	Master piston O.D.	13.957 - 13.984 (0.5495 - 0.5506)	13.945 (0.5490)	
	Secondary master cylinder I.D.	12.700 - 12.743 (0.5000 - 0.5017)	12.76 (0.502)	
	Secondary master piston O.D.	12.657 - 12.684 (0.4983 - 0.4994)	12.65 (0.498)	
	Left caliper cylinder I.D.	Upper	25.400 - 25.450 (1.0000 - 1.0020)	25.460 (1.0024)
		Middle	25.400 - 25.450 (1.0000 - 1.0020)	25.460 (1.0024)
		Lower	25.400 - 25.450 (1.0000 - 1.0020)	25.460 (1.0024)
	Left caliper piston O.D.	Upper	25.318 - 25.368 (0.9968 - 0.9987)	25.310 (0.9965)
		Middle	25.318 - 25.368 (0.9968 - 0.9987)	25.310 (0.9965)
		Lower	25.318 - 25.368 (0.9968 - 0.9987)	25.310 (0.9965)
	Right caliper cylinder I.D.	Upper	25.400 - 25.450 (1.0000 - 1.0020)	25.460 (1.0024)
		Middle	22.650 - 22.700 (0.8917 - 0.8937)	22.710 (0.8941)
		Lower	25.400 - 25.450 (1.0000 - 1.0020)	25.460 (1.0024)
	Right caliper piston O.D.	Upper	25.318 - 25.368 (0.9968 - 0.9987)	25.310 (0.9965)
Middle		22.585 - 22.618 (0.8892 - 0.8905)	22.560 (0.8882)	
Lower		25.318 - 25.368 (0.9968 - 0.9987)	25.310 (0.9965)	
Rear	Specified brake fluid	DOT 4	-	
	Brake pedal height	90.0 (3.54)	-	
	Brake disk thickness	6.0 (0.23)	5.0 (0.20)	
	Brake disc warpage	-	0.30 (0.012)	
	Master cylinder I.D.	17.460 - 17.503 (0.6874 - 0.6891)	17.515 (0.6896)	
	Master piston O.D.	17.417 - 17.444 (0.6857 - 0.6868)	17.405 (0.6852)	
	Caliper cylinder I.D.	Front	25.400 - 25.450 (1.0000 - 1.0020)	25.460 (1.0024)
		Center	25.400 - 25.450 (1.0000 - 1.0020)	25.460 (1.0024)
		Rear	25.400 - 25.450 (1.0000 - 1.0020)	25.460 (1.0024)
	Caliper piston O.D.	Front	25.318 - 25.368 (0.9968 - 0.9987)	25.310 (0.9965)
Center		25.318 - 25.368 (0.9968 - 0.9987)	25.310 (0.9965)	
Rear		25.318 - 25.368 (0.9968 - 0.9987)	25.310 (0.9965)	

BATTERY/CHARGING SYSTEM SPECIFICATIONS

ITEM		SPECIFICATIONS	
Battery	Capacity	12V - 10Ah	
	Current leakage	2.5 mA max.	
	Voltage (20°C/68°F)	Fully charged	13.0 - 13.2 V
		Needs charging	Below 12.3 V
	Charging current	Normal	0.9 A/5 - 10 h
Quick		4.5 A/0.5 h	
Alternator	Capacity	0.47 kW/5,000 rpm	
	Charging coil resistance (20°C/68°F)	0.1 - 1.0 Ω	

IGNITION SYSTEM SPECIFICATIONS

ITEM		SPECIFICATIONS
Spark plug (Iridium)	Standard	IMR9B-9H (NGK)
		VNH27Z (DENSO)
	Optional	IMR8B-9H (NGK)
		VNH24Z (DENSO)
Spark plug gap	0.80 - 0.90 mm (0.031 - 0.035 in)	
Ignition coil peak voltage	100 V minimum	
Ignition pulse generator peak voltage	0.7 V minimum	
Ignition timing ("F" mark)	15° BTDC at idle	

ELECTRIC STARTER/STARTER CLUTCH SPECIFICATIONS

Unit: mm (in)

ITEM	STANDARD	SERVICE LIMIT
Starter motor brush length	12.0 - 13.0 (0.47 - 0.51)	6.5 (0.26)
Starter driven gear boss O.D.	45.657 - 45.673 (1.7975 - 1.7981)	45.64 (1.797)

LIGHTS/METERS/SWITCHES SPECIFICATIONS

ITEM		SPECIFICATIONS	
Bulbs	Headlight	Hi	12V - 55 W X 2
		Lo	12V - 55 W X 2
	Brake/tail light		12V - 21/5 W X 2
	Front turn signal/running light		12V - 21/5 W X 2
	Rear turn signal light		12V - 21 W X 2
	License light		12V - 4 CP
	Instrument light		LED
	Turn signal indicator		LED
	High beam indicator		LED
	Neutral indicator		LED
	Oil pressure indicator		LED
	PGM-FI malfunction indicator		LED
Fuse	Main fuse		30 A
	PGM-FI fuse		30 A
	Sub fuse (Standard type)		10 A X 4, 20A X 2
	Sub fuse (ABS type)		10 A X 5, 20A X 2, 30A X 2
Tachometer peak voltage		10.5 V minimum	
Coolant temperature sensor resistance (50°C/122°F)		6.8 - 7.2 Ω	
Open air temperature sensor resistance (25°C/77°F)		4.8 - 5.2 Ω	
Fan motor switch	Start to close (ON)		98 - 102 °C (208 - 216 °F)
	Stop to open		93 - 97 °C (199 - 207 °F)

GENERAL INFORMATION

STANDARD TORQUE VALUES

FASTENER TYPE	TORQUE N·m (kgf·m, lbf·ft)	FASTENER TYPE	TORQUE N·m (kgf·m, lbf·ft)
5 mm hex bolt and nut	5 (0.5, 3.6)	5 mm screw	4 (0.4, 2.9)
6 mm hex bolt and nut	10 (1.0, 7)	6 mm screw	9 (0.9, 6.5)
8 mm hex bolt and nut	22 (2.2, 16)	6 mm flange bolt (8 mm head, small flange)	10 (1.0, 7)
10 mm hex bolt and nut	34 (3.5, 25)	6 mm flange bolt (8 mm head, large flange)	12 (1.2, 9)
12 mm hex bolt and nut	54 (5.5, 40)	6 mm flange bolt (10 mm head) and nut	12 (1.2, 9)
		8 mm flange bolt and nut	26 (2.7, 20)
		10 mm flange bolt and nut	39 (4.0, 29)

ENGINE & FRAME TORQUE VALUES

- Torque specifications listed below are for important fasteners.
- Others should be tightened to standard torque values listed above.

NOTE:

1. Apply sealant to the threads.
2. Apply a locking agent to the threads.
3. Stake.
4. Apply oil to the threads and flange surface.
5. U-nut.
6. ALOC bolt/screw: replace with a new one.
7. Apply grease to the threads.
8. Apply molybdenum disulfide oil to the threads and seating surface.
9. CT bolt.
10. Left hand threads.

ENGINE

MAINTENANCE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Spark plug	4	10	12 (1.2, 9)	
Timing hole cap	1	45	18 (1.8, 13)	NOTE 7
Engine oil filter cartridge	1	20	26 (2.7, 20)	NOTE 4
Engine oil drain bolt	1	12	29 (3.0, 22)	

LUBRICATION

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Oil cooler boss	1	–	See page 1-15	
Oil pump assembly bolt	1	6	12 (1.2, 9)	NOTE 9

FUEL SYSTEM (Programmed Fuel Injection)

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
ECT (Engine Coolant Temperature)/thermo sensor	1	12	23 (2.3, 17)	
Throttle body insulator band screw	8	–	See page 1-15	
Throttle cable bracket socket bolt	2	5	3 (0.35, 2.5)	
Starter valve synchronization plate screw	4	3	1 (0.09, 0.7)	
Starter valve lock nut	4	10	2 (0.18, 1.3)	
Fast idle wax unit link plate screw	2	3	1 (0.09, 0.7)	
Fast idle wax unit mounting screw	2	6	5 (0.5, 3.6)	
Pressure regulator	1	18	27 (2.8, 20)	
Fuel rail mounting bolt	4	6	10 (1.0, 7)	

GENERAL INFORMATION

COOLING SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Water pump cover flange bolt	2	6	13 (1.3, 9)	NOTE 9

ENGINE MOUNTING

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Drive sprocket special bolt	1	10	51 (5.2, 38)	

CYLINDER HEAD/VALVES

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Cylinder head flange bolt	12	9	44 (4.5, 33)	NOTE 4
Cylinder head orifice bolt	4	6	8 (0.8, 6)	
Camshaft holder flange bolt	40	6	12 (1.2, 9)	NOTE 4
Cylinder head cover bolt	8	6	10 (1.0, 7)	
Breather plate flange bolt	4	6	12 (1.2, 9)	NOTE 2, 9
PAIR check reed valve cover SH bolt	4	6	12 (1.2, 9)	NOTE 9
Cam sprocket UBS bolt	8	7	20 (2.0, 14)	NOTE 2
Cam chain tensioner flange bolt	2	8	26 (2.7, 20)	NOTE 2
Cam chain guide flange bolt	2	6	12 (1.2, 9)	NOTE 2
Cylinder head stud bolt (exhaust pipe stud bolt)	8	6	See page 1-15	

CLUTCH

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Clutch spring bolt	5	6	12 (1.2, 9)	
Clutch center lock nut	1	22	127 (13.0, 94)	NOTE 3, 4
Oil pump driven sprocket bolt	1	6	18 (1.8, 13)	NOTE 2
Clutch hose oil bolt	1	10	34 (3.5, 25)	
Clutch slave cylinder bleed valve	1	8	9 (0.9, 6.5)	

GEARSHIFT LINKAGE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Drive sprocket cover rubber mounting bolt	2	6	12 (1.2, 9)	NOTE 2, 9
Shift drum center socket bolt	1	8	23 (2.3, 17)	NOTE 2
Shift drum stopper arm pivot bolt	1	6	12 (1.2, 9)	
Gearshift spindle return spring pin	1	8	23 (2.3, 17)	

CRANKCASE/TRANSMISSION

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Crankcase bolt (Main journal)	8	9	See page 11-13	NOTE 4
Crankcase bolt	1	10	39 (4.0, 29)	
Crankcase bolt	3	7	18 (1.8, 13)	

CRANKSHAFT/PISTON/CYLINDER

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Connecting rod bearing cap nut	8	9	33 (3.4, 25)	NOTE 4

BATTERY/CHARGING SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Flywheel flange bolt	1	10	103 (10.5, 76)	NOTE 4
Alternator stator torx bolt	4	6	12 (1.2, 9)	
Starter wire holder socket bolt	1	6	12 (1.2, 9)	

GENERAL INFORMATION

IGNITION SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Ignition pulse generator SH flange bolt	1	6	12 (1.2, 9)	

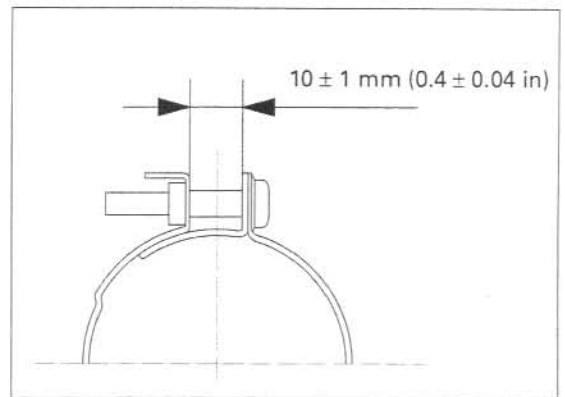
ELECTRIC STARTER/STARTER CLUTCH

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Ignition pulse generator rotor/primary drive gear flange bolt	1	10	103 (10.5, 76)	NOTE 4

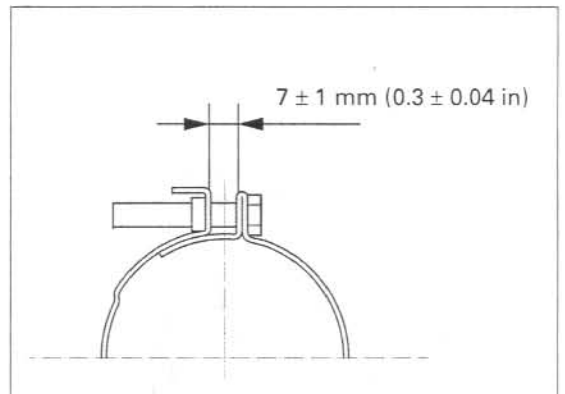
LIGHTS/METERS/SWITCHES

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Oil pressure switch	1	PT 1/8	12 (1.2, 9)	NOTE 1
Neutral switch	1	10	12 (1.2, 9)	

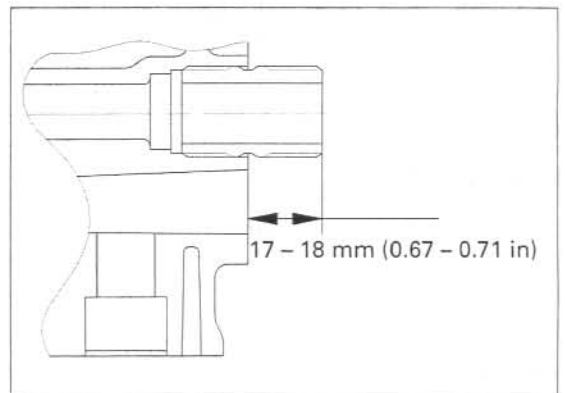
Insulator clamp (Cylinder head side):



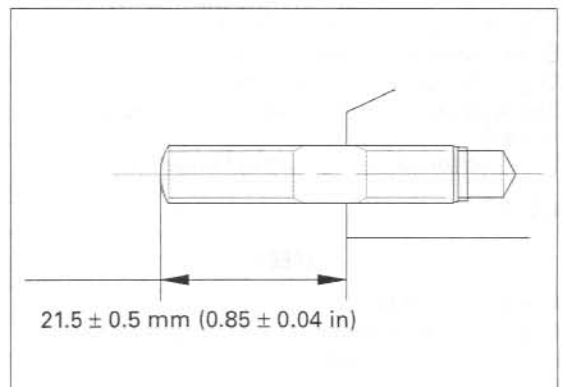
Insulator clamp (Throttle body side):



Oil cooler boss:



Exhaust pipe stud bolt:



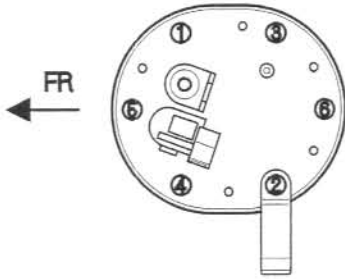
GENERAL INFORMATION

FRAME

FRAME BODY PANELS/EXHAUST SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Upper cowl pan screw	2	5	2 (0.15, 1.1)	
Side cowl pan screw	6	5	2 (0.15, 1.1)	
Inner half cowl pan screw	4	5	2 (0.15, 1.1)	
Rear cowl pan screw	2	5	2 (0.15, 1.1)	
Grab rail socket bolt	4	8	22 (2.2, 16)	
Upper cowl stay mounting nut	1	10	64 (6.5, 47)	
Upper cowl stay mounting nut	1	8	47 (4.8, 35)	
Seat rail lower mounting nut	2	10	44 (4.5, 33)	
Seat rail upper mounting flange nut	1	10	54 (5.5, 40)	
Exhaust pipe joint special nut	8	6	12 (1.2, 9)	
Exhaust pipe flange nut	1	8	21 (2.1, 15)	
Pillion footpeg bracket socket bolt	4	8	32 (3.3, 24)	

FUEL SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Fuel filler cap bolt	3	4	2 (0.18, 1.3)	
Fuel hose banjo bolt (fuel tank side)	1	12	22 (2.2, 16)	
Fuel hose sealing nut (throttle body side)	1	12	22 (2.2, 16)	
Fuel pump mounting nut	6	6	12 (1.2, 9)	
				
O ₂ sensor	1	12	25 (2.6, 19)	

COOLING SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Cooling fan mounting nut	1	5	3 (0.27, 2.0)	NOTE 2
Fan motor mounting nut	3	5	5 (0.5, 3.6)	
Fan motor switch	1	18	18 (1.8, 13)	

ENGINE MOUNTING

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Engine hanger flange nut (front)	1	12	54 (5.5, 40)	
Engine hanger flange bolt (rear)	2	10	44 (4.5, 33)	
Engine hanger flange bolt (middle)	2	10	44 (4.5, 33)	
Shock absorber lower bracket flange cap nut (lower)	1	10	39 (4.0, 29)	
Shock absorber lower bracket flange nut (upper)	1	10	42 (4.3, 31)	NOTE 5

CLUTCH

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Clutch hose oil bolt	2	10	34 (3.5, 25)	
Clutch master cylinder reservoir cap screw	2	4	2 (0.2, 1.4)	
Clutch lever pivot bolt	1	6	1 (0.1, 0.7)	
Clutch lever pivot nut	1	6	6 (0.6, 4.3)	
Clutch switch screw	1	4	1 (0.1, 0.7)	

GENERAL INFORMATION

FRONT WHEEL/SUSPENSION/STEERING

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Handlebar weight mounting screw	2	6	10 (1.0, 7)	NOTE 6
Handlebar pinch bolt	2	8	26 (2.7, 20)	
Front axle bolt	1	14	59 (6.0, 43)	
Front axle holder pinch bolt	2	8	22 (2.2, 16)	
Front brake disc bolt	12	6	20 (2.0, 14)	NOTE 6
Fork socket bolt	2	8	20 (2.0, 14)	NOTE 2
Fork cap	2	39	23 (2.3, 17)	
Fork damper rod lock nut	2	10	20 (2.0, 14)	
Steering stem nut	1	24	103 (10.5, 76)	
Steering bearing adjusting nut	1	26	25 (2.5, 18)	See page 13-37
Steering bearing adjusting nut lock nut	1	26	-	
Fork top bridge pinch bolt	2	8	23 (2.3, 17)	
Fork bottom bridge pinch bolt	2	10	49 (5.0, 36)	

REAR WHEEL/SUSPENSION

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Rear axle nut	1	35	201 (20.5, 148)	NOTE 3, 4
Final driven sprocket nut	6	10	64 (6.5, 47)	
Rear wheel bolt	4	12	108 (11.0, 80)	
Rear brake disc nut	4	8	34 (3.5, 25)	NOTE 5
Rear brake torque rod bolt	2	10	34 (3.5, 25)	NOTE 2
Swingarm pivot nut	1	18	93 (9.5, 69)	
Drive chain slider flange bolt	4	6	9 (0.9, 6.5)	NOTE 6
Axle bearing holder pinch bolt	1	16	74 (7.5, 54)	
Air guide mounting bolt	2	6	9 (0.9, 6.5)	NOTE 6
Rear shock absorber mounting nut	2	10	42 (4.3, 31)	NOTE 5
Shock arm nut (frame side)	1	10	42 (4.3, 31)	NOTE 5
Shock arm nut (link plate side)	1	10	42 (4.3, 31)	NOTE 5
Shock link plate-to-swingarm nut	1	10	42 (4.3, 31)	NOTE 5
Bearing holder stopper bolt	1	5	7 (0.7, 5.1)	NOTE 2

GENERAL INFORMATION

HYDRAULIC BRAKE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE		REMARKS
			N·m (kgf·m, lbf·ft)		
Front master cylinder reservoir cap screw	2	4	2 (0.2, 1.4)		
Front brake lever pivot bolt	1	6	1 (0.1, 0.7)		
Front brake lever pivot nut	1	6	6 (0.6, 4.3)		
Front brake light switch screw	1	4	1 (0.1, 0.7)		
Right front brake caliper mounting bolt	2	8	31 (3.2, 23)		NOTE 6
Left front brake caliper pivot bolt	1	8	31 (3.2, 23)		NOTE 6
Left front brake caliper bolt (second master joint)	1	8	31 (3.2, 23)		NOTE 6
Caliper body B bolt	9	8	32 (3.3, 24)		NOTE 6
Front caliper main slide pin	2	12	23 (2.3, 17)		
Front caliper sub slide pin	2	8	13 (1.3, 9)		
Pad pin	3	10	18 (1.8, 13)		
Brake caliper bleed valve	3	8	6 (0.6, 4.3)		
Second master cylinder push rod nut	1	8	18 (1.8, 13)		
Second master cylinder connector	1	6	10 (1.0, 7)		NOTE 2
Rear master cylinder push rod joint nut	1	8	18 (1.8, 13)		
Rear master cylinder reservoir hose joint screw	1	4	2 (0.15, 1.1)		
Brake hose oil bolt	7	10	34 (3.5, 25)		
Brake pipe joint	–	10	17 (1.7, 12)		NOTE 4
Front brake hose clamp flange bolt (left fork)	1	6	10 (1.0, 7)		
Front brake hose 3-way joint bolt (right side)	1	6	10 (1.0, 7)		
Front brake hose clamp bolt (steering stem)	2	6	10 (1.0, 7)		
PCV air bleed valve	1	8	8 (0.8, 5.8)		
Rear brake caliper mounting bolt	2	8	31 (3.2, 23)		NOTE 6

ABS

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE		REMARKS
			N·m (kgf·m, lbf·ft)		
Front wheel pulser ring mounting bolt	3	5	7 (0.7, 5.1)		NOTE 2
Rear wheel pulser ring mounting bolt	4	5	9 (0.9, 6.5)		NOTE 2
Modulator body mounting bolt	8	5	4 (0.4, 2.9)		
Angle sensor assembly	4	5	4 (0.4, 2.9)		
Back-up spring cap	4	4	2.5 (0.25, 1.8)		
Modulator oil bolt	8	10	34 (3.5, 25)		
Brake pipe joint bleeder screw	1	8	6 (0.6, 4.3)		

LIGHTS/METERS/SWITCHES

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE		REMARKS
			N·m (kgf·m, lbf·ft)		
Side stand switch bolt	1	6	10 (1.0, 7)		NOTE 6
Ignition switch mounting bolt	2	8	26 (2.7, 20)		

OTHERS

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE		REMARKS
			N·m (kgf·m, lbf·ft)		
Side stand bracket socket bolt	2	10	39 (4.0, 29)		
Side stand pivot bolt	1	10	10 (1.0, 7)		
Side stand pivot nut	1	10	29 (3.0, 22)		
Rear shock absorber upper bracket flange nut	1	10	42 (4.3, 31)		NOTE 5
Footpeg bracket bolt	4	8	32 (3.3, 24)		
Main stand flange bolt	1	10	54 (5.5, 40)		NOTE 10
Main stand special bolt	1	10	54 (5.5, 40)		

TOOLS

1. Equivalent commercially available in U.S.A.
2. Not available in U.S.A.
3. U.S.A. only
4. Newly designed tool.
5. Newly provided tool.
6. Alternative tool.

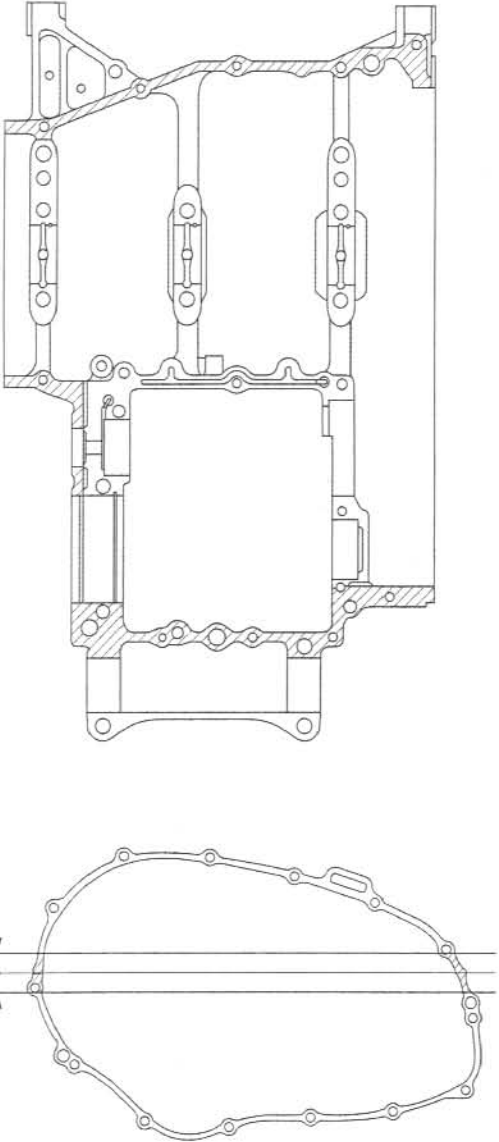
DESCRIPTION	TOOL NUMBER	REMARKS	REF. SEC.
ECM test harness 26P	070MZ-0010100	NOTE 4: Two required	5
Valve spring compressor attachment, ϕ 16 X 75	070ME-MCW0100	NOTE 4	8
Oil pressure gauge attachment	07406-0030001	NOTE 1	4
Fuel pressure gauge	07406-0040003	NOTE 6: 07406-0040002	5
Oil pressure gauge set	07506-3000001	NOTE 1	4
Clutch center holder	07724-0050002	NOTE 1	9
Flywheel holder	07725-0040000	NOTE 1	17
Rotor puller	07733-0020001	NOTE 6: 07933-3950000	17
Remover weight	07741-0010201		14
Attachment, 37 X 40 mm	07746-0010200		14
Attachment, 42 X 47 mm	07746-0010300		13, 14
Attachment, 52 X 55 mm	07746-0010400		14
Attachment, 62 X 68 mm	07746-0010500		14
Attachment, 24 X 26 mm	07746-0010700		14
Inner driver C	07746-0030100		11
Attachment, 25 mm I.D.	07746-0030200		12
Pilot, 17 mm	07746-0040400		14
Pilot, 20 mm	07746-0040500		13, 14
Pilot, 35 mm	07746-0040800		14
Pilot, 40 mm	07746-0040900		14
Pilot, 28 mm	07746-0041100		14
Bearing remover shaft	07746-0050100		13
Bearing remover head, 20 mm	07746-0050600		13
Driver	07749-0010000		13, 14
Valve spring compressor	07757-0010000		8
Valve seat cutter		NOTE 1	8
- Seat cutter, 27.5 mm (45° EX)	07780-0010200		
- Seat cutter, 29 mm (45° IN)	07780-0010300		
- Flat cutter, 28 mm (32° EX)	07780-0012100		
- Flat cutter, 30 mm (32° IN)	07780-0012200		
- Interior cutter, 30 mm (60° IN/EX)	07780-0014000		
- Cutter holder, 4.5 mm	07781-0010600		
Snap ring pliers	07914-SA50001		5, 9, 16
Steering stem socket	07916-3710101	NOTE 6: 07916-3710100	13
Bearing remover handle	07936-3710100		14
Bearing remover head	07936-3710600		14
Attachment, 28 X 30 mm	07946-1870100		14
Steering stem driver	07946-MB00000		13
Needle bearing remover	07946-KA50000		13
Ball race remover set	07946-KM90001		13
- Driver attachment, A	07946-KM90100		
- Driver attachment, B	07946-KM90200		
- Driver shaft assembly	07946-KM90300		
- Bearing remover, A	07946-KM90401		
- Bearing remover, B	07946-KM90500		
- Assembly base	07946-KM90600		
Steering stem driver	07946-MB00000		13
Main bearing driver attachment	07946-ME90200	NOTE 3	13
Driver shaft	07946-MJ00100		14
Slider weight	07947-KA50100	NOTE 3	13
Fork seal driver	07947-KF00100		13
Fork seal driver attachment	07947-KA40200		13
Valve spring compressor attachment	07959-KM30101		8

GENERAL INFORMATION

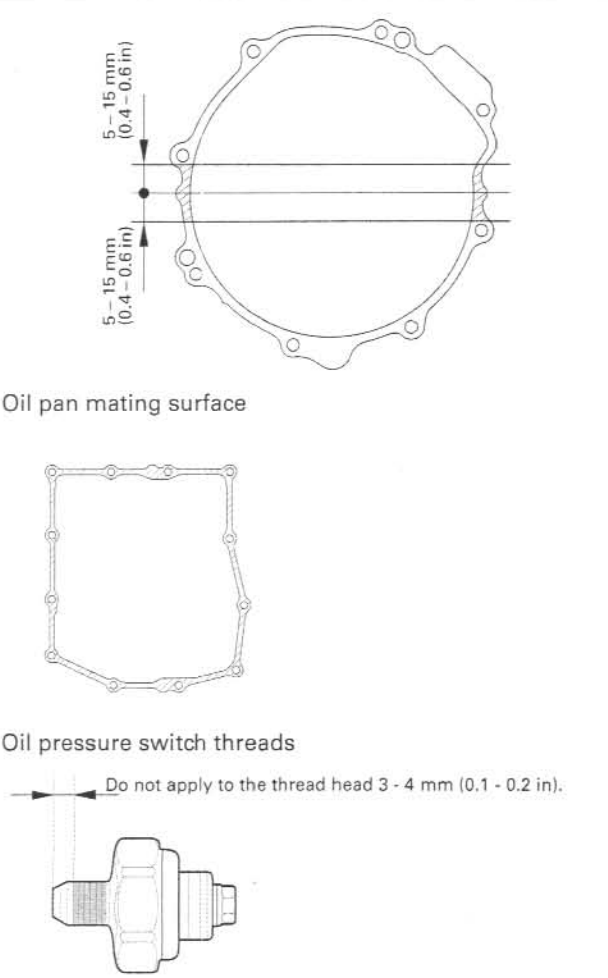
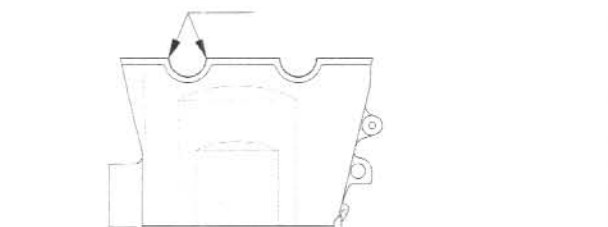
DESCRIPTION	TOOL NUMBER	REMARKS	REF. SEC.
Oil seal driver	07965-MA60000	NOTE 3	13
Pin driver	07GMD-KT80100		14
Oil filter wrench	07HAA-PJ70101		3
Peak voltage adaptor	07HGJ-0020100	NOTE 2	5, 18, 20
Needle bearing remover	07HMC-MR70100		14
Valve guide driver	07HMD-ML00101		8
Valve guide reamer, 4.5 mm	07HMH-ML00101		8
Tappet hole protector	07HMG-MR70002		8
Drive chain tool set	07HMH-MR10103	NOTE 3, 6:07HMH-MR1010B	3
Socket wrench, 46 mm	07HMJ-MN50100		14
Bearing remover set	07LMC-KV30100		14
Compression gauge attachment	07RMJ-MY50100	NOTE 1	8
Gauge joint adaptor	07RMK-MW40100		4
O ₂ sensor wrench	07LAA-PT50101		5
Installer shaft	07VMF-KZ30200	NOTE 3	13
Installer attachment A	07VMF-MAT0100	NOTE 3	13
Remover attachment B	07VMF-MAT0100	NOTE 3	13
Slide pin stopper	07XMZ-MCE0100	NOTE 5	8
Tensioner holder B	07ZMG-MCAA400		8

LUBRICATION & SEAL POINTS

ENGINE

LOCATION	MATERIAL	REMARKS
<p data-bbox="127 277 412 304">Crankcase mating surface</p> 	<p data-bbox="774 277 1017 355">Liquid sealant (Three Bond 1207B or equivalent)</p>	

GENERAL INFORMATION

LOCATION	MATERIAL	REMARKS
 <p>Oil pan mating surface</p> <p>Oil pressure switch threads</p> <p>Do not apply to the thread head 3 - 4 mm (0.1 - 0.2 in).</p> <p>Alternator wire grommet Ignition pulse generator wire grommet Gearshift linkage cover bolt threads (2 places)</p>	<p>Liquid sealant (Three Bond 1207B or equivalent)</p>	<p>Coating width: 6.5 ± 1 mm</p>
 <p>Cylinder head semi-circular cut-out</p>	<p>Sealant</p>	
<p>Main journal bearing surface Connecting rod bearing surface Valve stem (valve guide sliding surface) M3/4, C5, C6 shifter gear (shift fork grooves) Piston pin bore Connecting rod small end inner surface Valve lifter outer sliding surface Camshaft lobes/journals and thrust surface Clutch outer/primary driven gear sliding surface Primary drive gear sliding surface</p>	<p>Molybdenum disulfide oil (a mixture of 1/2 engine oil and 1/2 molybdenum disulfide grease)</p>	

GENERAL INFORMATION

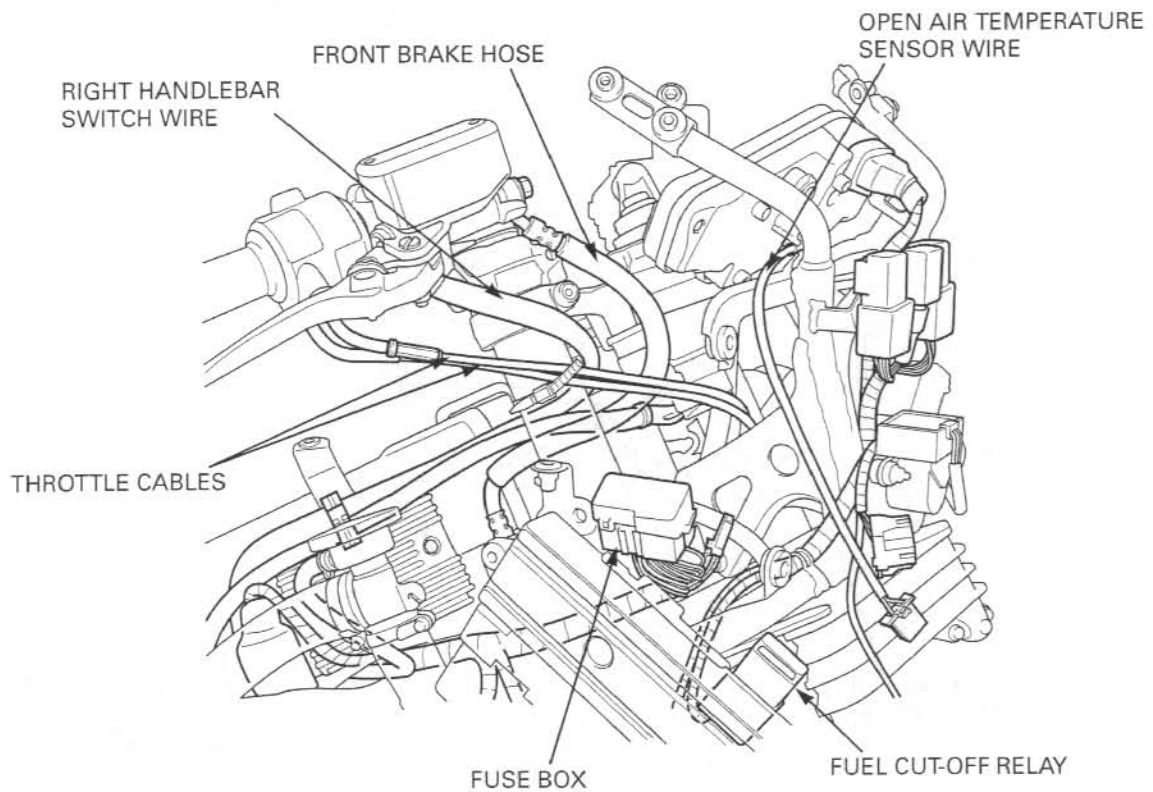
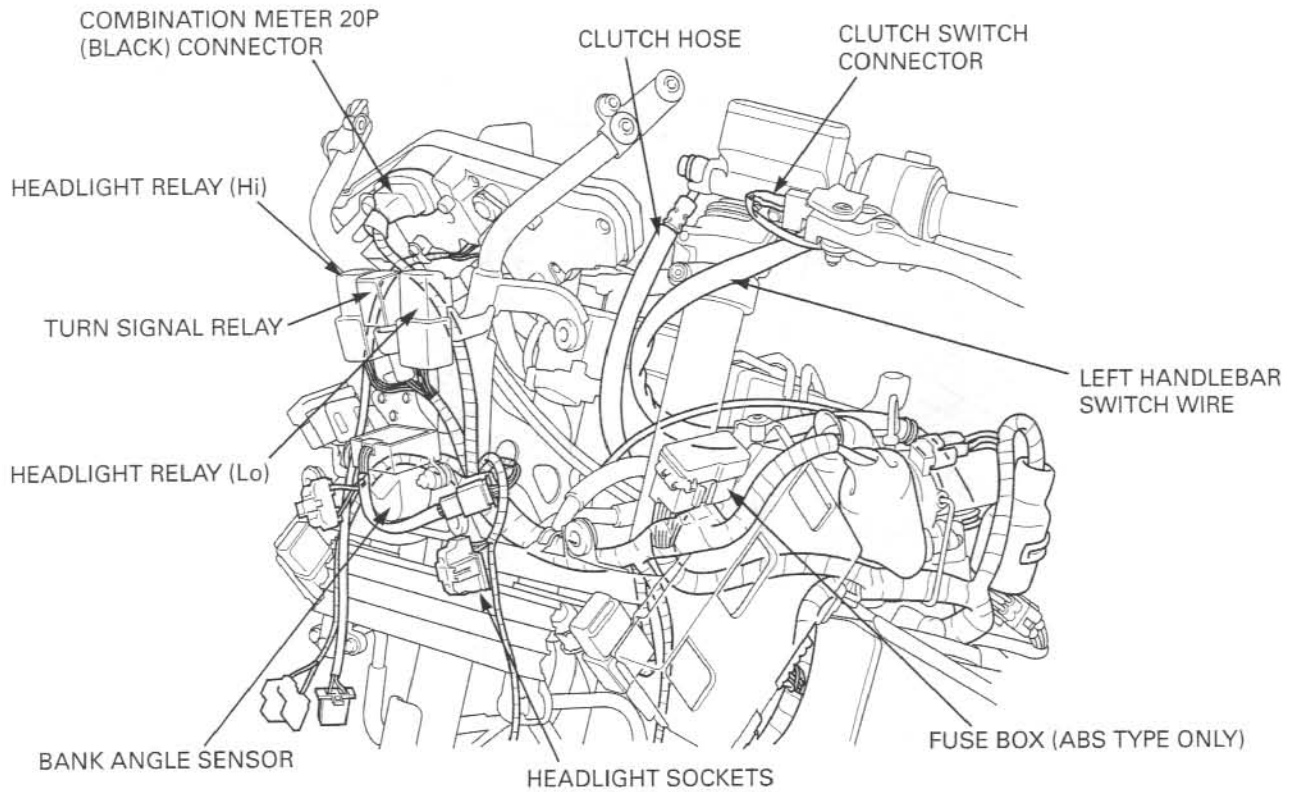
LOCATION	MATERIAL	REMARKS
Piston sliding area Piston ring surface Clutch disc surface Each bearing Each gear teeth and rotating surface Main journal 9 mm bolt threads and seating Cylinder head 9 mm bolt threads and seating surface Connecting rod nut threads Clutch center lock nut threads Flywheel bolt threads and seating surface Primary drive gear bolt threads and seating surface Oil filter cartridge threads and O-ring Each O-ring Other rotating area and sliding surface	Engine oil	
Timing hole cap threads Each oil seal lips	Multi-purpose grease	
Gearshift linkage cover rubber bolt threads Cylinder head cover breather plate bolt threads Oil filter boss threads Oil pump driven sprocket bolt threads Cam sprocket bolt threads Cam chain tensioner pivot bolt threads Cam chain guide bolt threads Mainshaft bearing set plate bolt threads Shift drum bearing set plate bolt threads Shift drum center bolt threads	Locking agent	Coating width: 6.5 ± 1 mm Coating width: 6.5 ± 1 mm Coating width: 6.5 ± 1 mm Coating width: 6.5 ± 1 mm Coating width: 6.5 ± 1 mm Coating width: 6.5 ± 1 mm Coating width: 6.5 ± 1 mm Coating width: 6.5 ± 1 mm Coating width: 6.5 ± 1 mm Coating width: 6.5 ± 1 mm

GENERAL INFORMATION

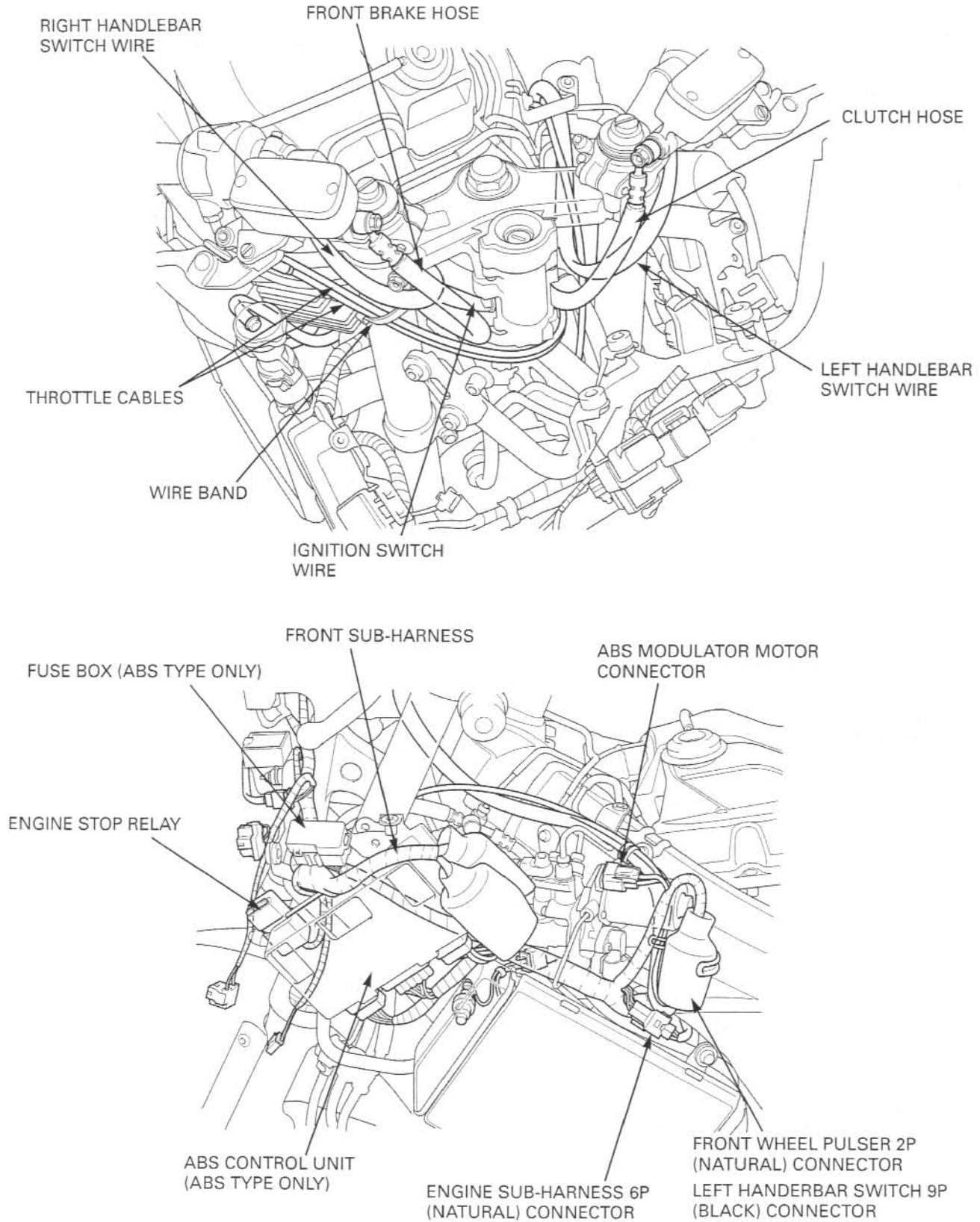
FRAME

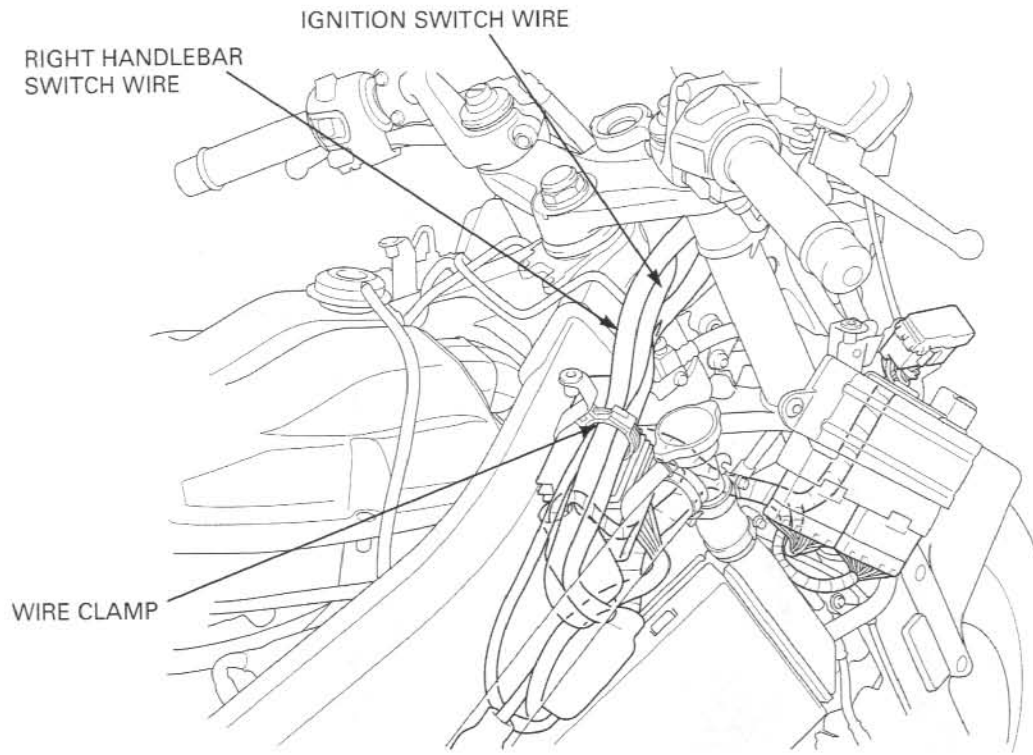
LOCATION	MATERIAL	REMARKS
Seat catch hook sliding area Front wheel dust seal lips Final driven flange-to-rear wheel hub mating surface and O-ring Rear wheel dust seal lips Rear wheel side collar inner surface Throttle grip pipe flange Clutch lever pivot bolt sliding area Rear brake pedal pivot sliding area Driver footpeg sliding area Passenger footpeg sliding area Side stand pivot Center stand pivot	Multi-purpose grease	
Steering head bearing sliding surface Steering head dust seal lips	Urea based multi-purpose grease with extreme pressure (example: EXCELITE EP2 manufactured by KYODO YUSHI, Japan), Shell Stamina EP2 or equivalent	
Swingarm pivot bearings Swingarm pivot dust seal lips Shock arm and shock link needle bearings Shock arm and shock link dust seal lips Shock absorber needle bearings Shock absorber dust seal lips	Multi-purpose grease (Shell Alvania EP2 or equivalent)	
Throttle cable A, B outer inside Handlebar grip rubber inside	Cable lubricant	
Steering bearing adjustment nut threads	Engine oil	
Front brake lever-to-master piston contacting area Front brake lever pivot Rear master brake master piston-to-push rod contacting area Brake caliper dust seals Rear brake caliper boot inside Rear brake caliper pin boot inside	Silicone grease	
Brake master piston and cups Brake caliper piston and piston seals	DOT 4 brake fluid	
Fork cap O-ring Fork dust seal and oil seal lips	Pro Honda Suspension Fluid SS-8	
Rear brake reservoir hose joint screw threads Front brake caliper assembly bolt threads Rear brake caliper pin bolt threads	Locking agent	

CABLE & HARNESS ROUTING

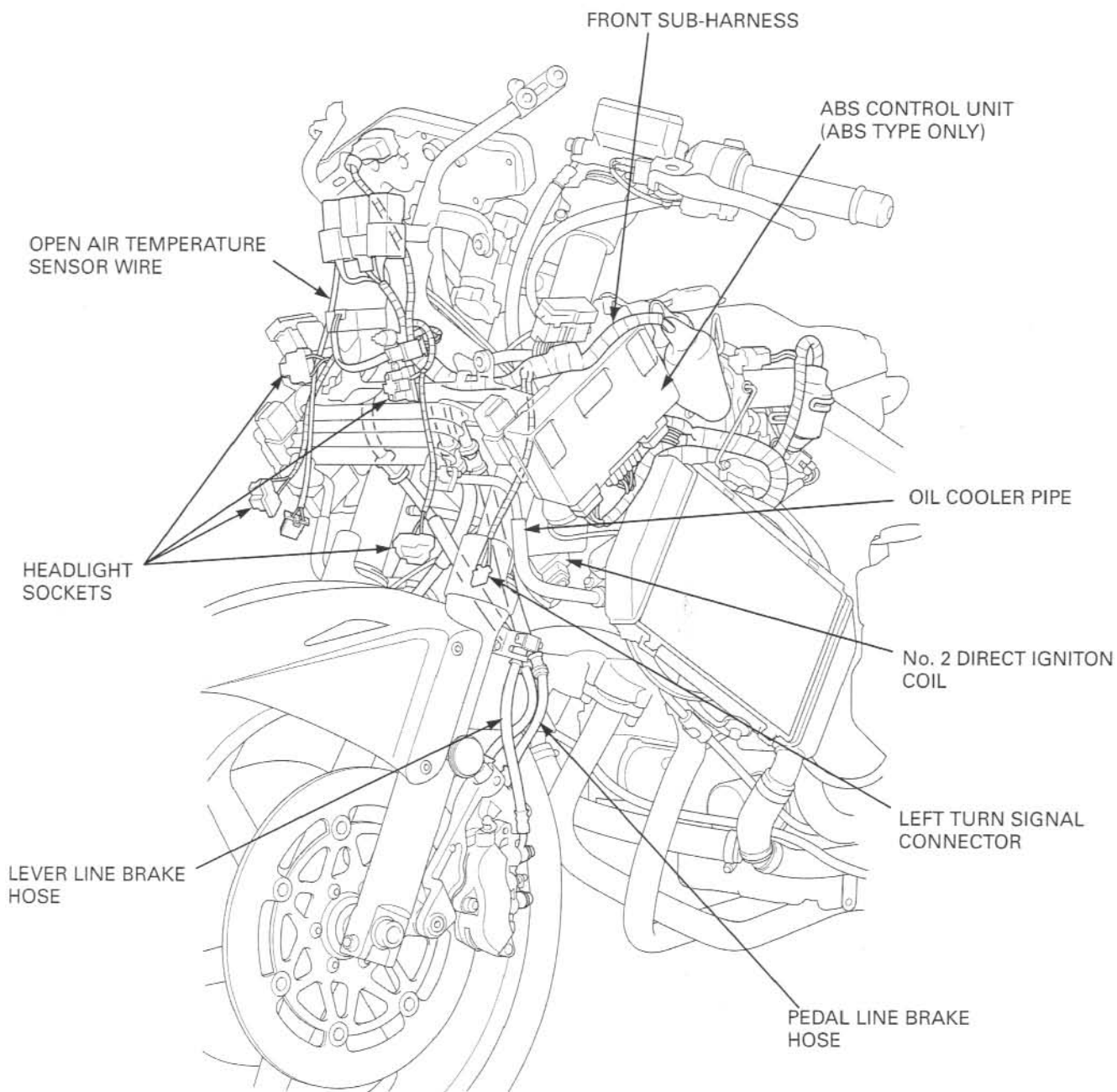


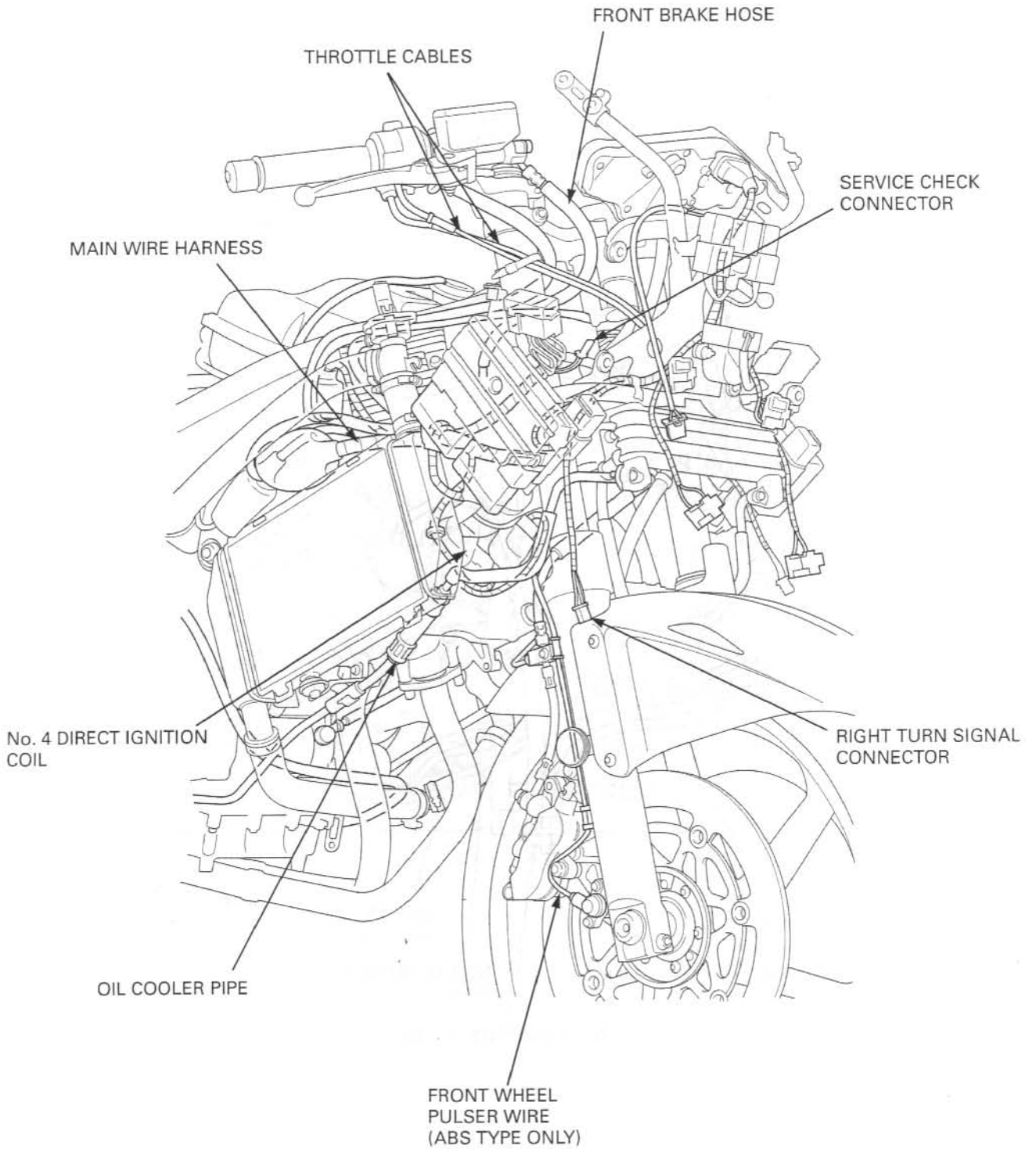
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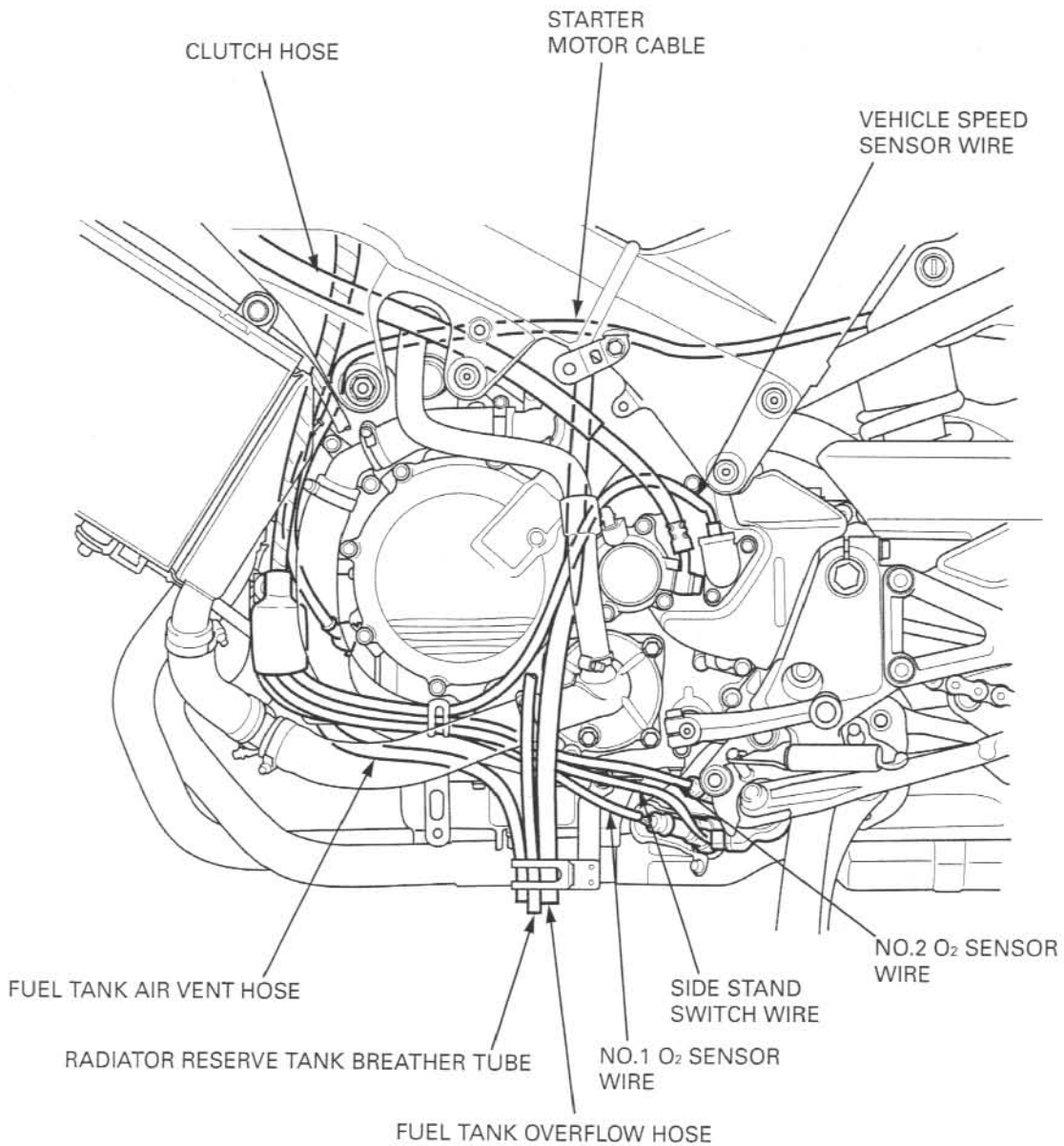


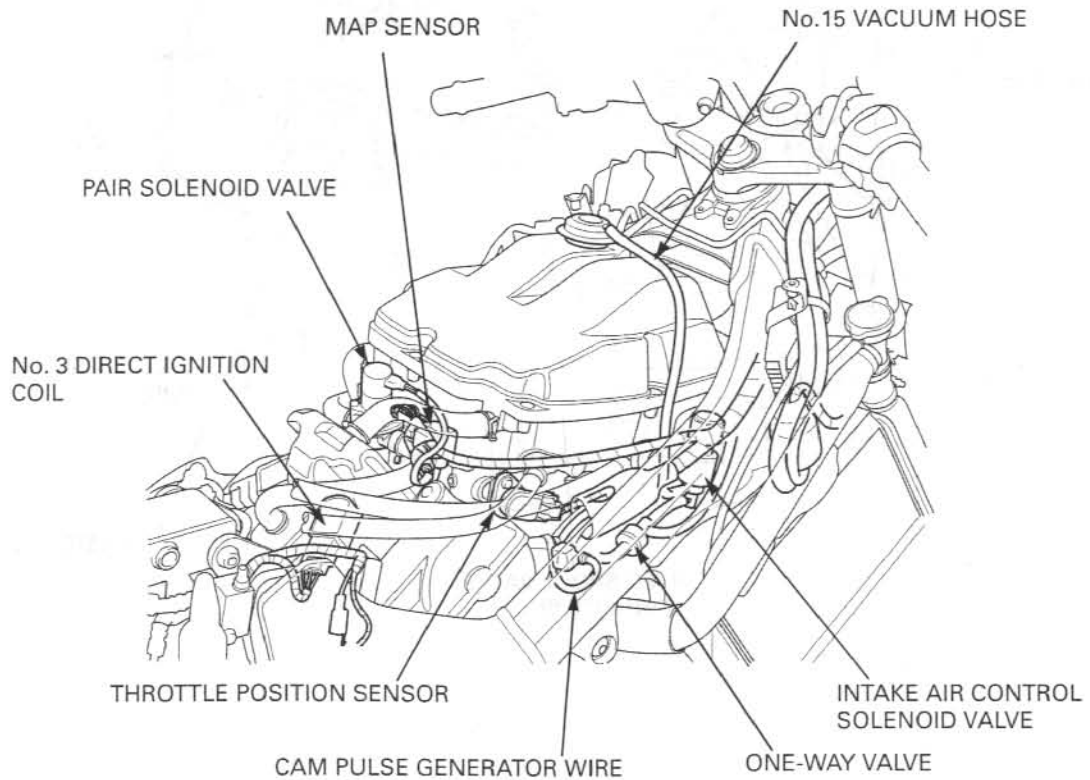
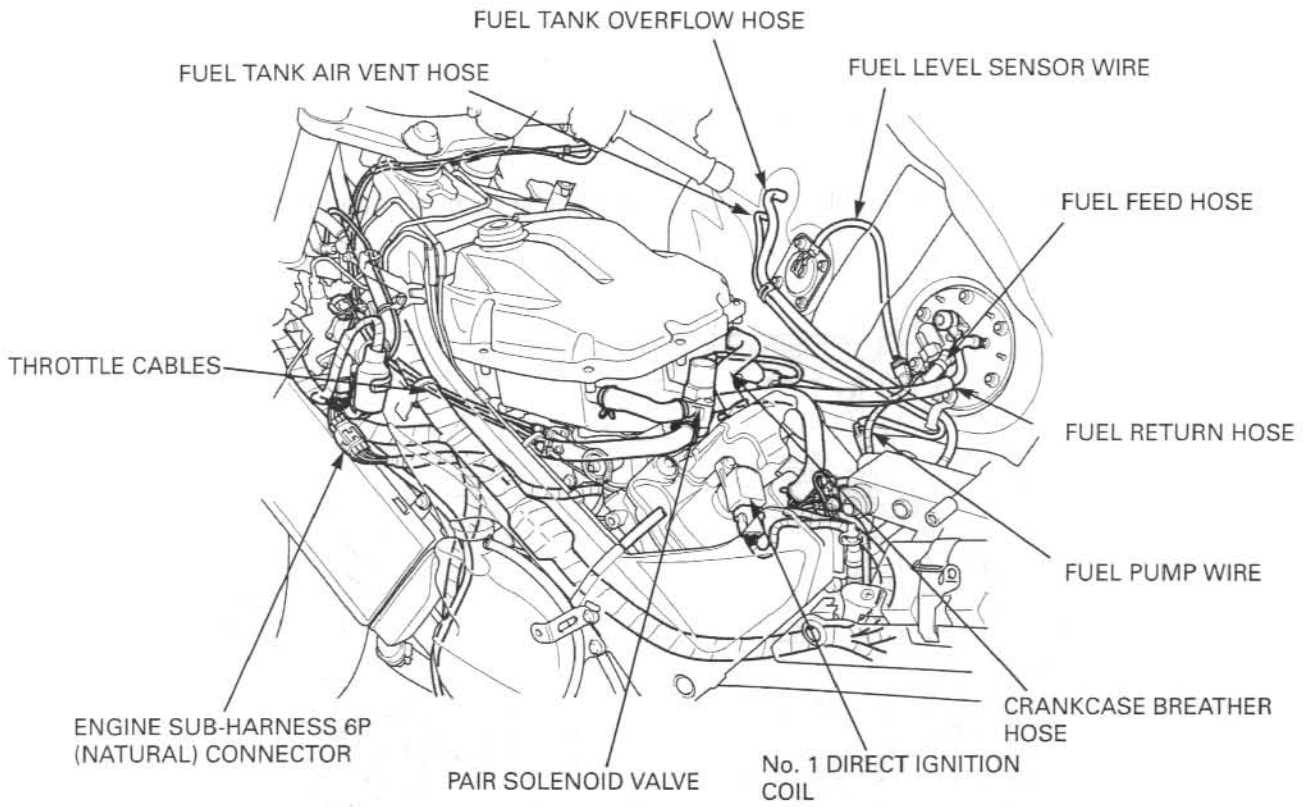
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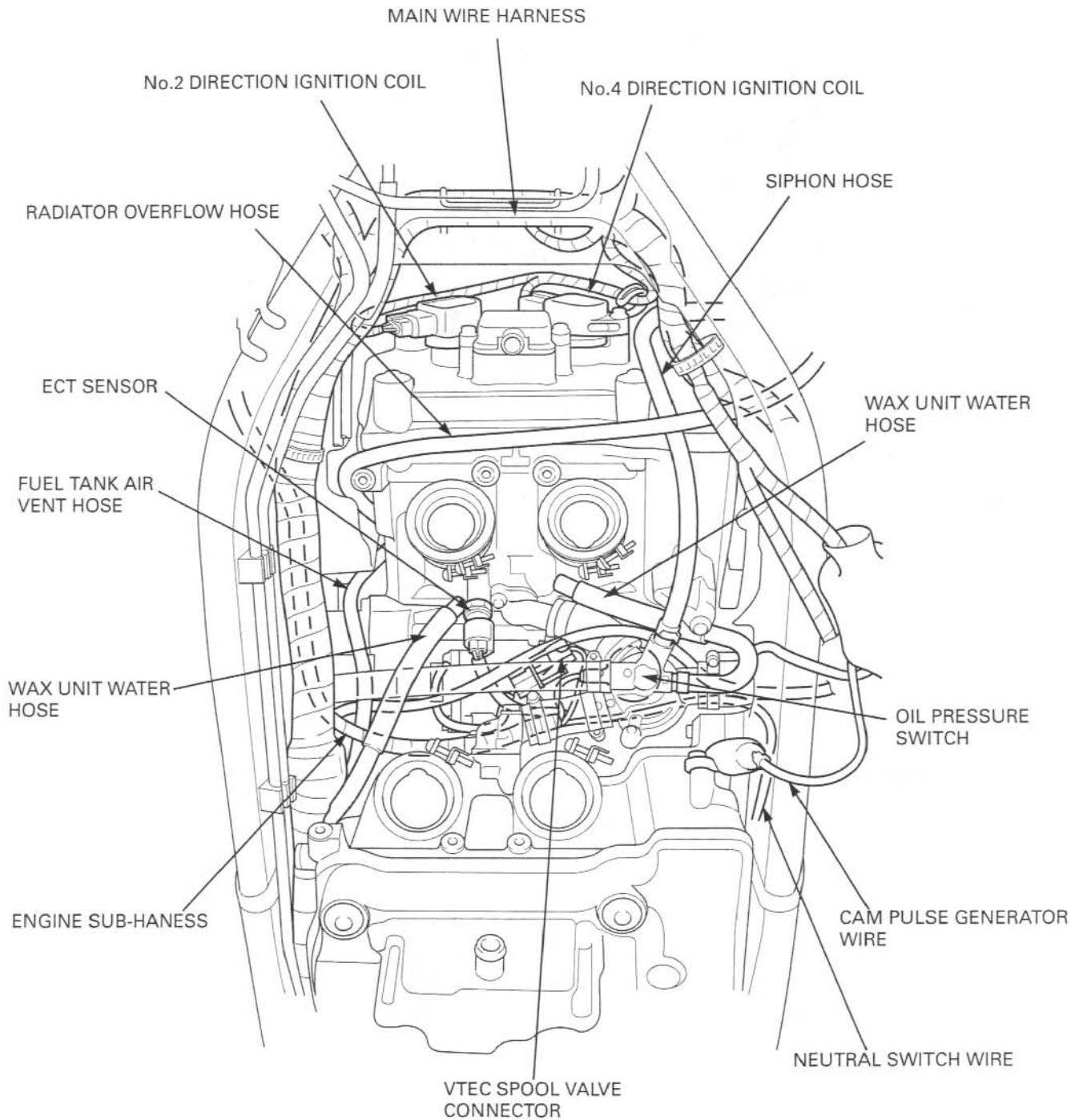


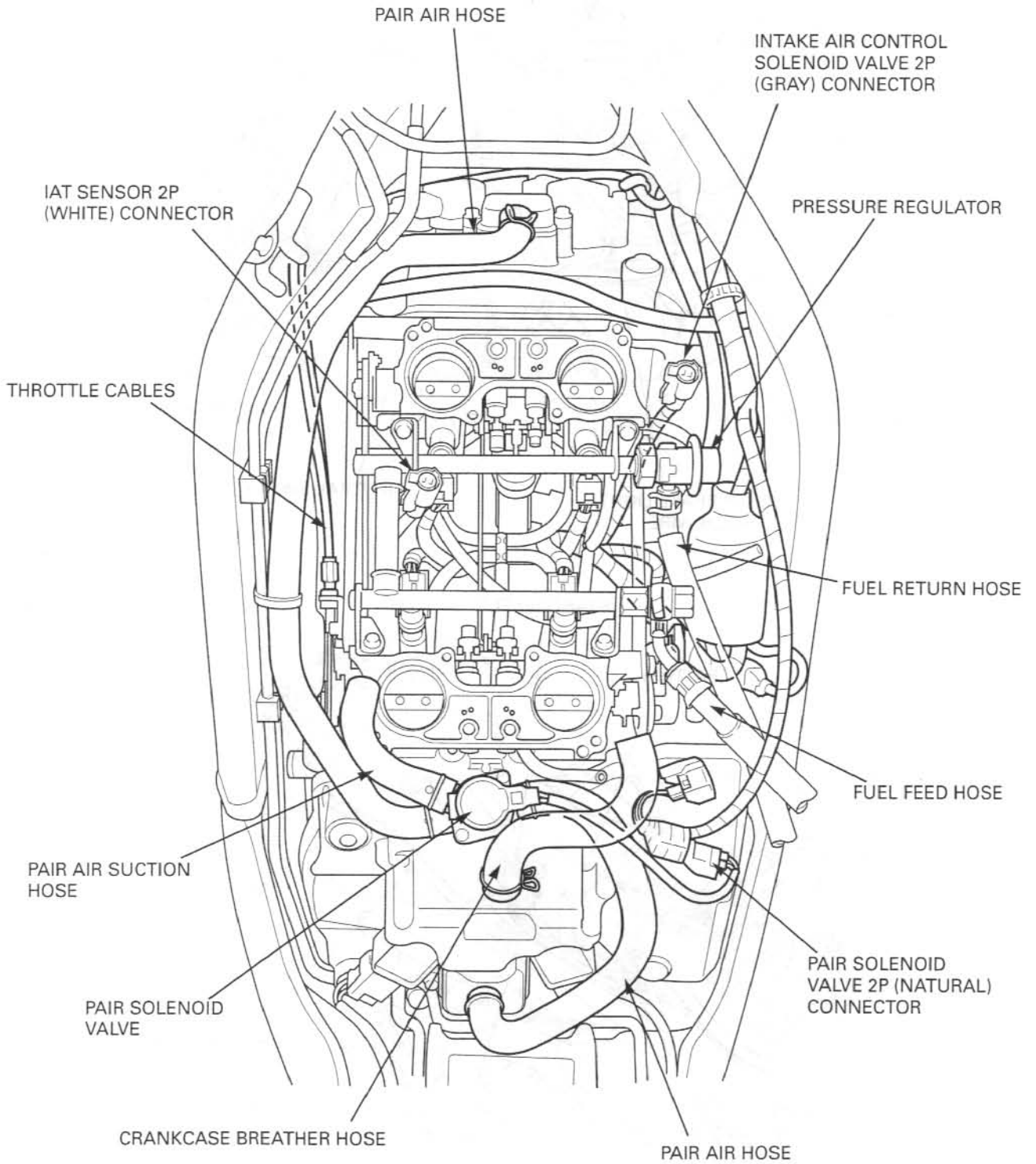
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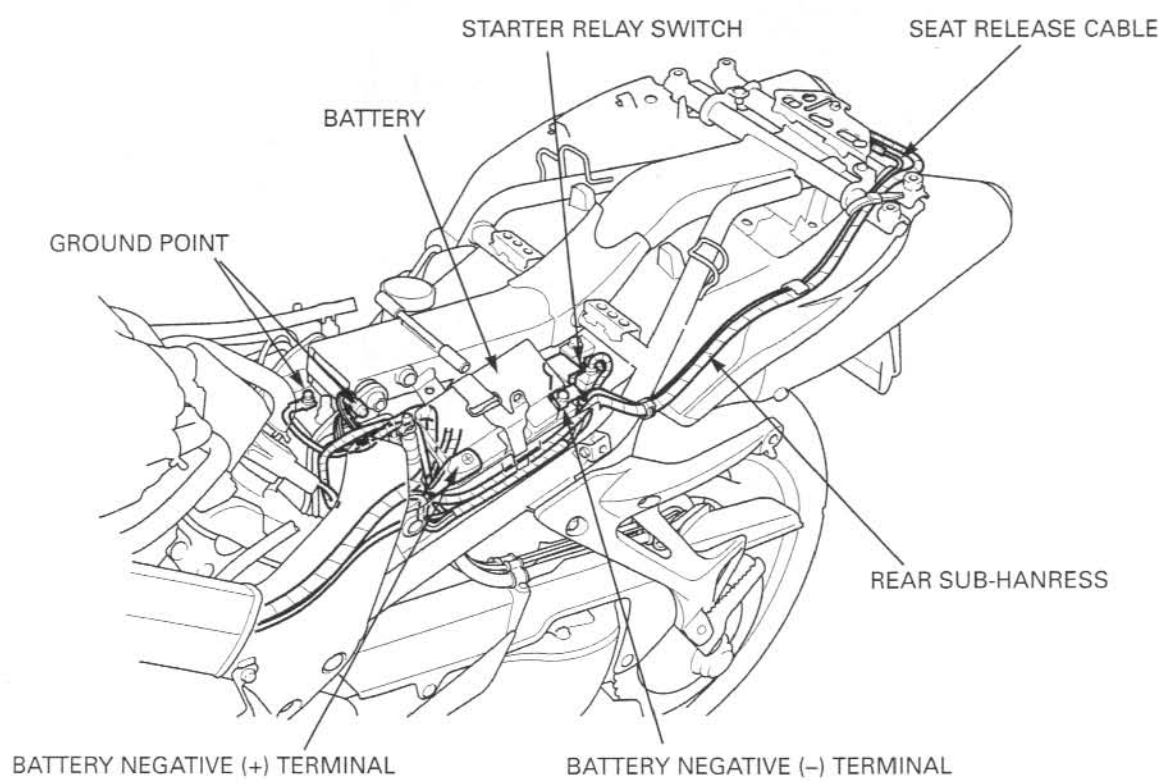
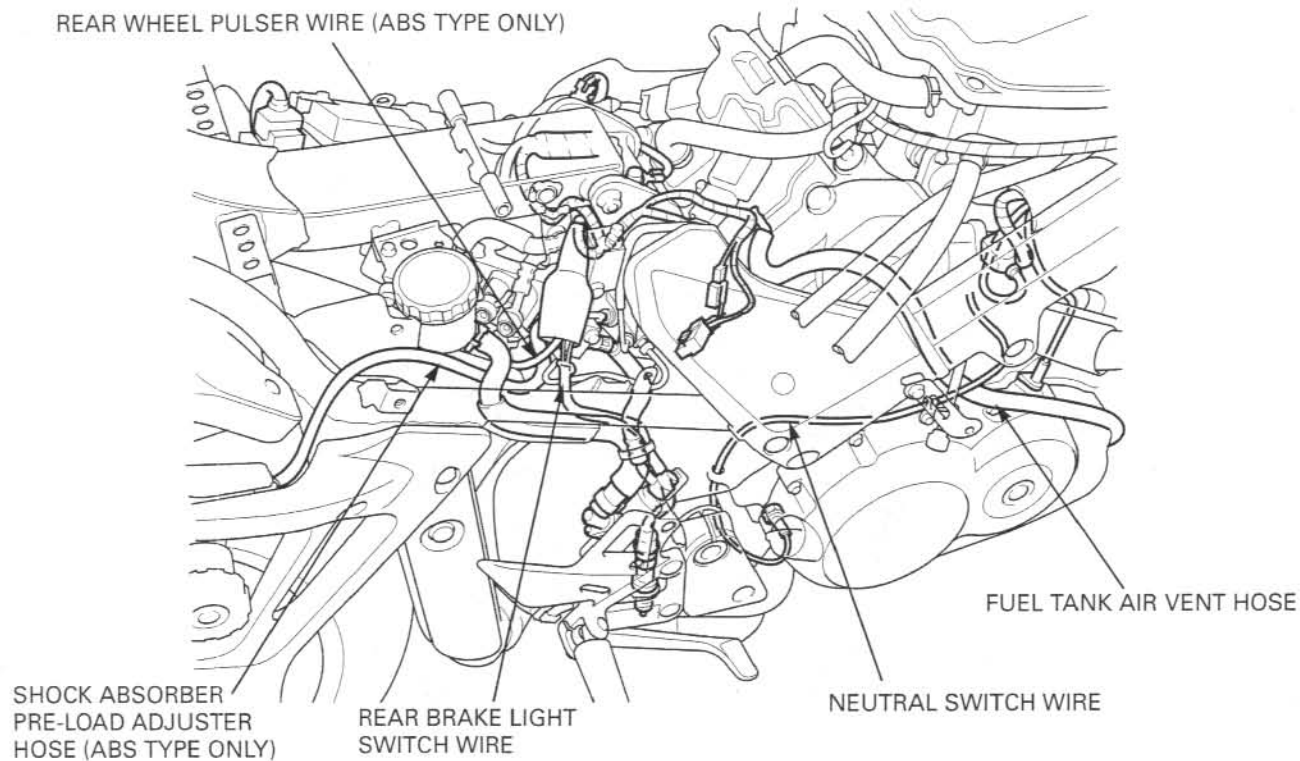


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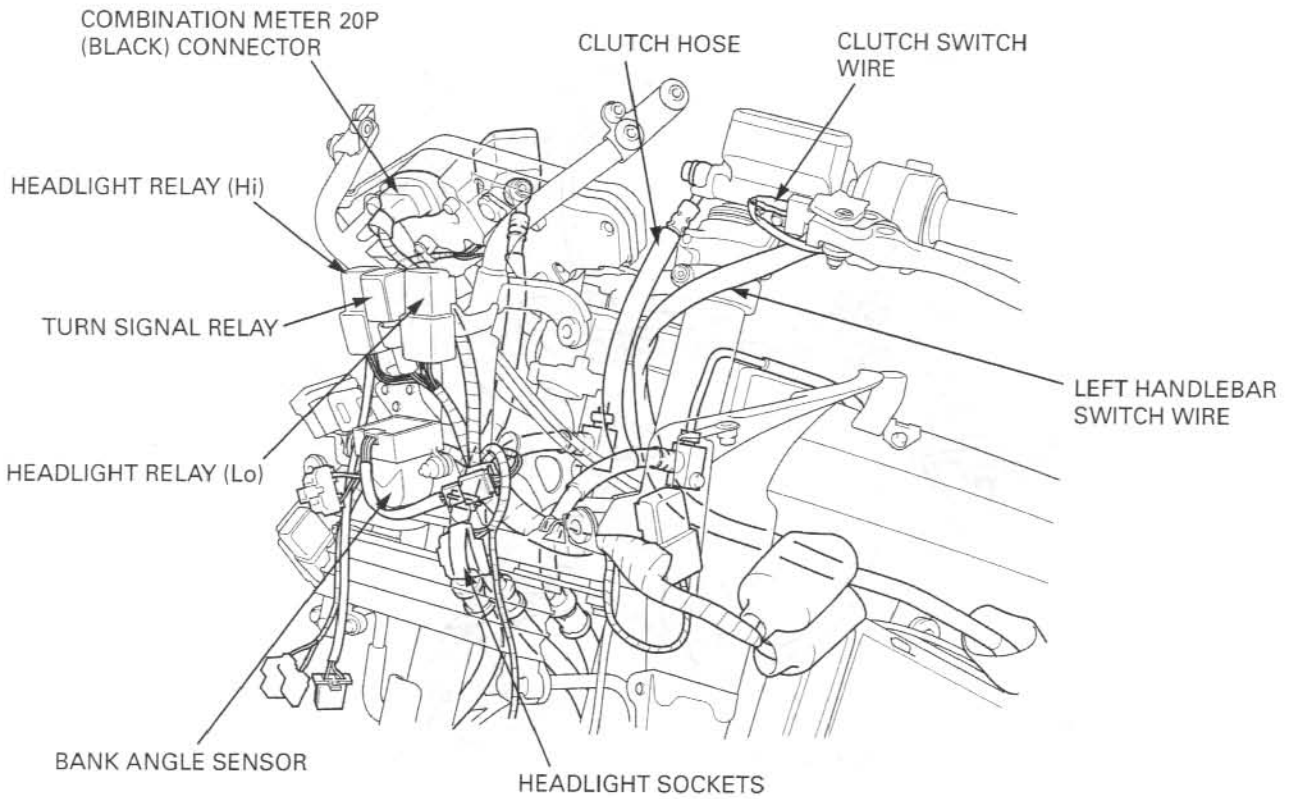




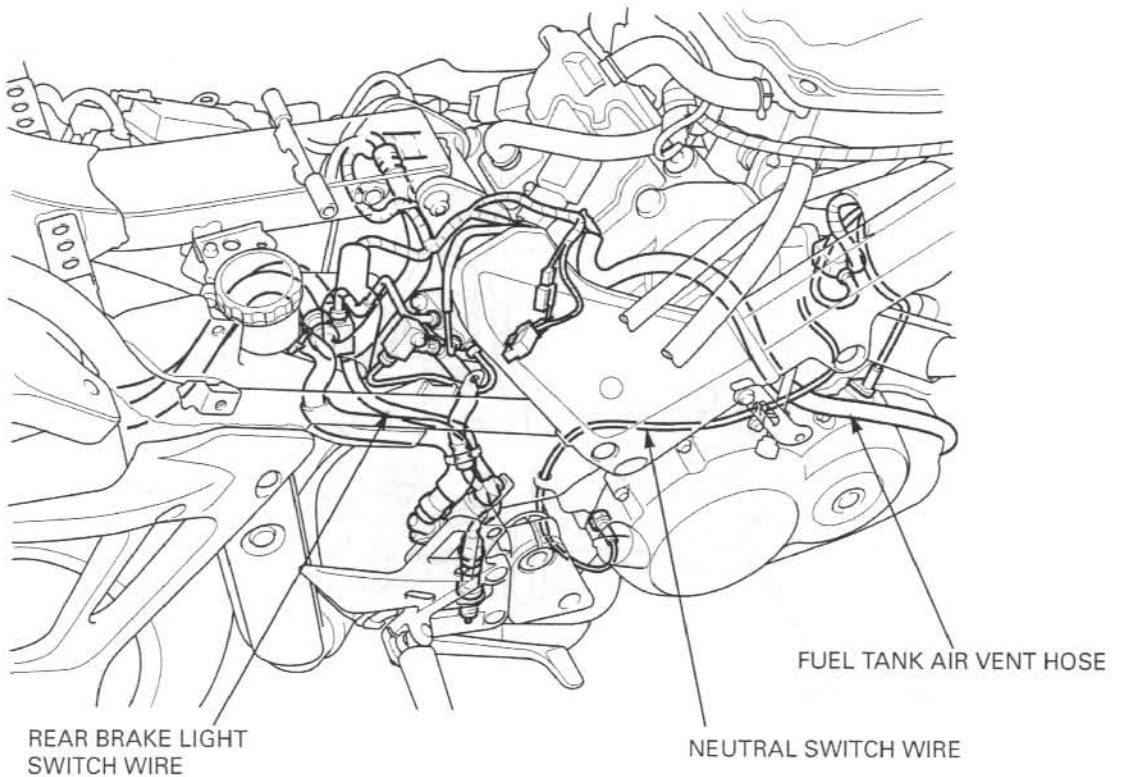
GENERAL INFORMATION



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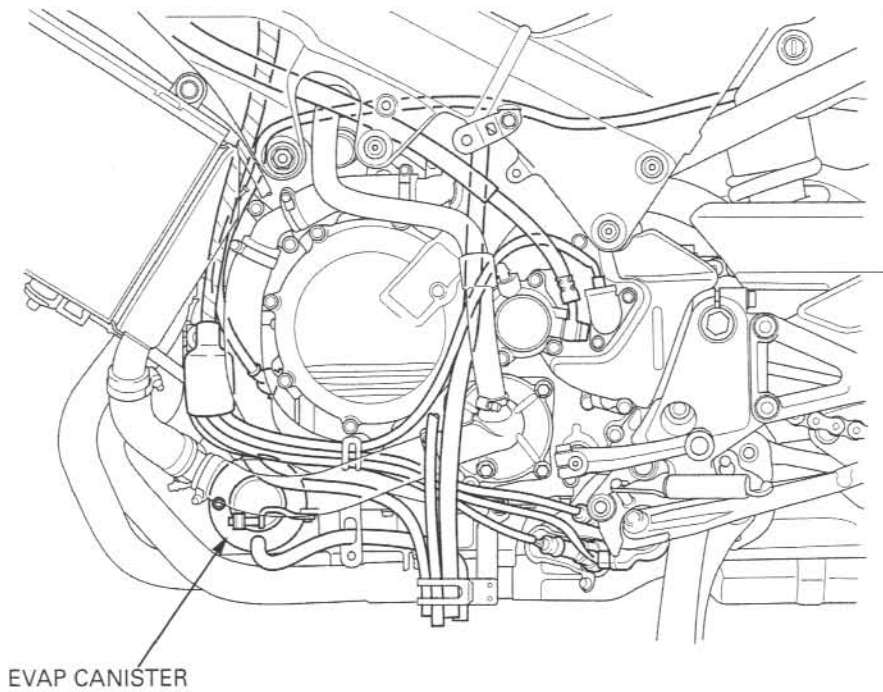
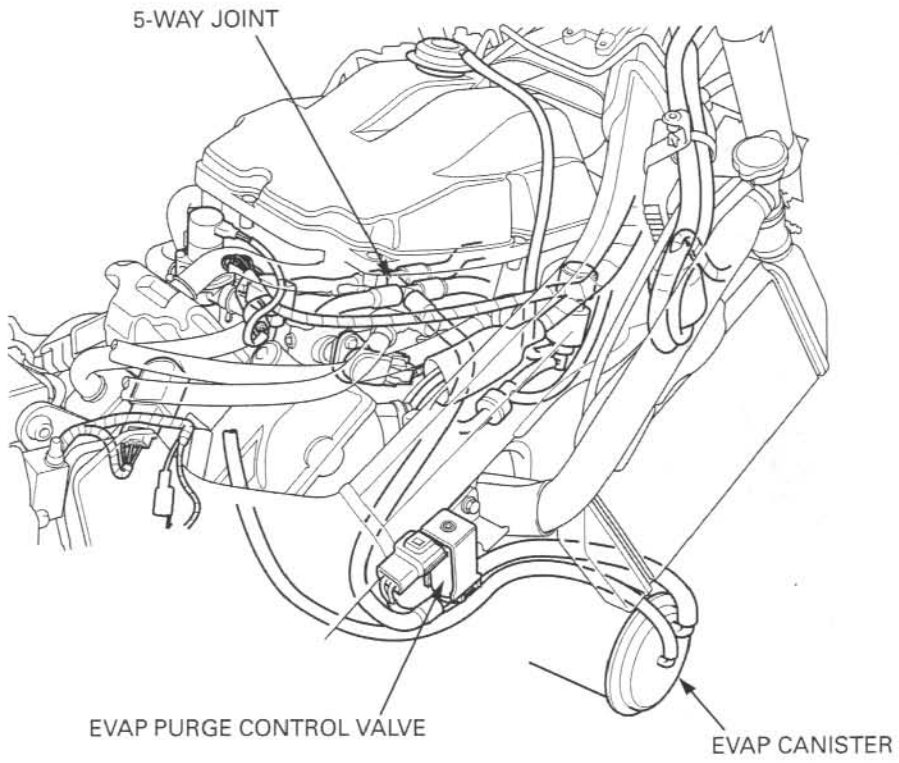


Standard type:



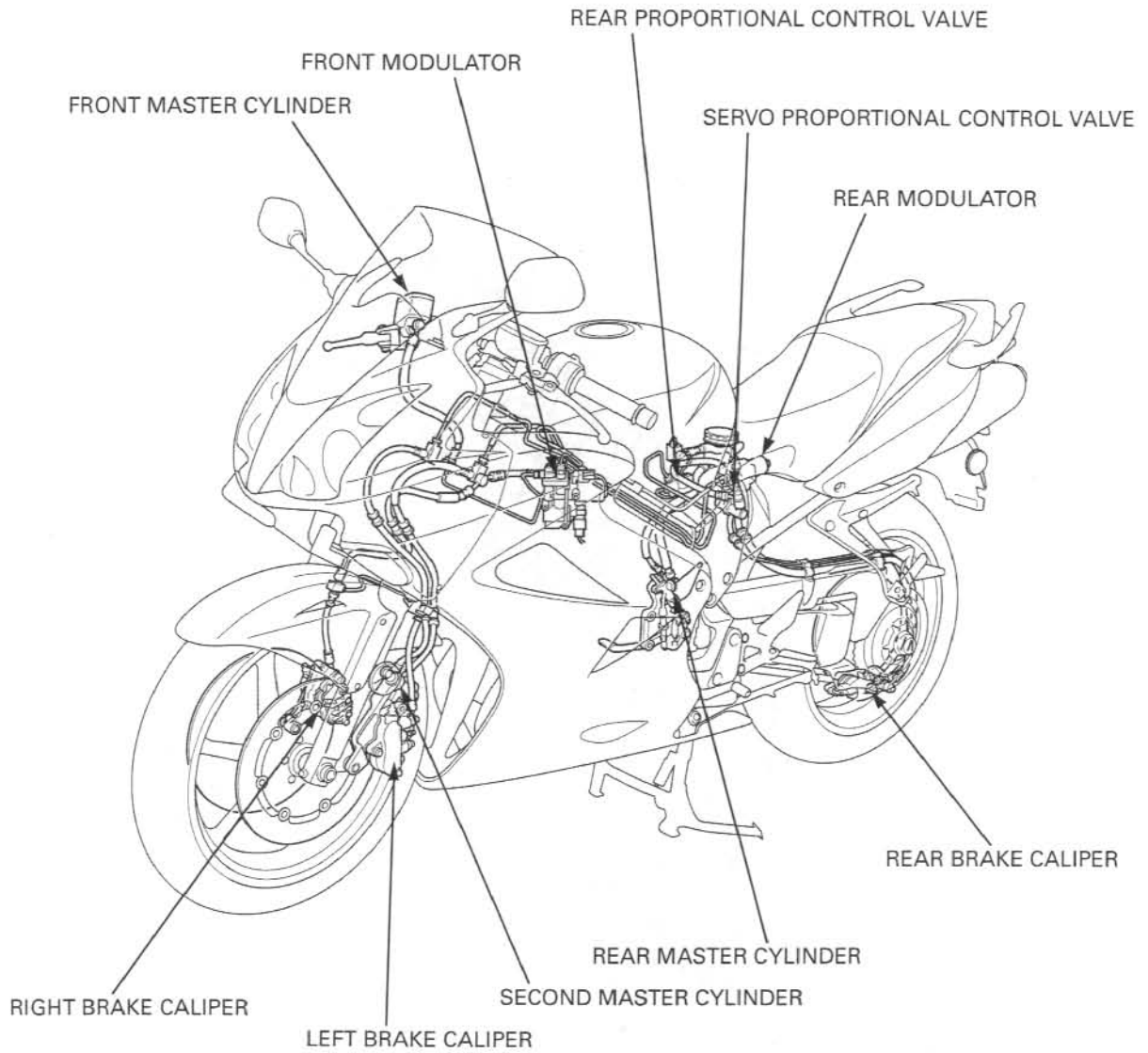
GENERAL INFORMATION

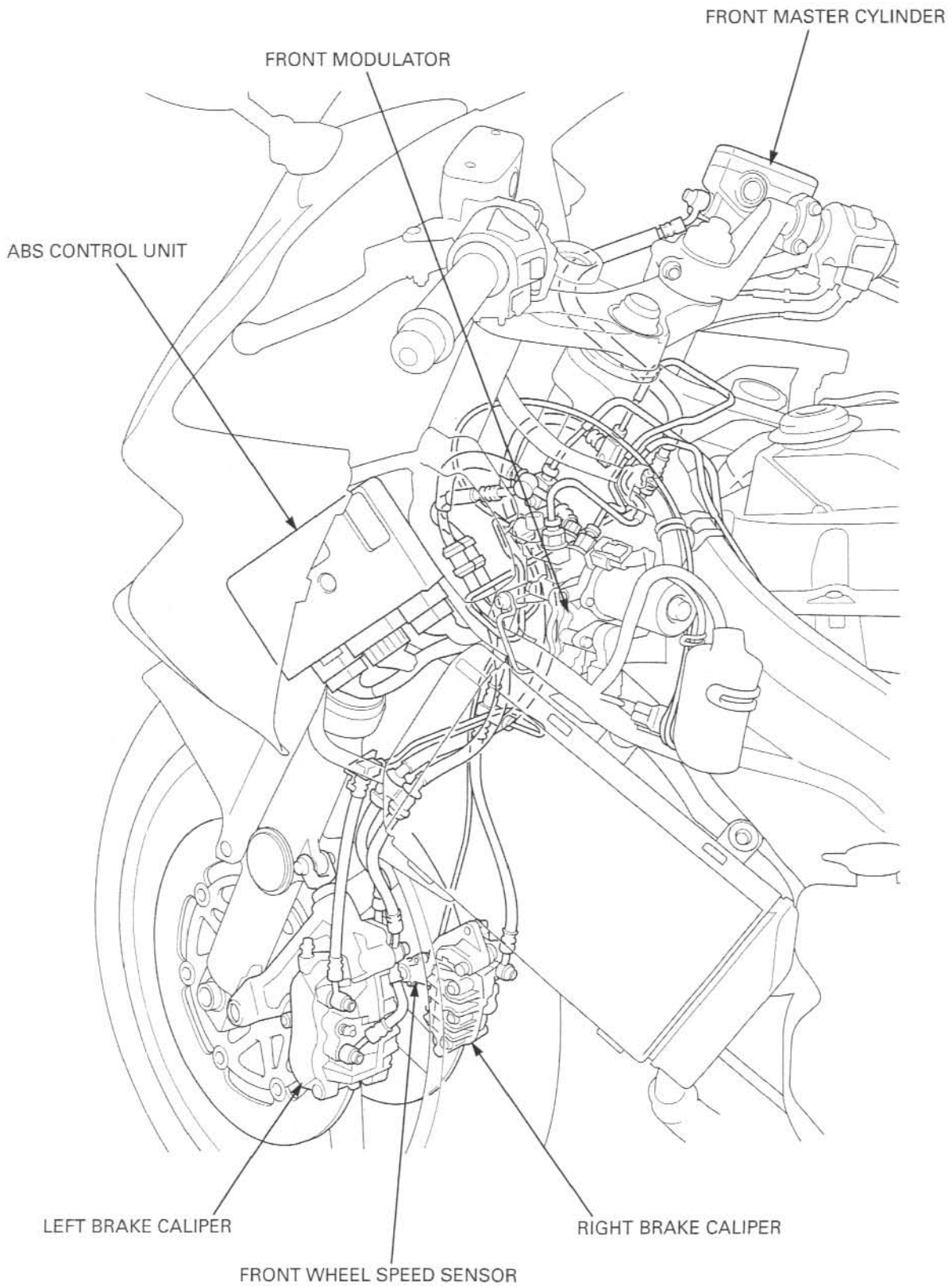
California type:

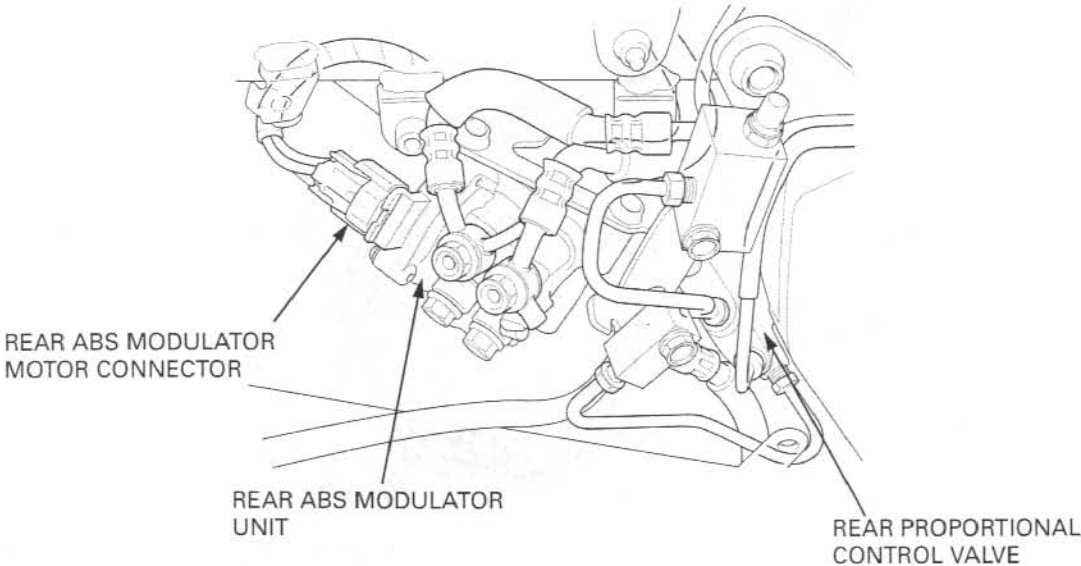
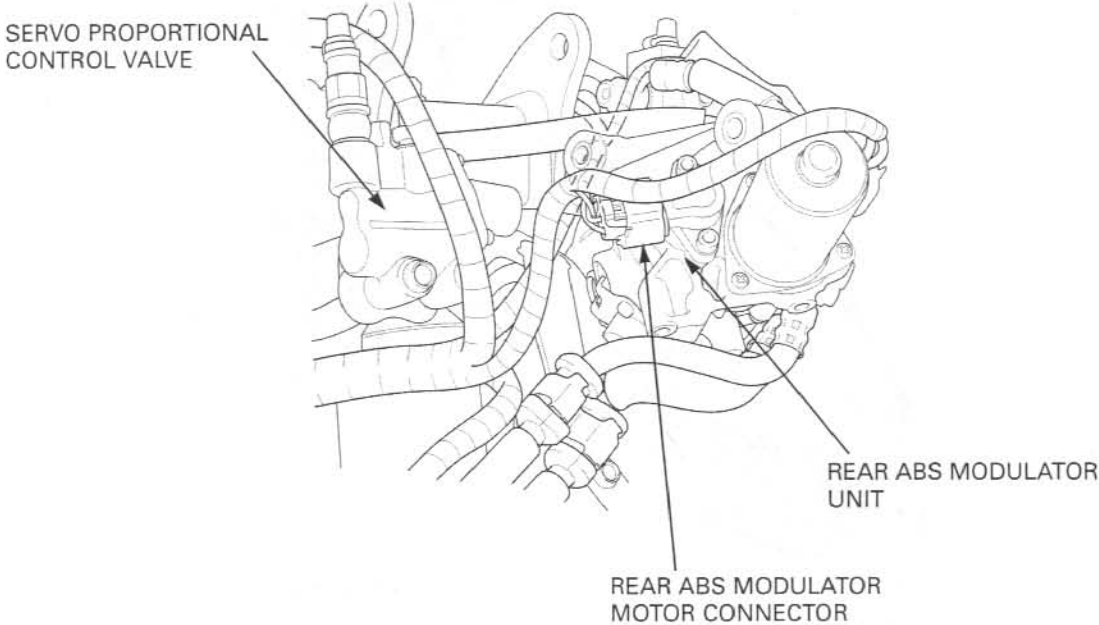


BRAKE PIPE ROUTING

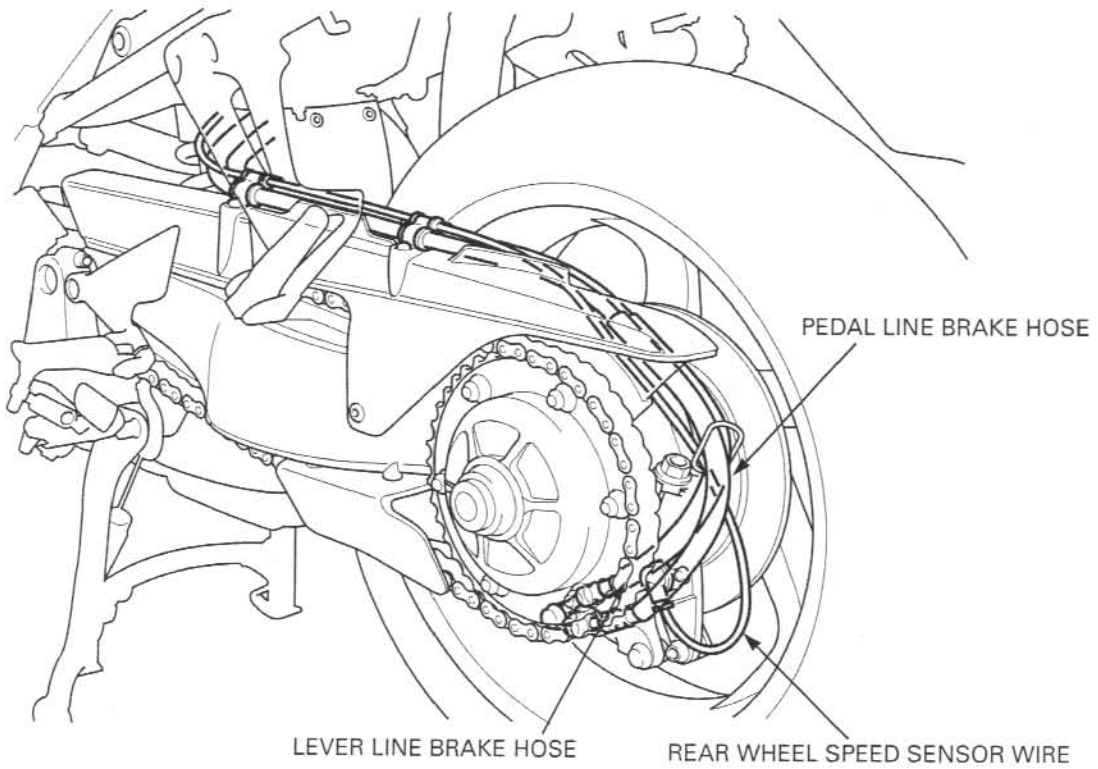
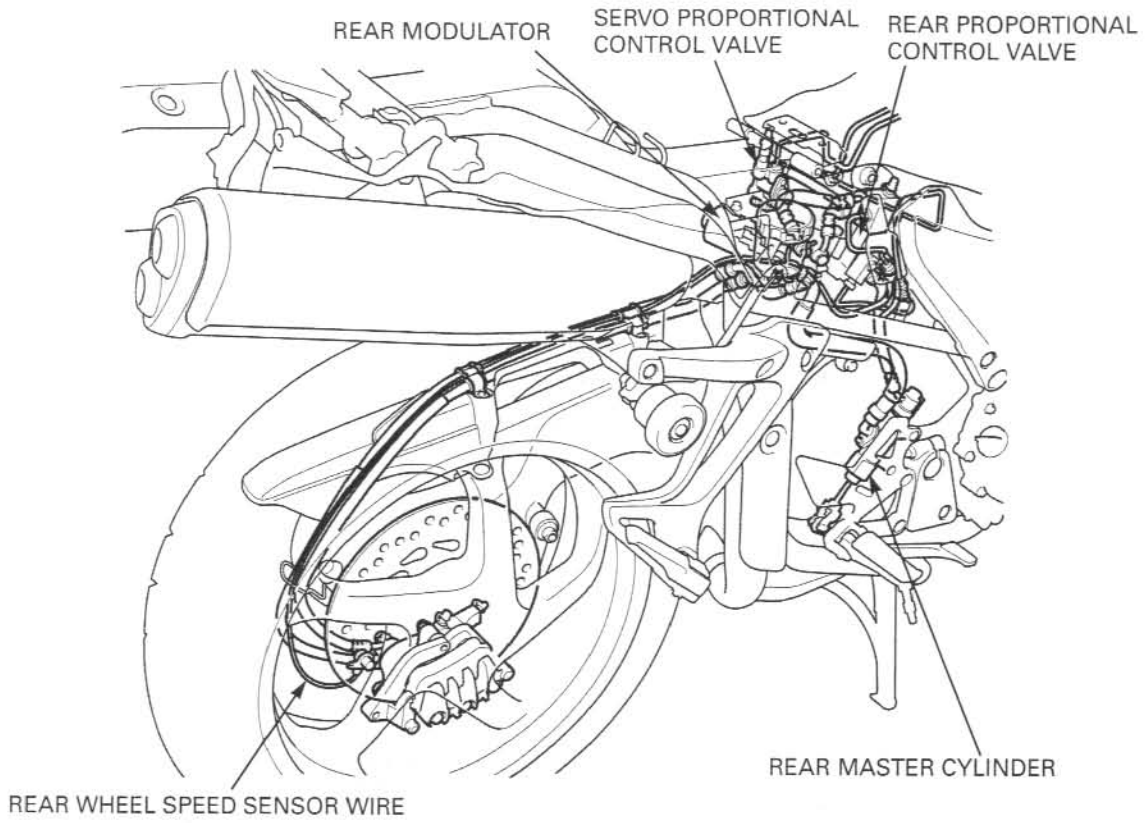
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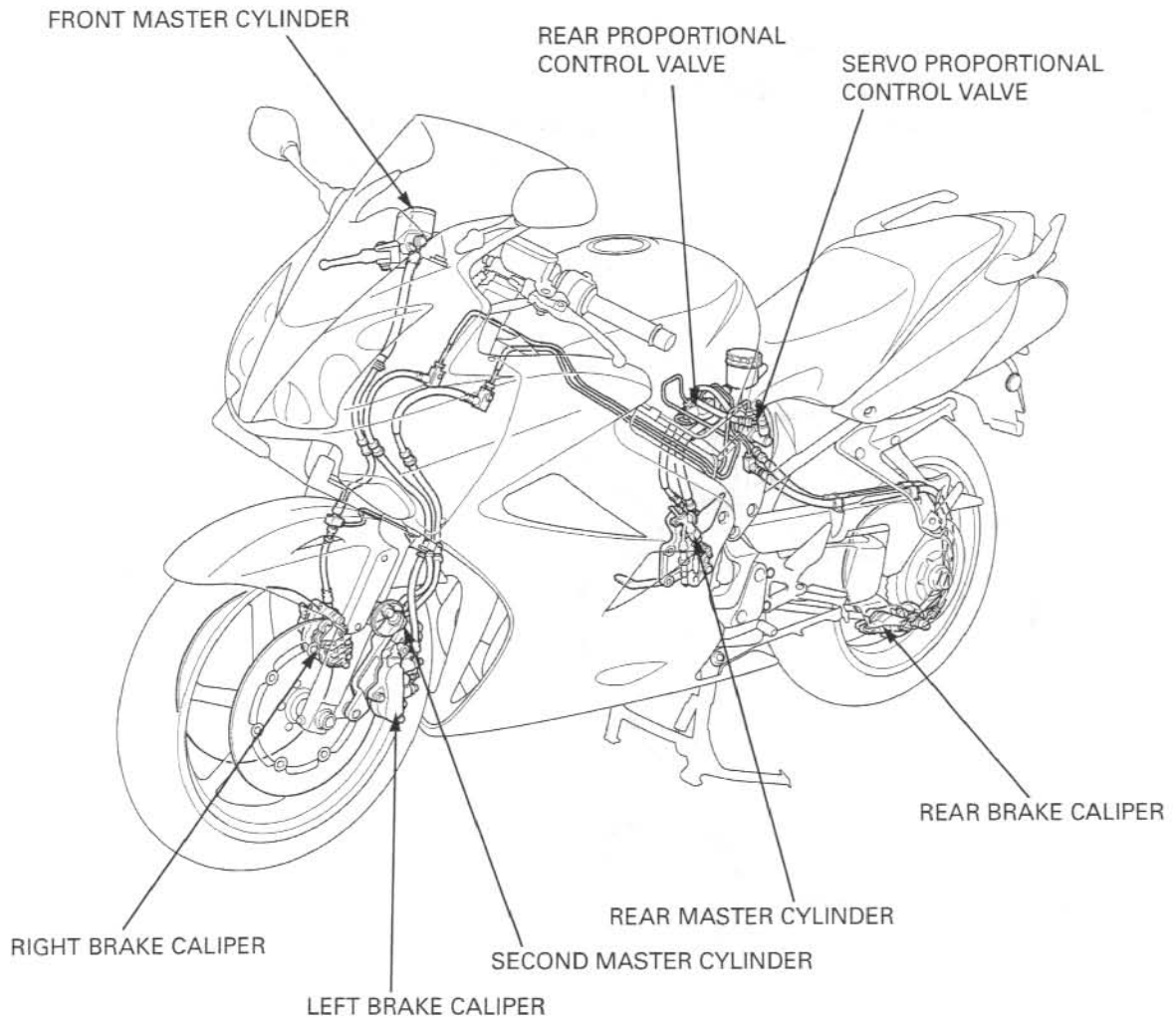




GENERAL INFORMATION



Standard type:



GENERAL INFORMATION

EMISSION CONTROL SYSTEMS

The U.S. Environmental Protection Agency, California Air Resources Board (CARB) and Transport Canada require manufacturers to certify that their motorcycle comply with applicable exhaust emissions standards during their useful life, when operated and maintained according to the instructions provided, and that motorcycles built after January 1, 1983 comply with applicable noise emission standards for one year or 3,730 miles (6,000 km) after the time of sale to the ultimate purchaser, when operated and maintained according to the instructions provided. Compliance with the terms of the Distributor's Limited Warranty for Honda Motorcycle Emission Control Systems is necessary in order to keep the emissions system warranty in effect.

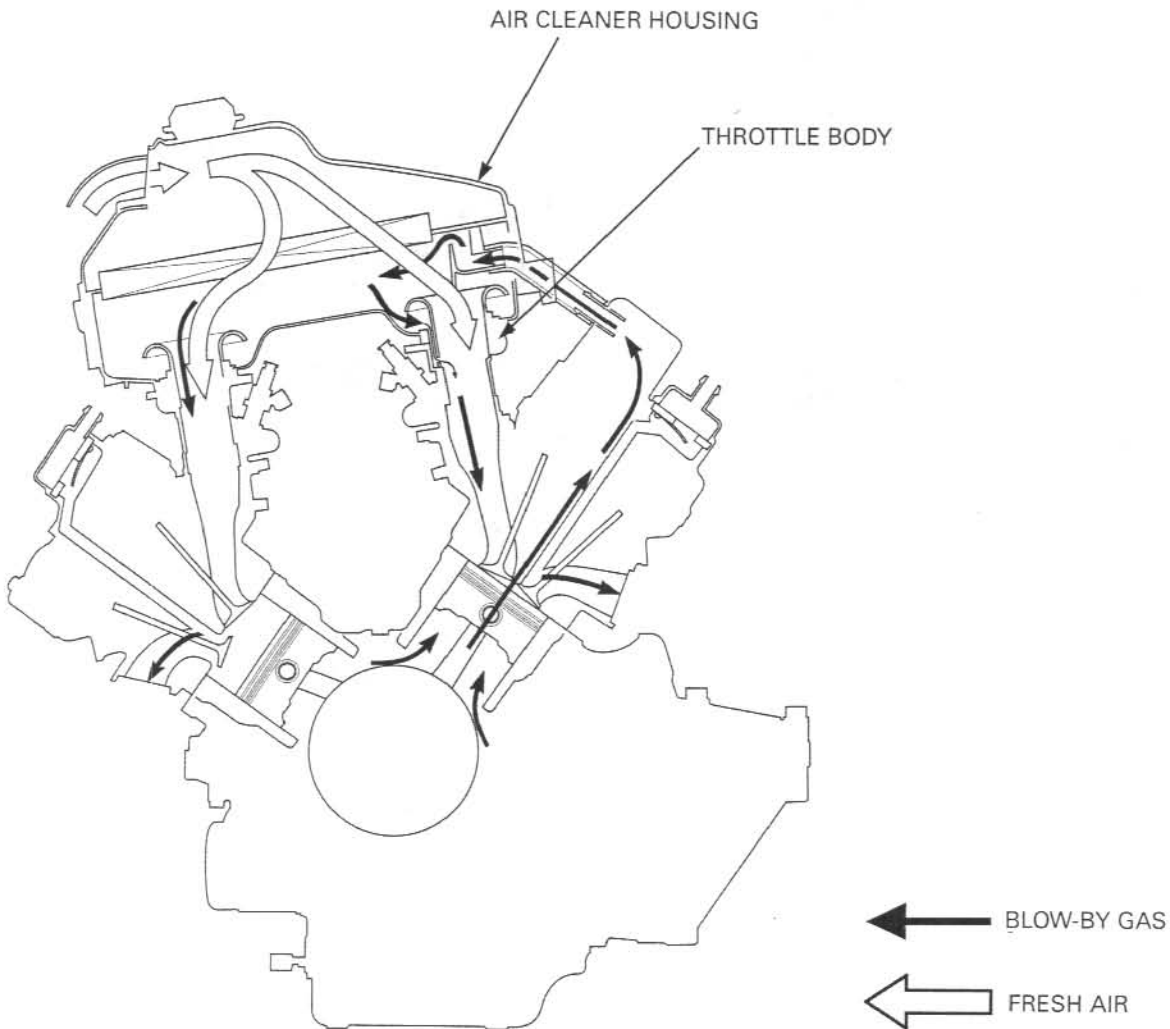
SOURCE OF EMISSIONS

The combustion process produces carbon monoxide, oxides of nitrogen and hydrocarbons. Control of hydrocarbons and oxides of nitrogen is very important because, under certain conditions, they react to form photochemical smog when subject to sunlight. Carbon monoxide does not react in the same way, but it is toxic.

Honda Motor Co., Ltd. utilizes PGM-FI, two three-way catalytic converters, a pulse secondary air injection system and a heated oxygen sensor to reduce carbon monoxide, hydrocarbons, and oxides of nitrogen.

CRANKCASE EMISSION CONTROL SYSTEM

The engine is equipped with a closed crankcase system to prevent discharging crankcase emissions into the atmosphere. Blow-by gas is returned to the combustion chamber through the air cleaner and throttle body.



EXHAUST EMISSION CONTROL SYSTEM (SECONDARY AIR SUPPLY SYSTEM)

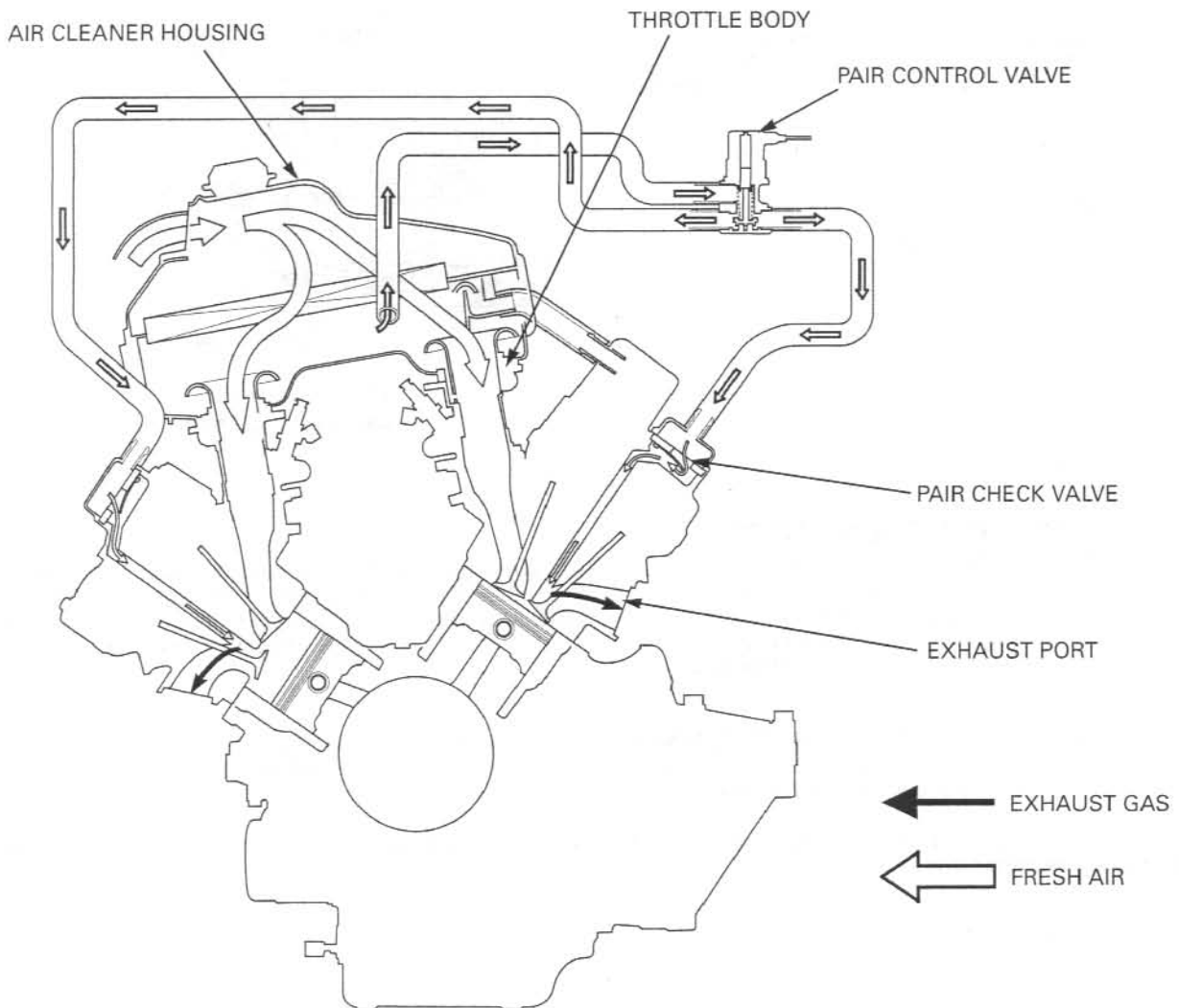
The exhaust emission control system uses a lean fuel injection setting, and no adjustments should be made except idle speed adjustment with the throttle stop screw. The exhaust emission control system is separate from the crank case emission control system.

The exhaust emission control system includes of a secondary air supply system which introduces filtered air into the exhaust gases in the exhaust port. Fresh air is drawn into the exhaust port by the function of the PAIR (Pulse Secondary Air Injection) control valve.

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

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

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



This motorcycle is also equipped with two three-way catalytic converters, and two heated oxygen sensors.

The three-way catalytic converters are in the exhaust system. Through chemical reactions, they convert HC, CO, and NOx in the engine's exhaust to carbon dioxide (CO₂), dinitrogen (N₂), and water vapor.

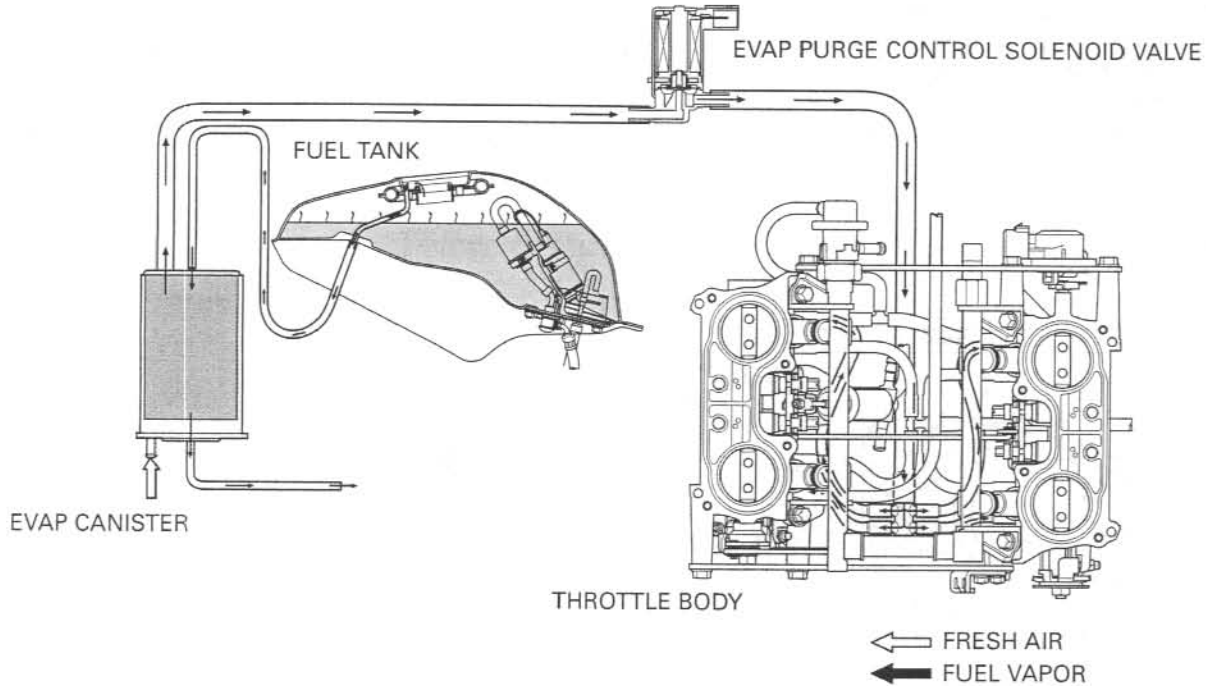
No adjustment to these systems should be made although periodic inspection of the components is recommended.

GENERAL INFORMATION

EVAPORATIVE EMISSION CONTROL SYSTEM (CALIFORNIA TYPE ONLY)

This model complies with California Air Resources Board evaporative emission requirements.

Fuel vapor from the fuel tank is routed into the evaporative emission (EVAP) canister where it is absorbed and stored while the engine is stopped. When the engine is running and the evaporative emission (EVAP) purge control solenoid valve is open, fuel vapor in the EVAP canister is drawn into the engine through the throttle body.



NOISE EMISSION CONTROL SYSTEM

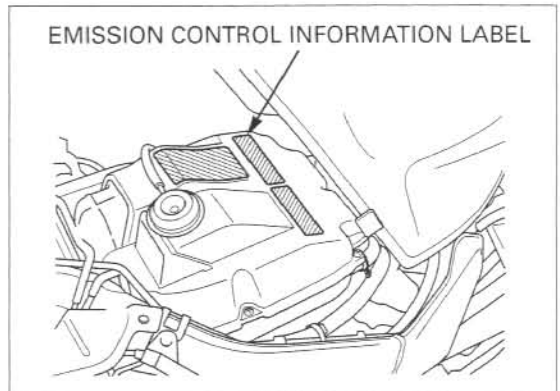
TAMPERING WITH THE NOISE CONTROL SYSTEM IS PROHIBITED: Local law prohibits the following acts or the causing thereof: (1) The removal or rendering inoperative by any person, other than for purposes of maintenance, repair or replacement, of any device or element of design incorporated into any new vehicle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

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

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

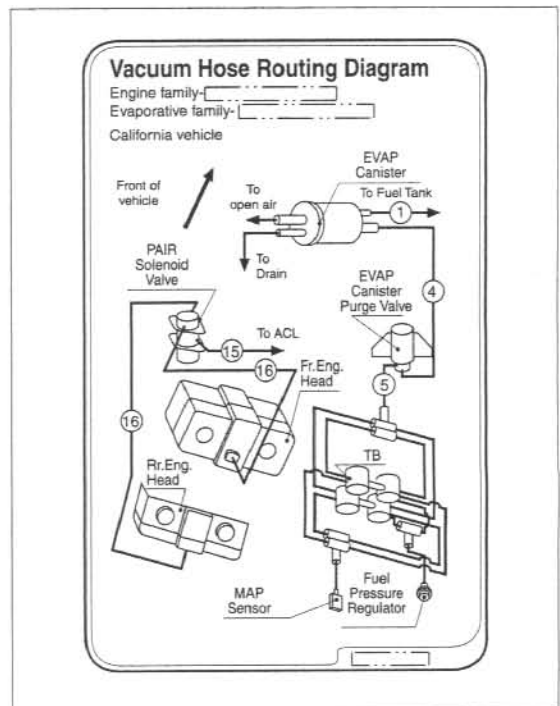
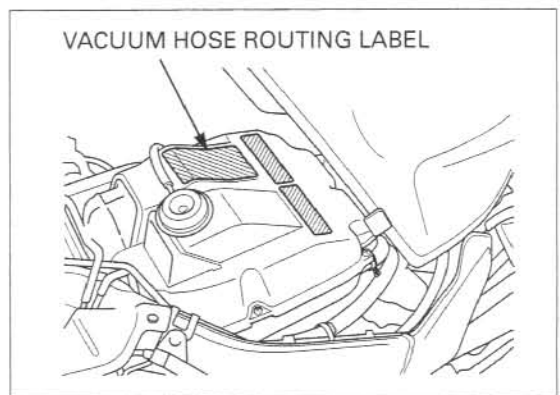
EMISSION CONTROL INFORMATION LABELS (U.S.A. ONLY)

An Emission Control Information Label is located on the air cleaner housing as shown. The fuel tank must be opened to read it. Refer to page 3-5 for fuel tank opening.



VACUUM HOSE ROUTING DIAGRAM LABEL (CALIFORNIA TYPE ONLY)

The vacuum Hose Routing Diagram Label is on the air cleaner housing cover as shown. The fuel tank must be opened to read it. Refer to page 3-5 for fuel tank opening.

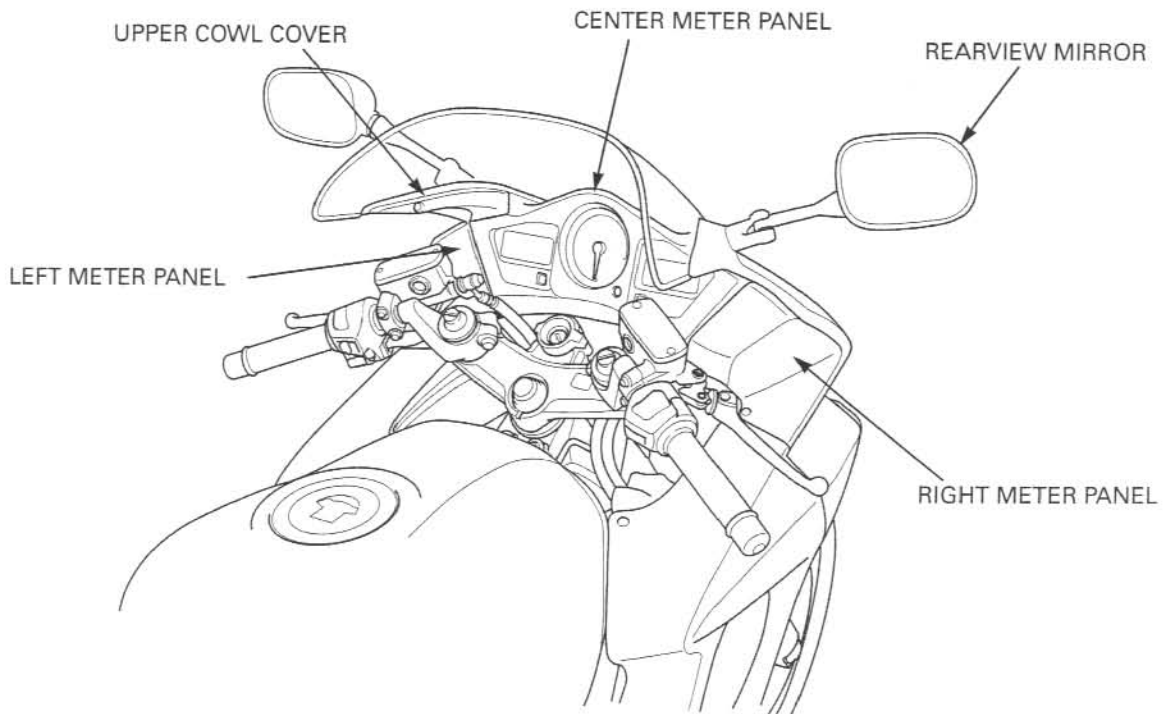
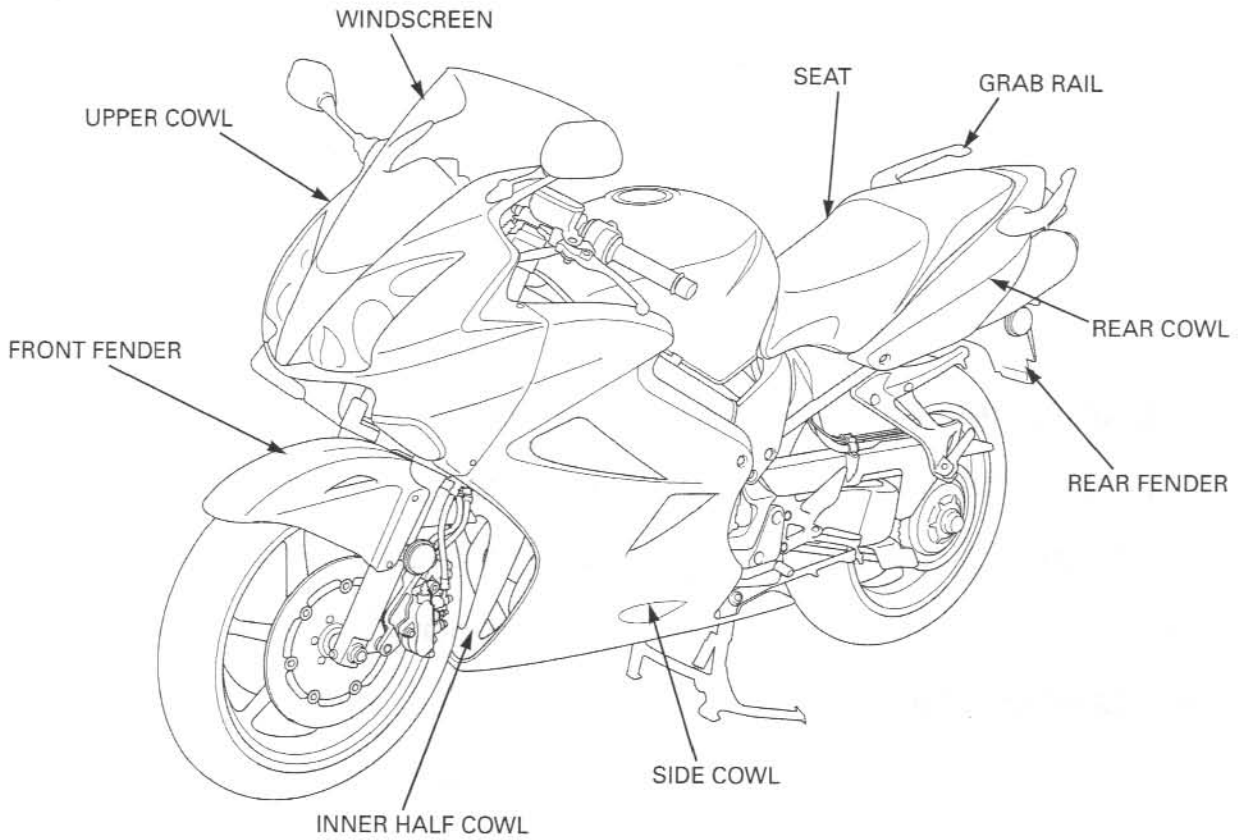


MEMO

2. FRAME/BODY PANELS/EXHAUST SYSTEM

BODY PANEL LOCATIONS	2-2	SIDE COWL	2-8
SERVICE INFORMATION	2-3	UPPER COWL	2-12
TROUBLESHOOTING	2-3	FRONT FENDER.....	2-17
TRIM CLIPS	2-4	REAR FENDER	2-17
SEAT STOPPER INSTALLATION	2-4	SEAT RAIL.....	2-23
SEAT.....	2-5	MUFFLER/EXHAUST PIPE.....	2-28
REAR COWL.....	2-5		

BODY PANEL LOCATIONS



SERVICE INFORMATION

GENERAL

- Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.
- This section covers removal and installation of the body panels and exhaust system.
- Serious burns may result if the exhaust system is not allowed to cool before components are removed or serviced.
- Always replace the exhaust pipe gaskets after removing the exhaust pipe from the engine.
- When installing the exhaust system, loosely install all of the exhaust pipe fasteners. Always tighten the exhaust clamps first, then tighten the mounting fasteners. If you tighten the mounting fasteners first, the exhaust pipe may not seat properly.
- Always inspect the exhaust system for leaks after installation.

TORQUE VALUES

Upper cowl pan screw	2 N·m (0.15 kgf·m, 1.1 lbf·ft)
Side cowl pan screw	2 N·m (0.15 kgf·m, 1.1 lbf·ft)
Inner half cowl pan screw	2 N·m (0.15 kgf·m, 1.1 lbf·ft)
Rear cowl pan screw	2 N·m (0.15 kgf·m, 1.1 lbf·ft)
Grab rail socket bolt	22 N·m (2.2 kgf·m, 16 lbf·ft)
Upper cowl stay mounting nut, 10 mm	64 N·m (6.5 kgf·m, 47 lbf·ft)
Upper cowl stay mounting nut, 8 mm	47 N·m (4.8 kgf·m, 35 lbf·ft)
Seat rail lower mounting nut	44 N·m (4.5 kgf·m, 33 lbf·ft)
Seat rail upper mounting flange nut	54 N·m (5.5 kgf·m, 40 lbf·ft)
Exhaust pipe joint special nut	12 N·m (1.2 kgf·m, 9 lbf·ft)
Exhaust pipe flange nut	21 N·m (2.1 kgf·m, 15 lbf·ft)
Pillion footpeg bracket socket bolt	32 N·m (3.3 kgf·m, 24 lbf·ft)

TROUBLESHOOTING

Excessive exhaust noise

- Broken exhaust system
- Exhaust gas leak

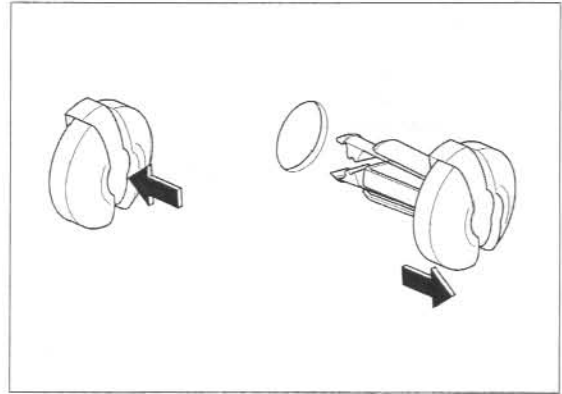
Poor performance

- Deformed exhaust system
- Exhaust gas leak
- Clogged muffler

TRIM CLIPS

REMOVAL

Push the center of the trim clip pin.
Remove the trim clip.

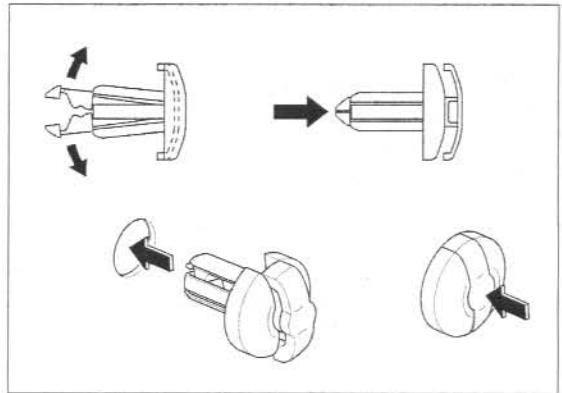


INSTALLATION

Raise the center pin by pushing the retaining tabs back.

Install the trim clip.

Push the center pin until the pin flush with the outer casing.

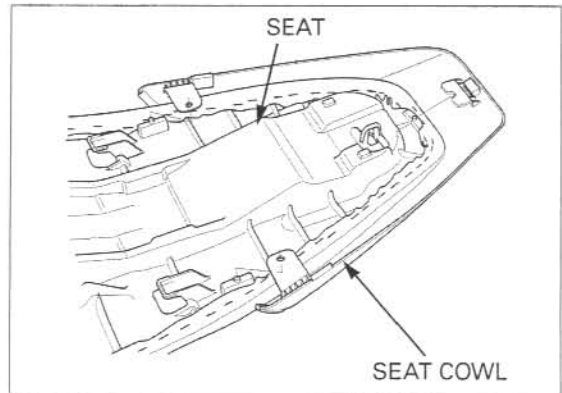


SEAT COWL INSTALLATION

Remove the following:

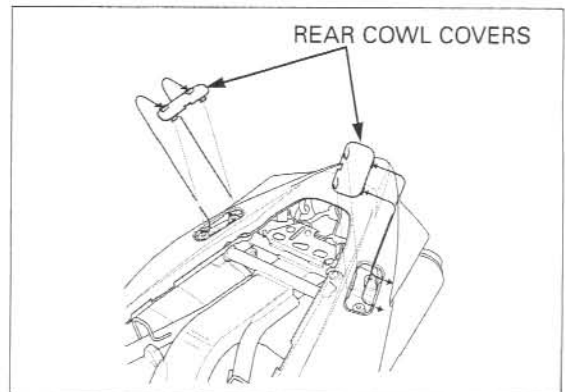
- Seat (page 2-5)
- Grab rails (page 2-5)

Install the seat cowl onto the seat as shown.



Install the rear cowl covers onto the grab rail mounting holes.

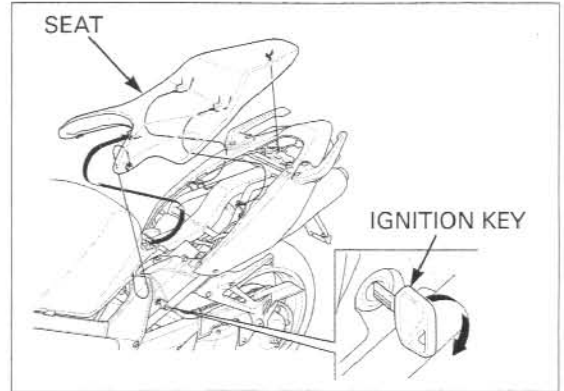
Install the seat (page 2-5).



SEAT

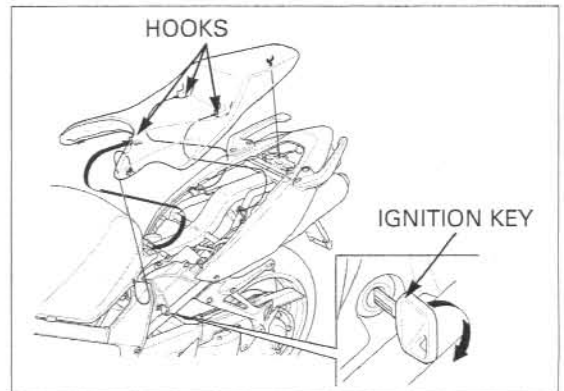
REMOVAL

Unhook the seat with the ignition key.
Pull the seat back and remove it.



INSTALLATION

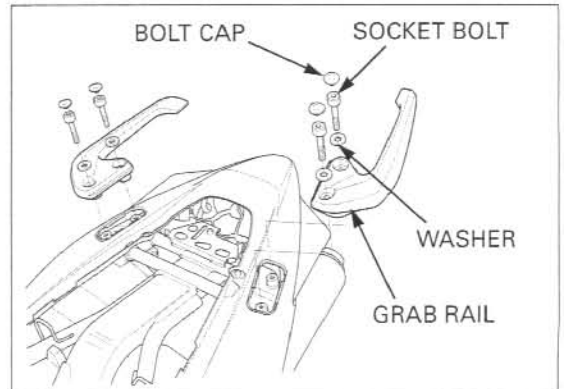
Install the seat while aligning its hooks with the retainers on the seat rail.
Push the seat forward, then down to lock it.



REAR COWL

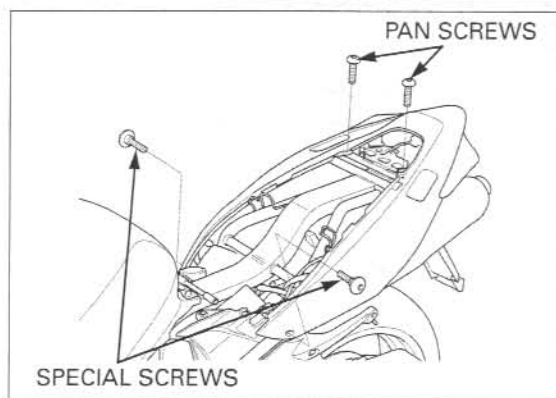
REMOVAL

Remove the seat (page 2-5).
Remove the four bolt caps, socket bolts and washers.
Remove the grab rails.

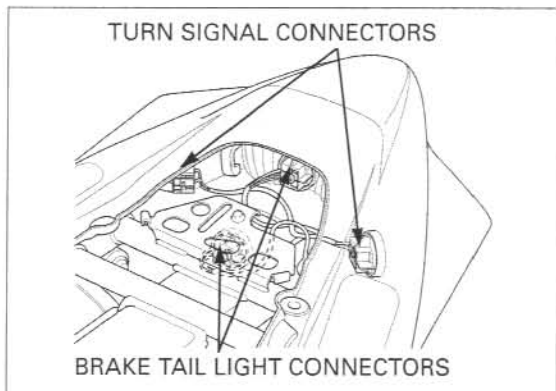


FRAME/BODY PANELS/EXHAUST SYSTEM

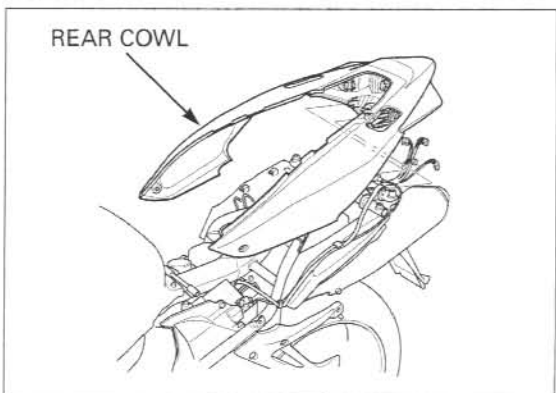
Remove the two special 6 mm screws and two 5 mm pan screws.



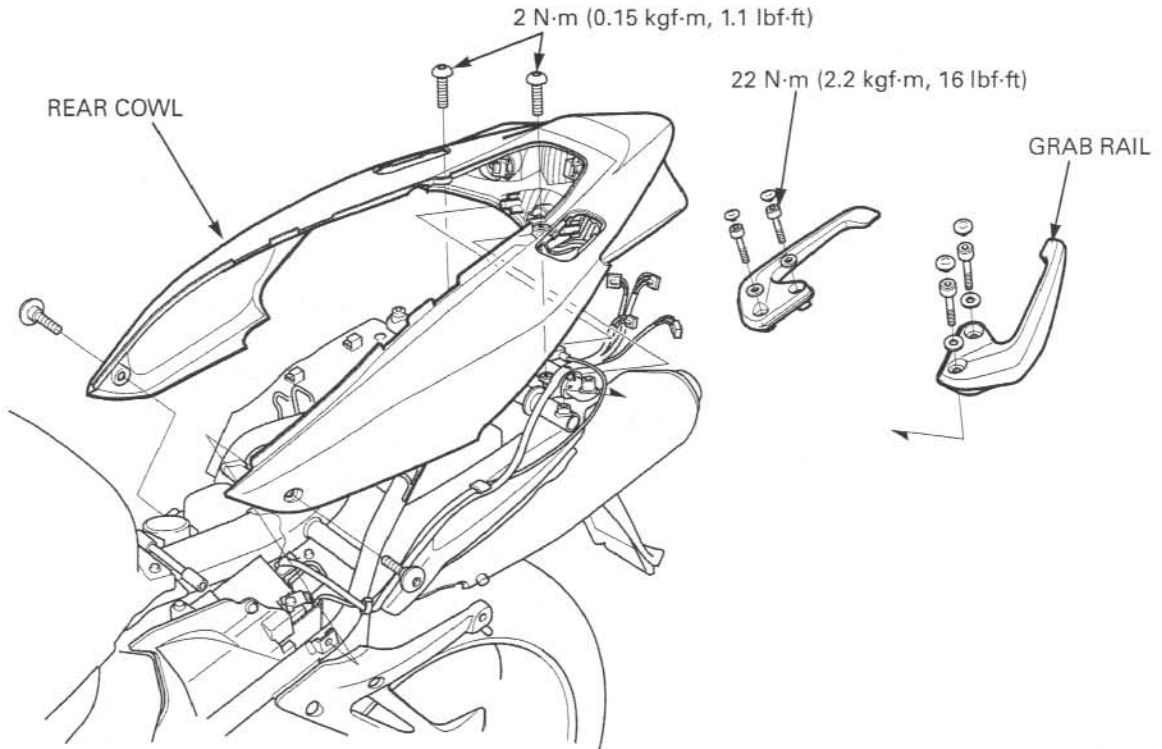
Disconnect the rear brake/tail light connectors and turn signal connectors.



Carefully pulling the both sides of the rear cowl, then remove it from the seat rail.

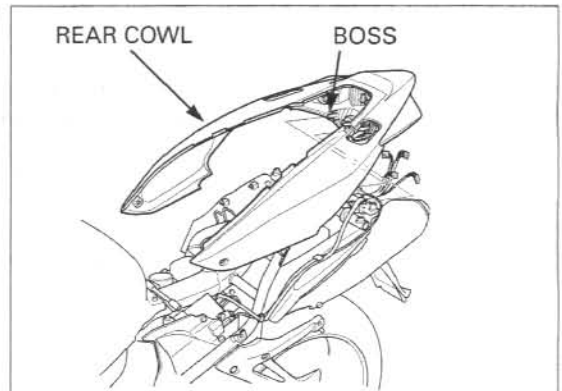


INSTALLATION

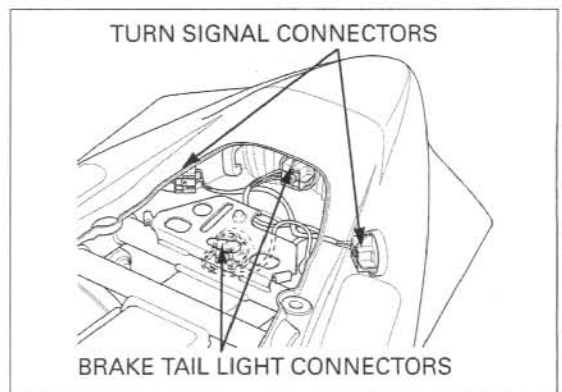


Make sure that the mating surfaces of the cowl bottom are seated onto the rear fender properly before tightening the fasteners.

Install the rear cowl while aligning its bosses with the grommets on the rear fender.



Connect the turn signal connectors and brake/tail light connectors.

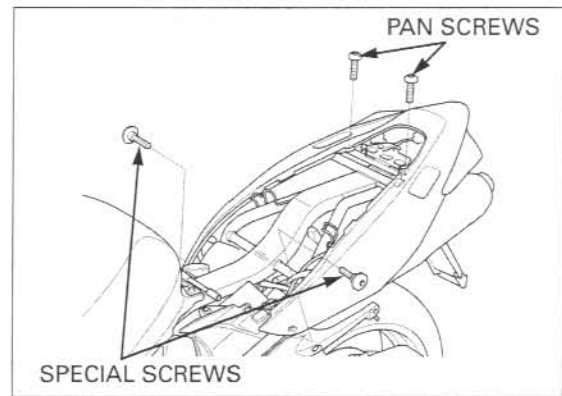


FRAME/BODY PANELS/EXHAUST SYSTEM

Install and tighten the rear cowl special screws.

Install and tighten the rear cowl pan screws to the specified torque.

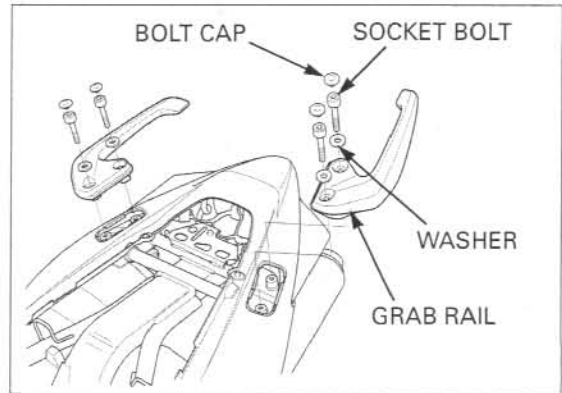
TORQUE: 2 N·m (0.15 kgf·m, 1.1 lbf·ft)



Install the grab rails, washers and socket bolts, then tighten the socket bolts to the specified torque.

TORQUE: 22 N·m (2.2 kgf·m, 16 lbf·ft)

Install the socket bolt caps.



SIDE COWL

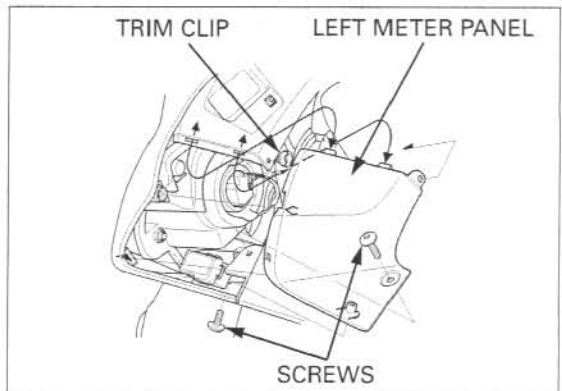
REMOVAL

The right and left side cowls are removed individually.

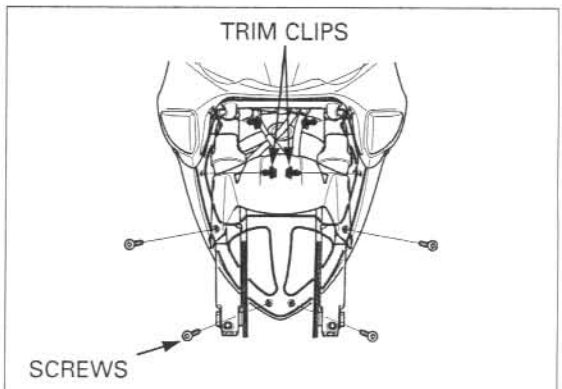
Remove the pan screws and trim clip from the left meter panel.

Carefully pull back the left meter panel and release the pin from the upper cowl grommet.

Release the tabs from the center meter panel, then remove the left meter panel.

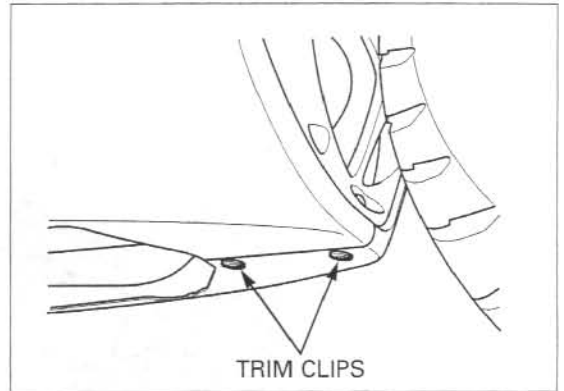


Remove the trim clips and pan screws between the right and left side cowls and inner half cowl.

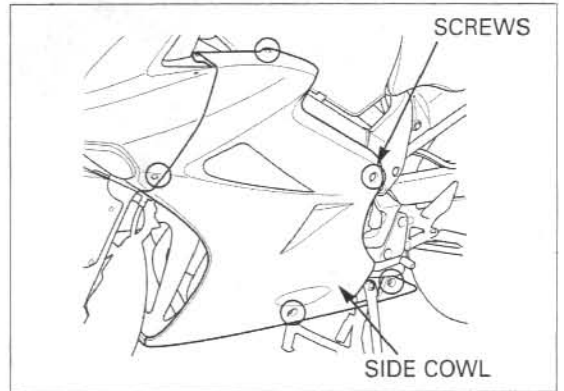


FRAME/BODY PANELS/EXHAUST SYSTEM

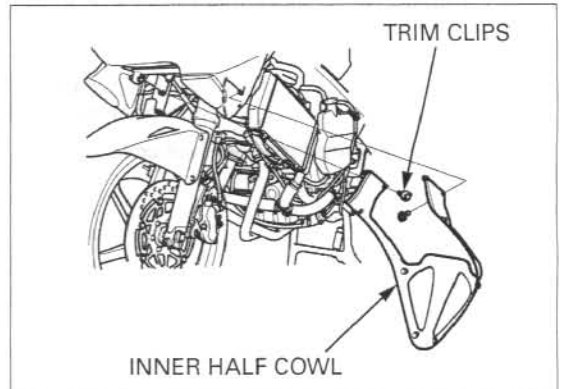
Remove the trim clips between the right and left side cowl.



Remove the pan screws and special screws, then remove the side cowl.

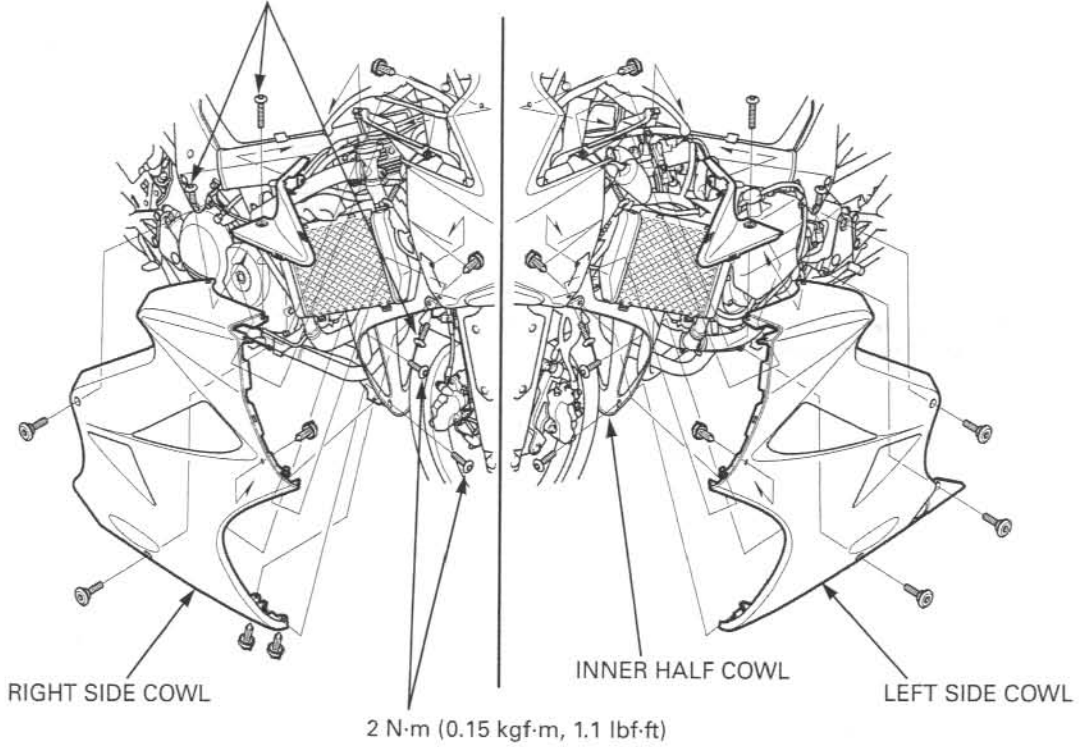


Remove the two trim clips and inner half cowl.



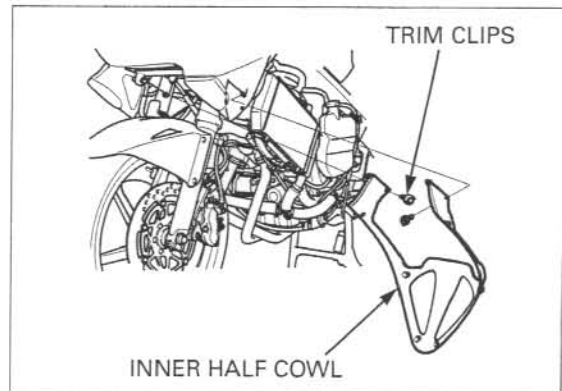
INSTALLATION

2 N·m (0.15 kgf·m, 1.1 lbf·ft)



Install the inner half cowl aligning its top ends with the inner panel and upper cowl as shown.

Secure the inner half cowl with the two trim clips.

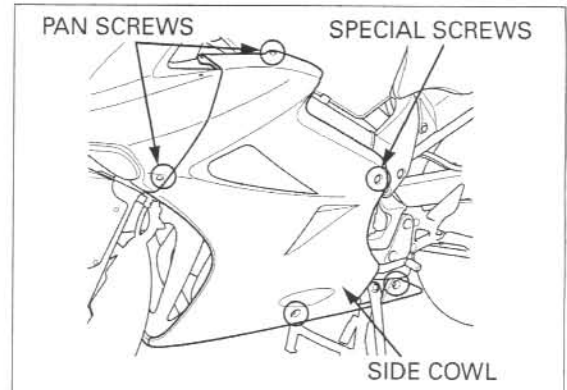


Install the right and left side cowl.

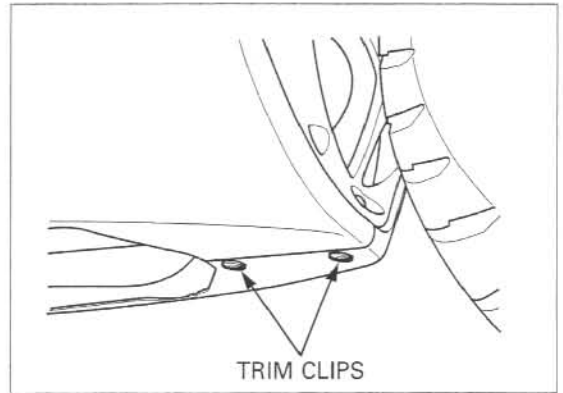
Install the special screws and pan screws.

TORQUE:

Pan screw: 2 N·m (0.15 kgf·m, 1.1 lbf·ft)

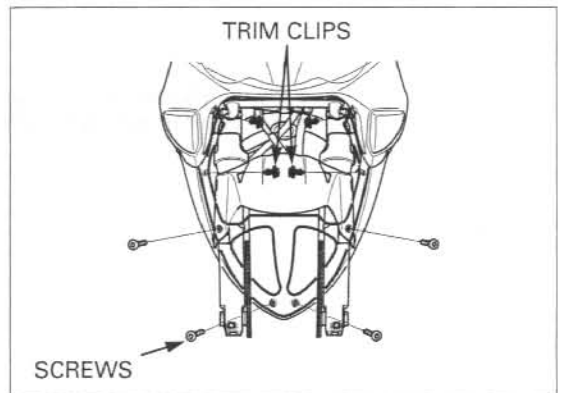


Secure the bottom of right and left side cowl with two trim clips.

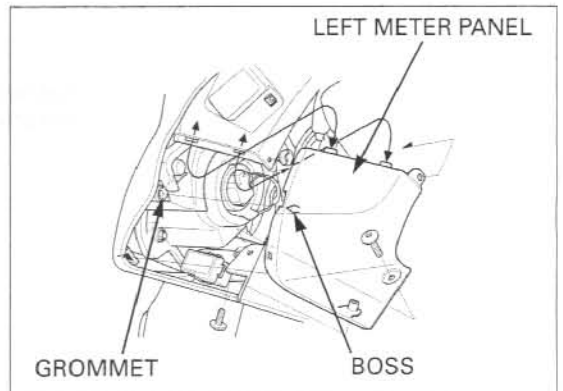


Secure the both side cowls and inner half cowl with trim clips and pan screws, then tighten the pan screws to the specified torque.

TORQUE: 2 N·m (0.15 kgf·m, 1.1 lbf·ft)



Install the left meter panel aligning its tabs with the slots in the center meter panel. While aligning the pin behind the left meter panel with the grommet on the upper cowl, install the left meter panel.

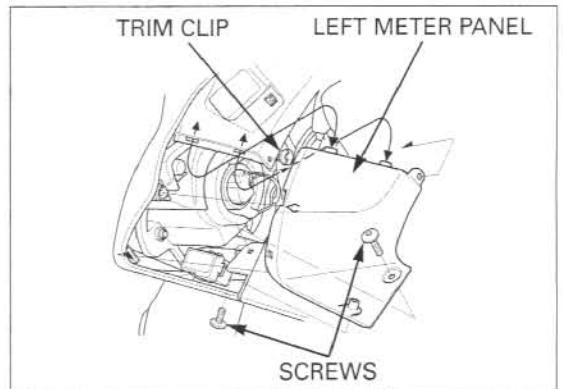


Install the pan screws and trim clips.

Tighten the side cowl screws and both meter panel screws.

Tighten the pan screws to the specified torque.

TORQUE: 2 N·m (0.15 kgf·m, 1.1 lbf·ft)

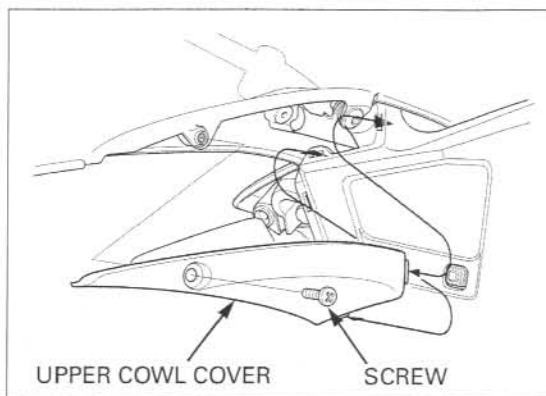


UPPER COWL

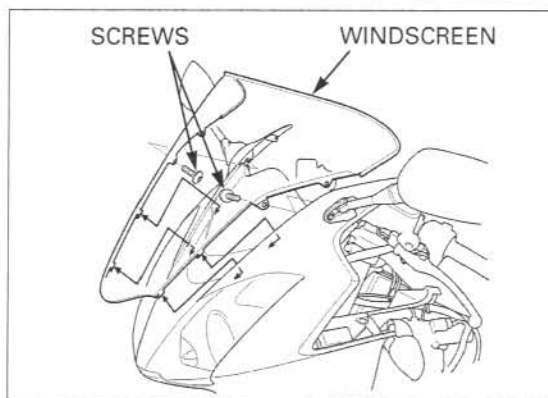
REMOVAL

Remove the lower cowl and inner half cowl (page 2-8).

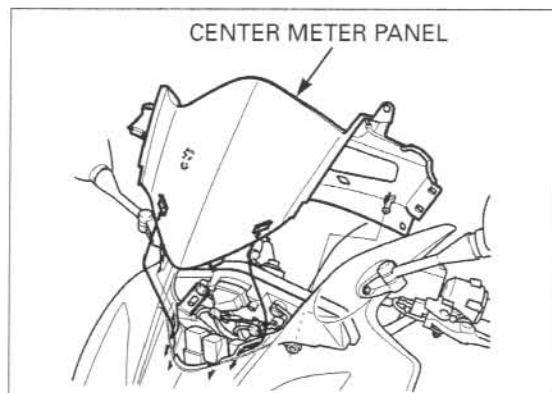
Remove the screw and both upper cowl covers.



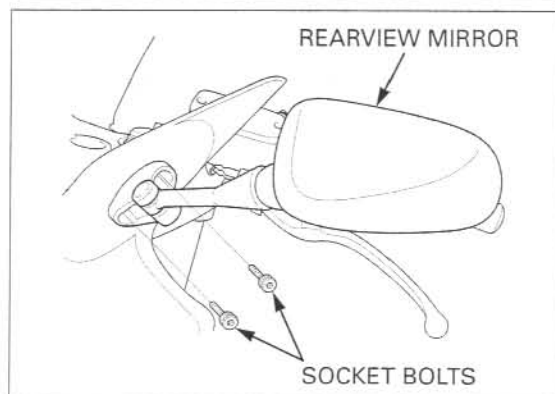
Remove the windscreen mounting screws. Pull the windscreen up and remove it from the upper cowl.



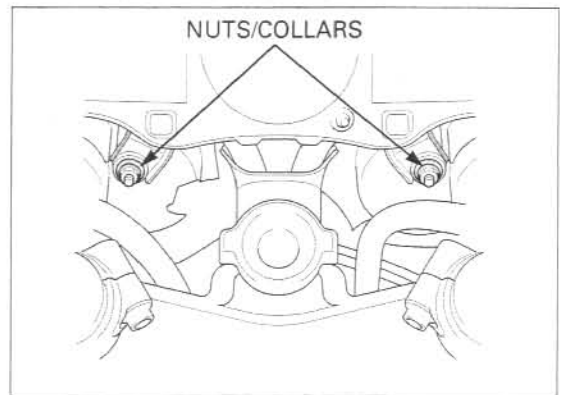
Remove the center meter panel while releasing the panel bosses from the combination meter grommets.



Remove the socket bolts and rearview mirror.



Remove the upper cowl mounting nuts and collars.

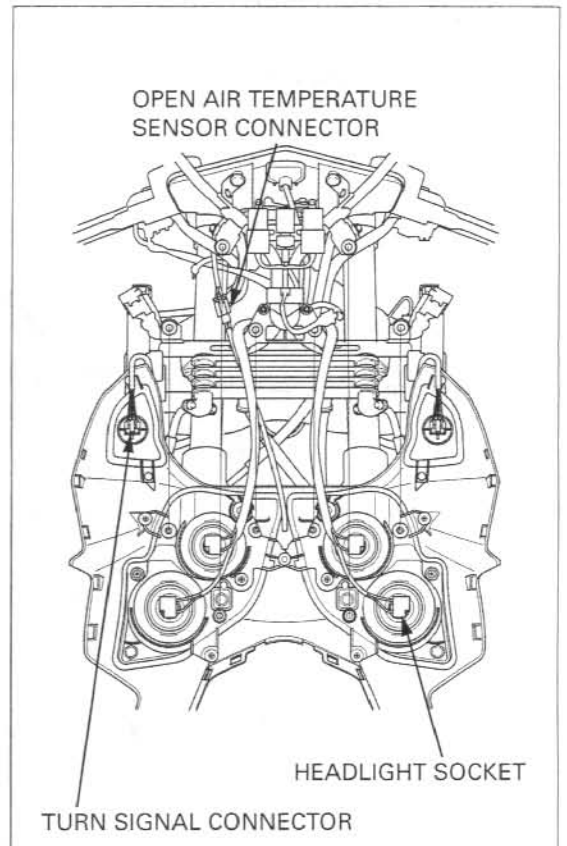


Be careful not to scratch the upper cowl and front fender.

Release the upper cowl off the rearview mirror bolt hole studs and pull the upper cowl forward.

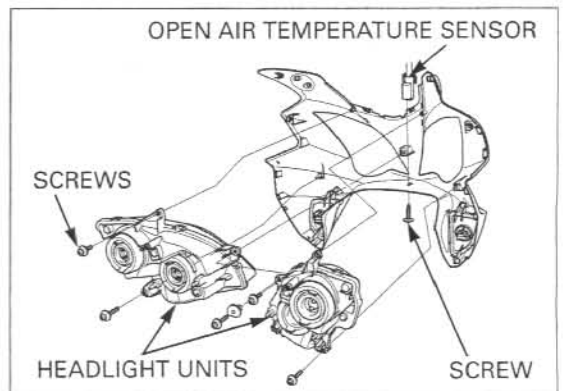
Disconnect the open air temperature sensor connector, headlight sockets and turn signal connectors.

Remove the upper cowl assembly.



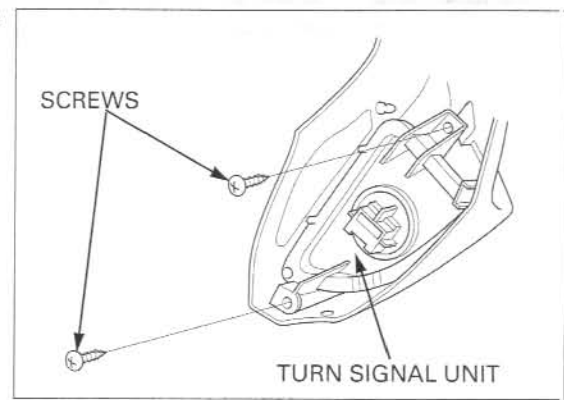
Remove the screws and headlight units.

Remove the screw and open air temperature sensor from the upper cowl.

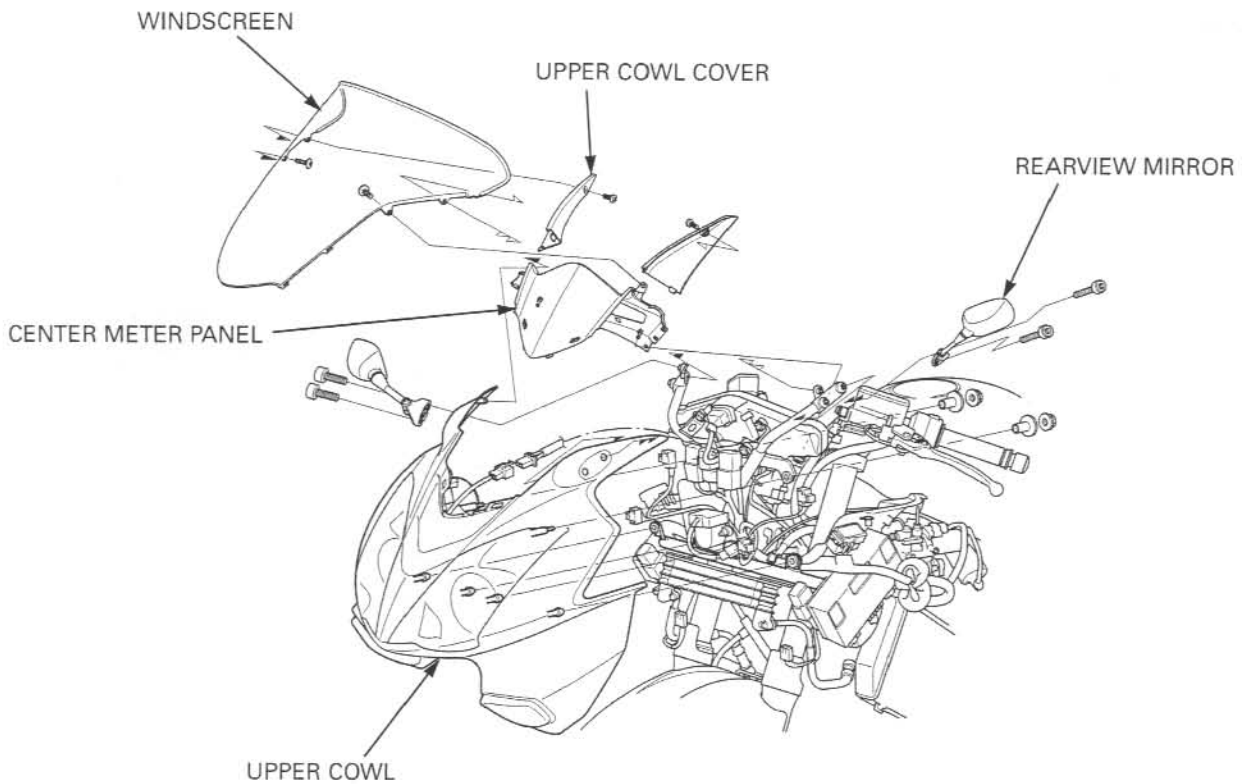


FRAME/BODY PANELS/EXHAUST SYSTEM

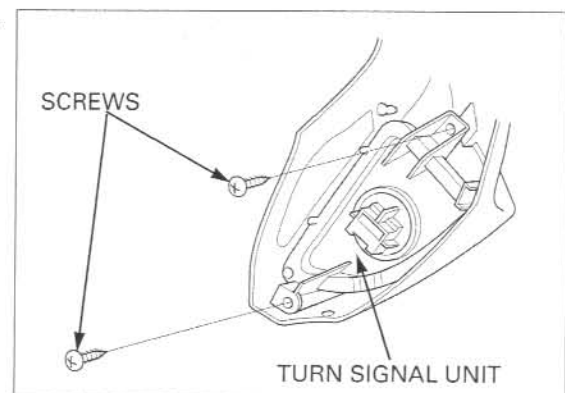
Remove the screws and turn signal units from the upper cowl.



INSTALLATION



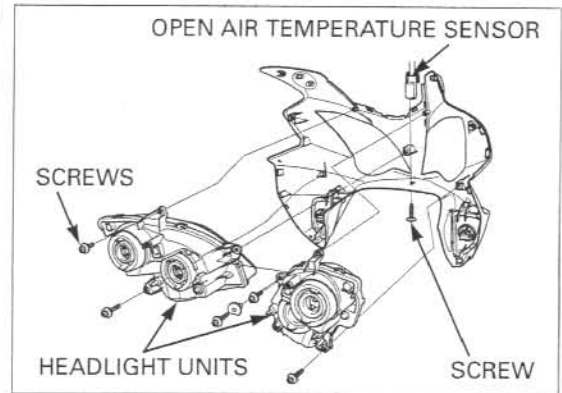
Install the turn signal units into the upper cowl, tighten the screws securely.



FRAME/BODY PANELS/EXHAUST SYSTEM

Install the open air temperature sensor into the upper cowl and tighten the screw securely.

Install the headlight units and tighten the screw securely.

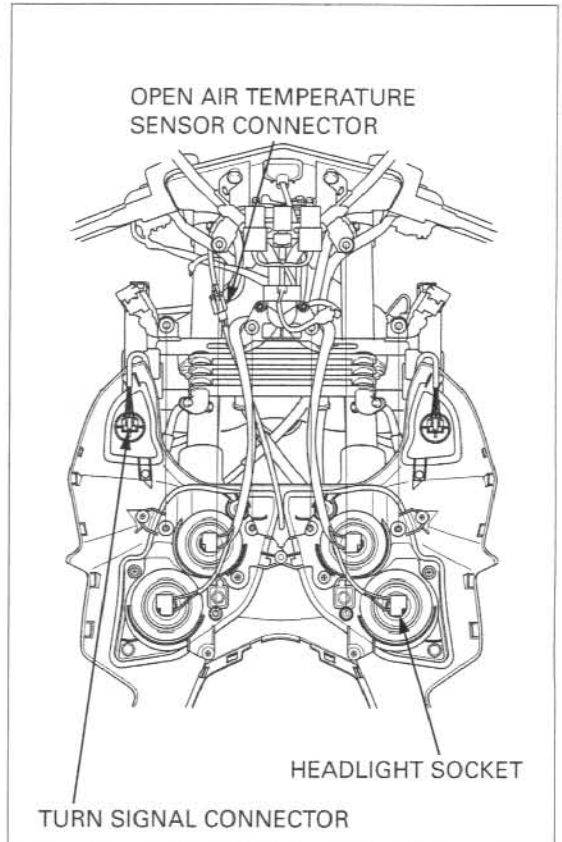


Place the upper cowl onto the front fender.

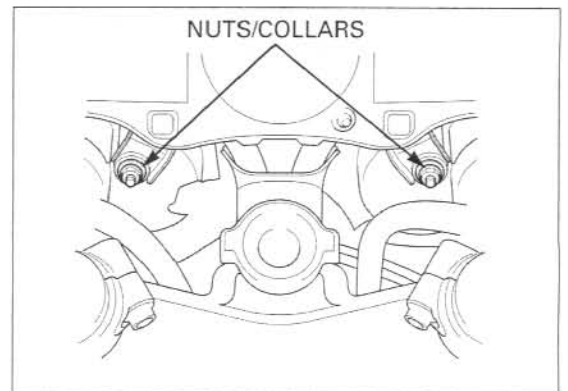
Connect the turn signal connectors, headlight socket and open air temperature sensor connector.

Install the upper cowl onto the upper cowl stay while aligning the headlight unit bosses with the upper cowl stay grommets.

Set the upper cowl onto the rearview mirror bolt hole studs.

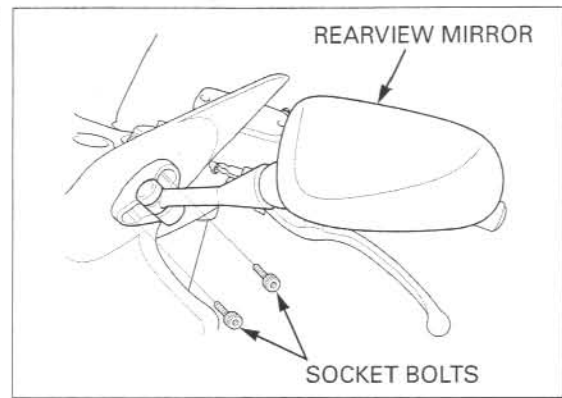


Install the upper cowl mounting collars and nuts, tighten the nuts securely.

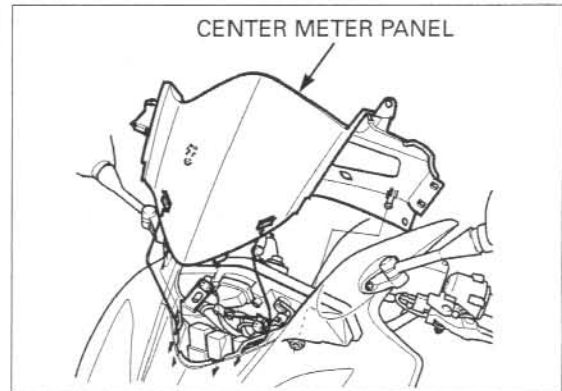


FRAME/BODY PANELS/EXHAUST SYSTEM

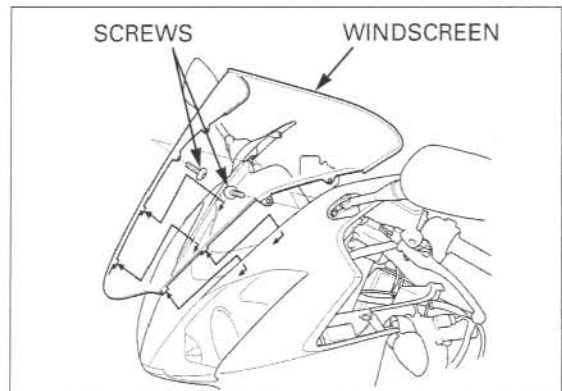
Install the rearview mirror and tighten the socket bolts securely.



Install the center meter panel onto the combination meter and upper cowl while aligning the panel bosses with the combination meter grommets.



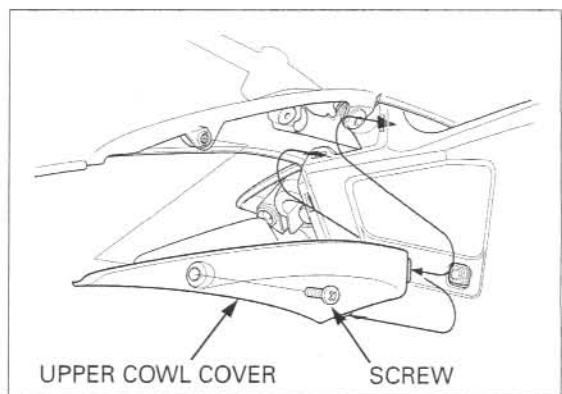
Install the windscreen aligning its tabs with the upper cowl slits. Tighten the windscreen mounting screws.



Install the upper cowl covers aligning their tabs with the grooves in the upper cowl.

Install and tighten the screw securely.

Install the inner half cowl and side cowl (page 2-10).

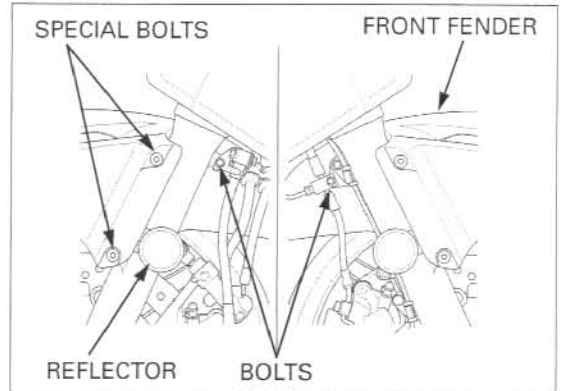


FRONT FENDER

REMOVAL

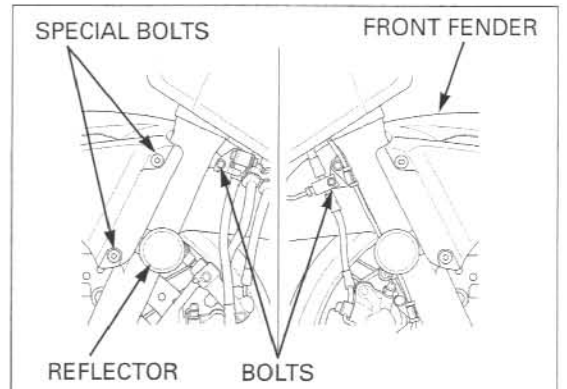
Remove the front fender special bolts, flange bolts and reflectors.

Remove the front fender forward.



INSTALLATION

Installation the front fender in the reverse order of removal.

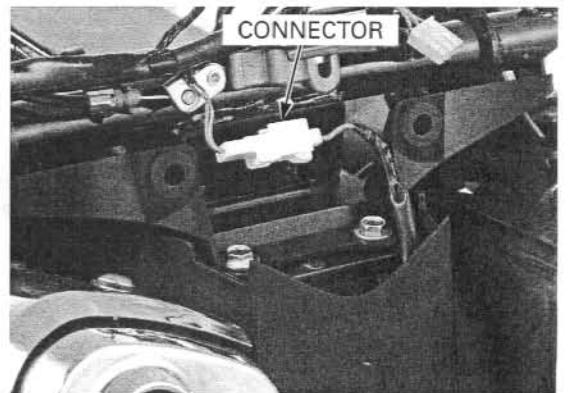


REAR FENDER

REMOVAL

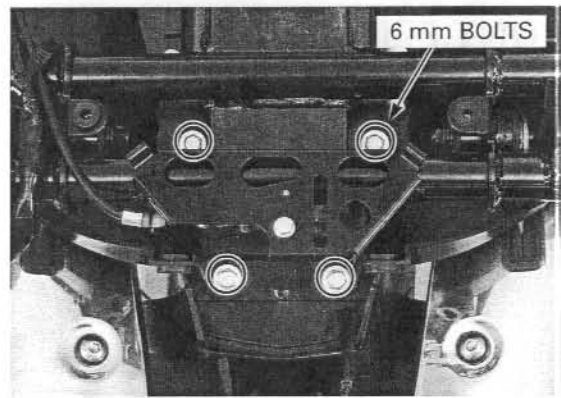
Remove the rear cowl (page 2-5).

Disconnect the license light connector.

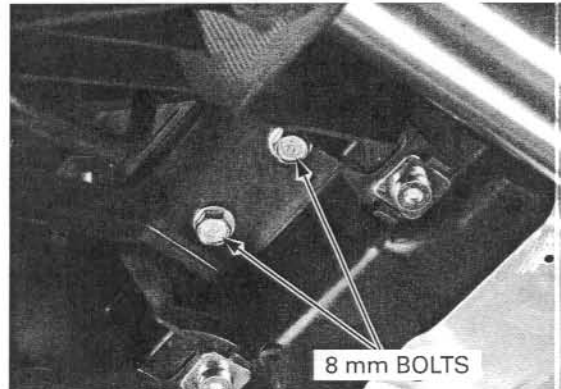


FRAME/BODY PANELS/EXHAUST SYSTEM

Remove the rear fender A mounting 6 mm bolts.



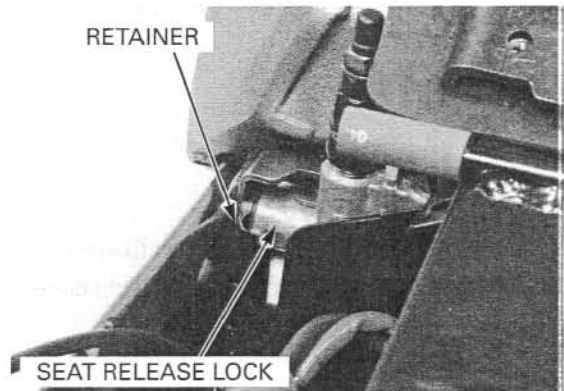
Remove the rear fender A mounting 8 mm bolts and rear fender A assembly.



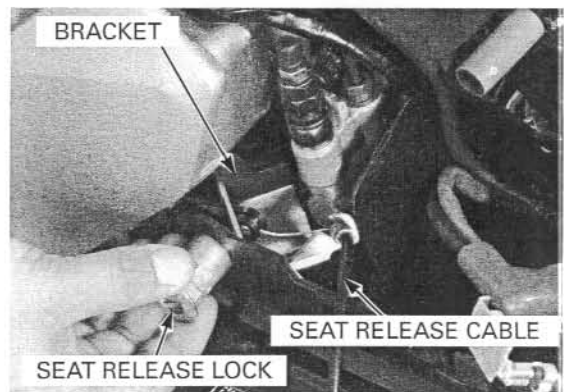
Remove the following:

- Muffler assembly (page 2-28)
- Battery (page 17-6)

Remove the seat release lock retainer from the lock.

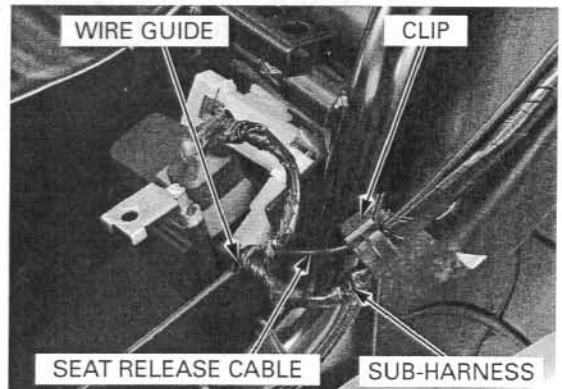


Disconnect the seat release cable from the lock and lock bracket, then remove the lock and lock bracket.

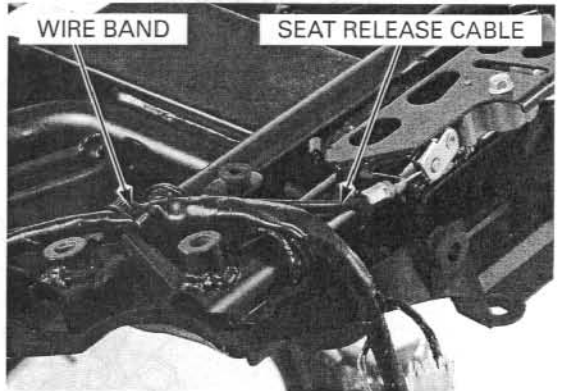


Remove the starter relay switch from the rear fender B boss.

Release the rear sub-harness and seat release cable from the wire clip and remove it from the rear fender B wire guide.



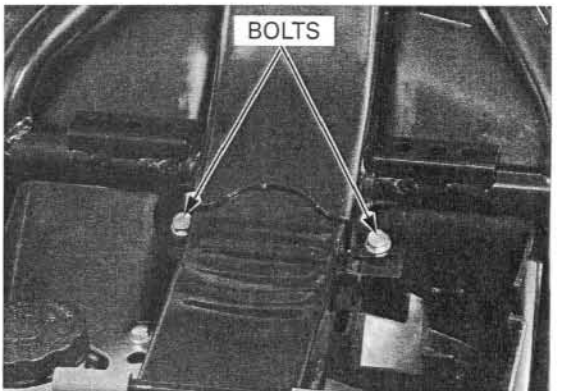
Remove the wire band, and then remove the seat release cable and rear sub-harness from the seat rail.



Remove the rear fender B rear mounting screws.

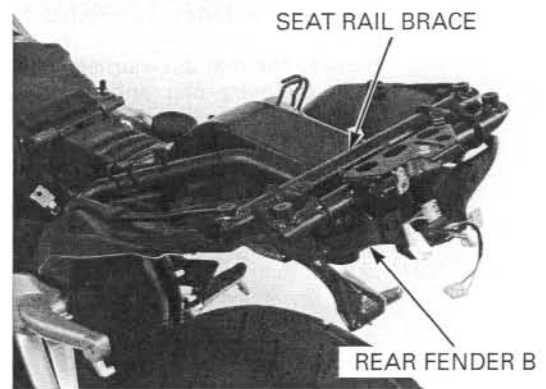


Remove the rear fender B front mounting bolts.

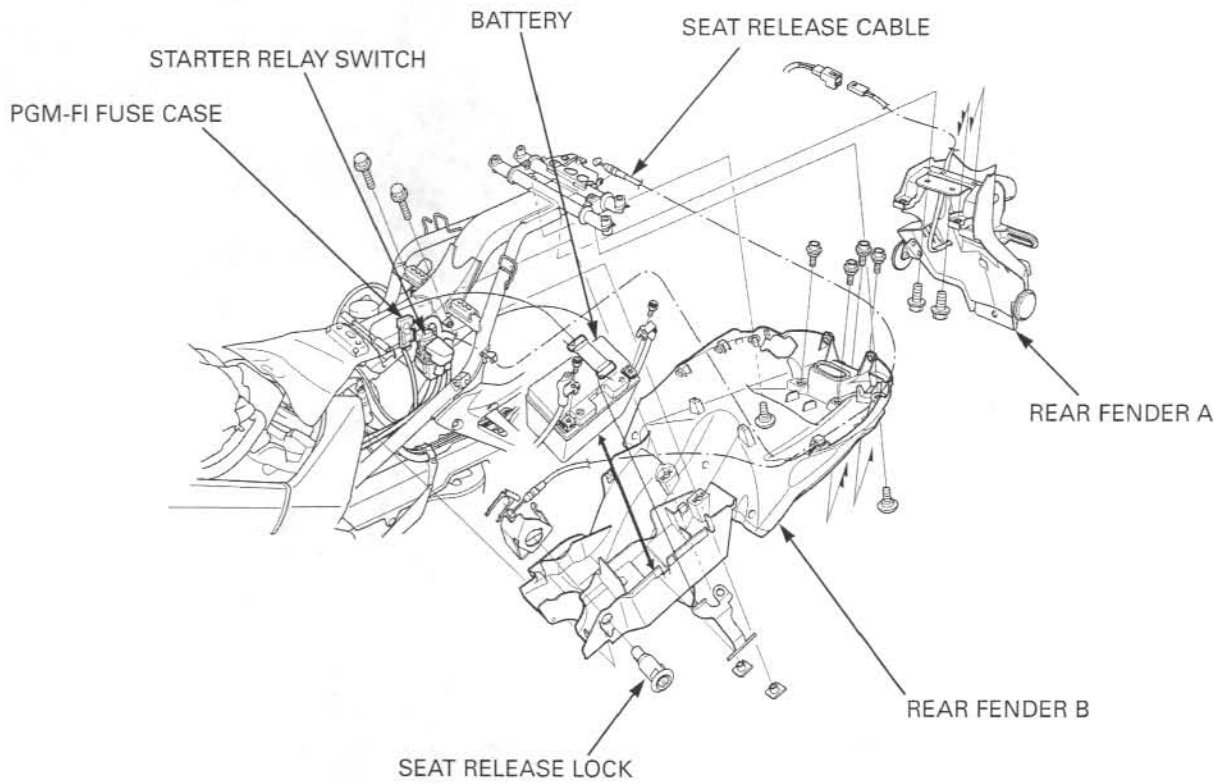


FRAME/BODY PANELS/EXHAUST SYSTEM

Unhook the rear fender B from the seat rail brace, then remove the rear fender B backward.

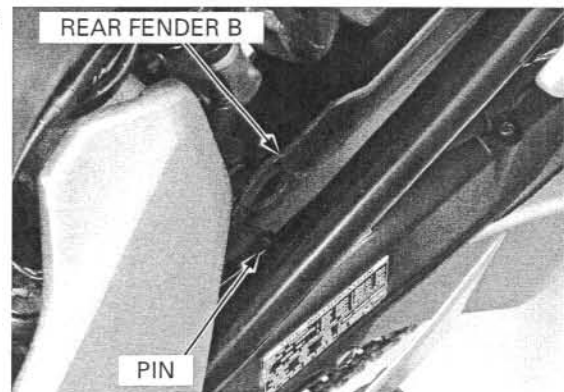


INSTALLATION



While installing the rear fender, route the wire harness properly (page 1-25).

Install the rear fender B aligning its front grooves with the seat rail pins.





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