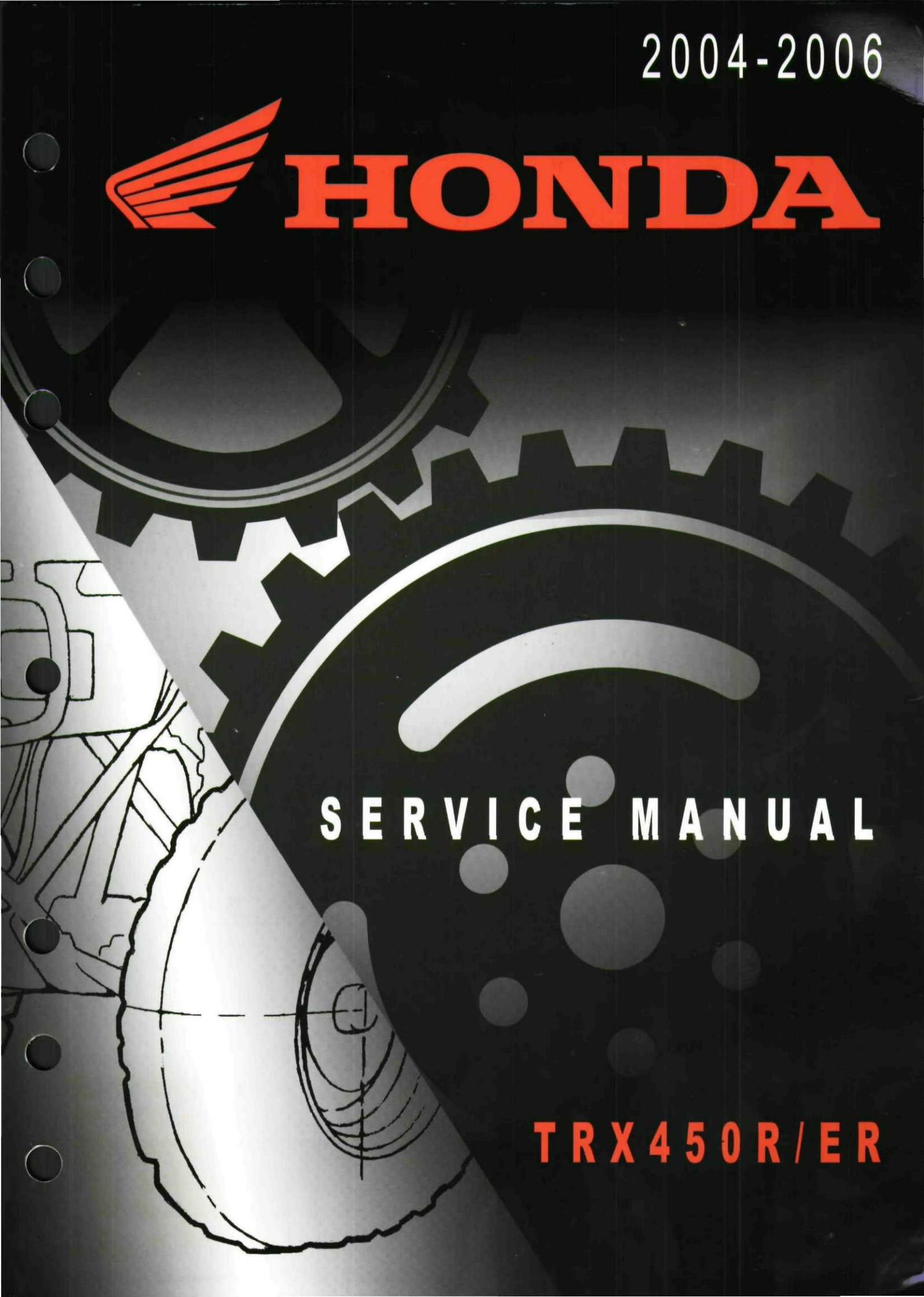


2004-2006



HONDA



SERVICE MANUAL

TRX450R/ER

A Few Words About Safety

Service Information

The service and repair information contained in this manual is intended for use by qualified, professional technicians. Attempting service or repairs without the proper training, tools, and equipment could cause injury to you or others. It could also damage the vehicle or create an unsafe condition.

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

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

For Your Customer's Safety

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

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.

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.

⚠ 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.

⚠ 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.

HOW TO USE THIS MANUAL

This service manual describes the service procedures for the TRX450R/ER.

Follow the Maintenance Schedule (Section 4) recommendations to ensure that the vehicle is in peak operating condition and the emission levels are within the standards set by the U.S. Environmental Protection Agency (EPA) and California Air Resources Board (CARB).

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

Sections 1 and 4 apply to the whole vehicle. Section 3 illustrates procedures for removal/installation of components that may be required to perform service described in the following sections. Sections 5 through 25 describe parts of the vehicle, 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 vehicle, read Technical Features in Section 2.

If you don't know the source of the trouble, go to section 26 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.

ALL INFORMATION, ILLUSTRATIONS, DIRECTIONS AND SPECIFICATIONS INCLUDED IN THIS PUBLICATION ARE BASED ON THE LATEST PRODUCT INFORMATION AVAILABLE AT THE TIME OF APPROVAL FOR PRINTING. Honda Motor Co., Ltd. RESERVES THE RIGHT TO MAKE CHANGES AT ANY TIME WITHOUT NOTICE AND WITHOUT INCURRING ANY OBLIGATION WHATSOEVER. NO PART OF THIS PUBLICATION MAY BE REPRODUCED WITHOUT WRITTEN PERMISSION. THIS MANUAL IS WRITTEN FOR PERSONS WHO HAVE ACQUIRED BASIC KNOWLEDGE OF MAINTENANCE ON Honda MOTORCYCLES, MOTOR SCOOTERS OR ATVS.

Honda Motor Co., Ltd.
SERVICE PUBLICATION OFFICE

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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 the 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>Apply 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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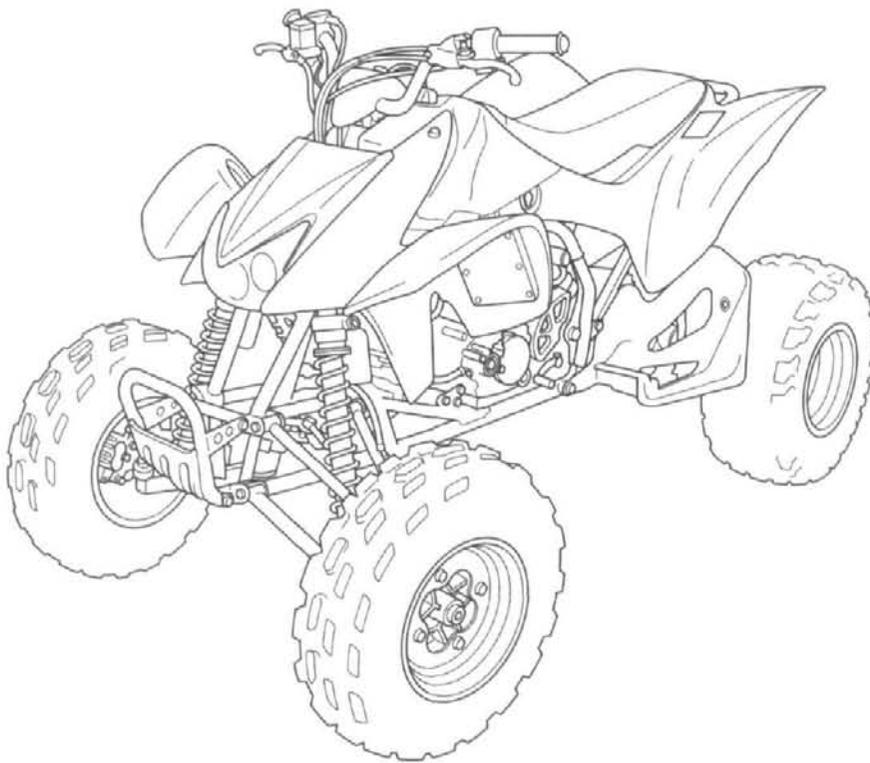
GENERAL INFORMATION

SERVICE RULES

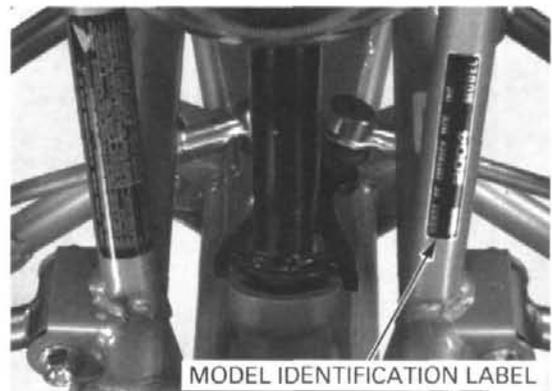
1. Use genuine Honda or Honda-recommended parts and lubricants or their equivalents. Parts that do not meet Honda's design specifications may cause damage to the vehicle.
2. Use the special tools designed for this product to avoid damage and incorrect assembly.
3. Use only metric tools when servicing the vehicle. 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 1-24).

MODEL IDENTIFICATION

'04 - '05 model shown; After '05 similar

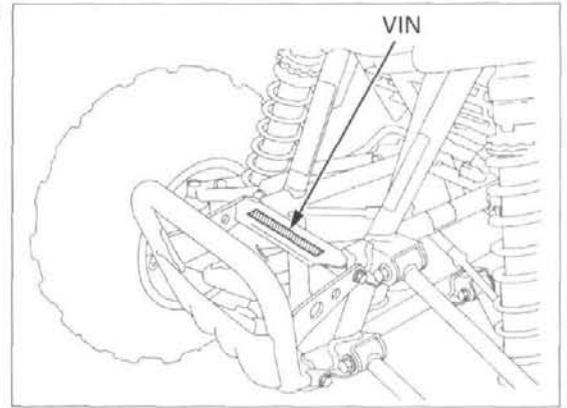


The model identification label is located on the left front frame pipe.

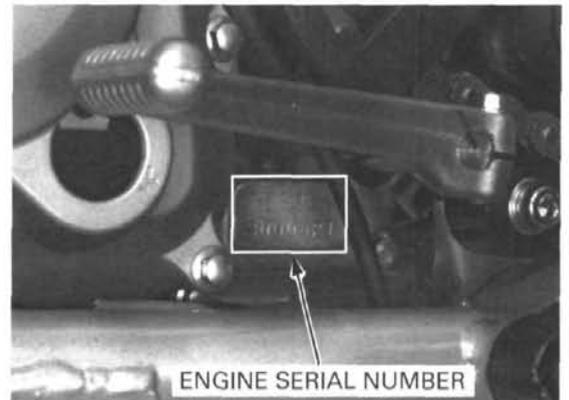


GENERAL INFORMATION

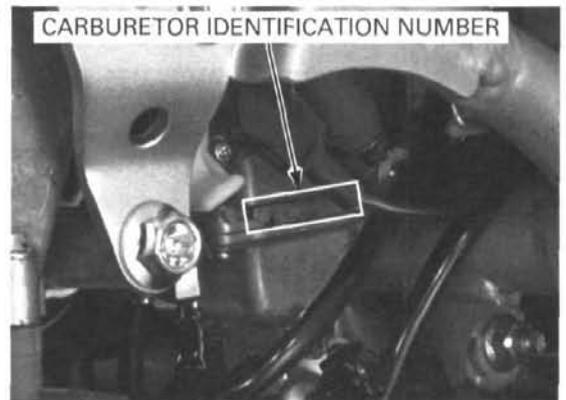
The vehicle identification number (VIN) is stamped on the front side of the frame.



The engine serial number is stamped on the left side of the crankcase.



The carburetor identification number is stamped on the left side of the carburetor body.

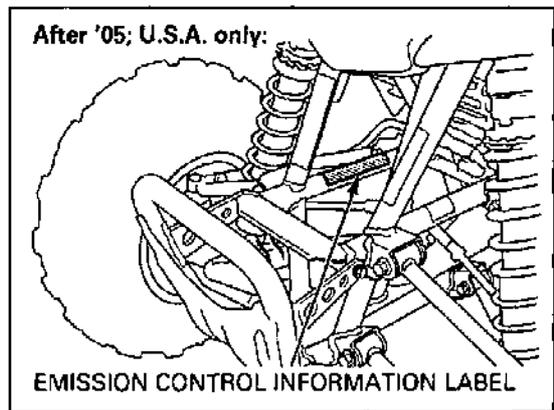


'04 - '05; The Vehicle Emission Control Information Label is attached on the right front frame pipe (U.S.A. only).

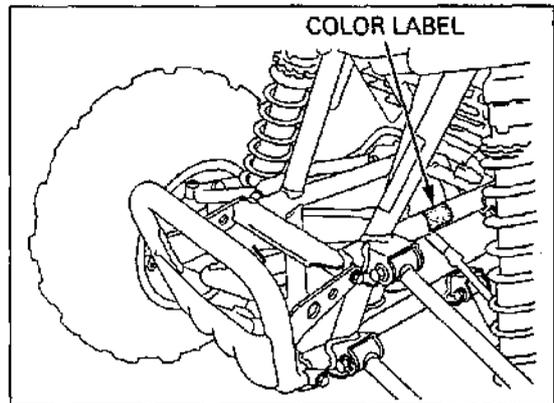


GENERAL INFORMATION

After '05; The Vehicle Emission Control Information Label is attached on the right side of front frame pipe.



The color label is attached on the left side of the front frame pipe. When ordering color coded parts, always specify the designated color code.



GENERAL SPECIFICATIONS ('04 – '05)

	ITEM	SPECIFICATIONS	
DIMENSIONS	Overall length	1,846 mm (72.6 in)	
	Overall width	1,177 mm (46.3 in)	
	Overall height	1,108 mm (43.6 in)	
	Wheelbase	1,251 mm (49.2 in)	
	Front tread	937 mm (36.8 in)	
	Rear tread	920 mm (36.2 in)	
	Seat height	829 mm (32.6 in)	
	Footpeg height	361 mm (14.2 in)	
	Ground clearance	114 mm (4.5 in)	
	Curb weight	176 kg (388 lbs)	
	Maximum weight capacity	110 kg (243 lbs)	
	FRAME	Frame type	Double cradle
		Front suspension	Double wish-bone
Front wheel travel		215 mm (8.5 in)	
Rear suspension		Swingarm	
Rear wheel travel		230 mm (9.1 in)	
Rear damper		Single tube	
Front tire size		AT22 x 7R10 ★ ★	
Rear tire size		AT20 x 10R9 ★ ★	
Front rim size		10 x 5.5 AT	
Rear rim size		9 x 8.0 AT	
Front tire brand		DUNLOP KT371	
Rear tire brand		DUNLOP KT335H	
Front brake		Hydraulic disc brake	
Rear brake		Hydraulic/mechanical disc brake	
Caster angle		5.87°	
Trail length		25.58 mm (1.007 in)	
Camber angle	0°		
Fuel tank capacity	12.0 liters (3.17 US gal, 2.64 Imp gal)		
Fuel tank reserve capacity	1.9 liters (0.50 US gal, 0.42 Imp gal)		
ENGINE	Cylinder arrangement	Single cylinder, transversely installed	
	Bore and stroke	94 x 64.8 mm (3.70 x 2.55 in)	
	Displacement	449.7 cm ³ (27.44 cu-in)	
	Compression ratio	10.5 : 1	
	Valve train	Chain drive and OHC with rocker arm	
	Intake valve opens at 1 mm (0.04 in) lift	10° BTDC	
	Intake valve closes at 1 mm (0.04 in) lift	40° ABDC	
	Exhaust valve opens at 1 mm (0.04 in) lift	40° BBDC	
	Exhaust valve closes at 1 mm (0.04 in) lift	10° ATDC	
	Lubrication system	Forced pressure (wet sump)	
	Oil pump type	Trochoid	
Cooling system	Liquid cooled		
Air filtration	Oiled urethane foam		
Engine dry weight	34.7 kg (76.8 lbs)		
CARBURETOR	Carburetor type	Piston valve	
	Throttle bore	42 mm (1.65 in)	

GENERAL INFORMATION

ITEM		SPECIFICATIONS
DRIVE TRAIN	Clutch system	Multi-plate, wet
	Clutch operation system	Cable operated
	Transmission	Constant mesh, 5-speed
	Primary reduction	2.739 (63/23)
	Final reduction	2.714 (38/14)
	Gear ratio	1st
		2nd
		3rd
		4th
		5th
	Gearshift pattern	Left foot operated return system, 1-N-2-3-4-5
ELECTRICAL	Ignition system	AC-CDI
	Charging system	Triple phase output alternator
	Regulator/rectifier	Triple phase full wave rectification
	Lighting system	12 V DC output

GENERAL SPECIFICATIONS (After '05)

ITEM		SPECIFICATIONS	
DIMENSIONS	Overall length	1,862 mm (73.3 in)	
	Overall width	1,177 mm (46.3 in)	
	Overall height	1,100 mm (43.3 in)	
	Wheelbase	1,275 mm (50.2 in)	
	Front tread	967 mm (38.1 in)	
	Rear tread	920 mm (36.2 in)	
	Seat height	833 mm (32.8 in)	
	Footpeg height	349 mm (13.7 in)	
	Ground clearance	111 mm (4.4 in)	
	Curb weight	TRX450ER	178 kg (392 lbs)
		TRX450R	175 kg (386 lbs)
		Maximum weight capacity	110 kg (243 lbs)
FRAME	Frame type	Double cradle	
	Front suspension	Double wish-bone	
	Front wheel travel	215 mm (8.5 in)	
	Rear suspension	Swingarm	
	Rear wheel travel	237 mm (9.3 in)	
	Rear damper	Single tube	
	Front tire size	AT22 x 7R10 ★ ★	
	Rear tire size	AT20 x 10R9 ★ ★	
	Front rim size	10 x 5.5 AT	
	Rear rim size	9 x 8.0 AT	
	Front tire brand	DUNLOP KT371	
	Rear tire brand	DUNLOP KT335H	
	Front brake	Hydraulic disc brake	
	Rear brake	Hydraulic/mechanical disc brake	
	Caster angle	5°	
	Trail length	23 mm (0.9 in)	
	Camber angle	- 1.9°	
	Fuel tank capacity	11.7 liters (3.09 US gal, 2.57 Imp gal)	
Fuel tank reserve capacity	2.9 liters (0.77 US gal, 0.64 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 Intake valve closes at 1 mm (0.04 in) lift Exhaust valve opens at 1 mm (0.04 in) lift Exhaust valve closes at 1 mm (0.04 in) lift Lubrication system Oil pump type Cooling system Air filtration Engine dry weight TRX450ER TRX450R	Single cylinder, transversely installed 96.0 x 62.1 mm (3.78 x 2.44 in) 449.4 cm ³ (27.42 cu-in) 12.0 : 1 Chain drive and OHC with rocker arm 10° BTDC 40° ABDC 40° BBDC 10° ATDC Forced pressure (wet sump) Trochoid Liquid cooled Oiled urethane foam 34.3 kg (75.6 lbs) 33.4 kg (73.6 lbs)
CARBURETOR	Carburetor type Venturi diameter	Piston valve 40 mm (1.6 in)
DRIVE TRAIN	Clutch system Clutch operation system Transmission Primary reduction Final reduction Gear ratio 1st 2nd 3rd 4th 5th Gearshift pattern	Multi-plate, wet Cable operated Constant mesh, 5-speed 2.739 (63/23) 2.923 (38/13) 2.230 (29/13) 1.785 (25/14) 1.437 (23/16) 1.181 (26/22) 0.962 (26/27) Left foot operated return system, 1-N-2-3-4-5
ELECTRICAL	Ignition system Starting system Charging system Regulator/rectifier Lighting system	AC-CDI Electric starter motor (TRX450ER) Kickstarter (TRX450R) Triple phase output alternator Triple phase full wave rectification Battery (TRX450ER) 12 V DC output (TRX450R)

GENERAL INFORMATION

LUBRICATION SYSTEM SPECIFICATIONS

ITEM		STANDARD		SERVICE LIMIT
Engine oil capacity	'04 - '05	After draining	0.78 liter (0.82 US qt, 0.67 Imp qt)	-
		After filter change	0.82 liter (0.87 US qt, 0.72 Imp qt)	-
		After disassembly	1.20 liter (1.27 US qt, 1.06 Imp qt)	-
	After '05	After draining	0.65 liter (0.69 US qt, 0.57 Imp qt)	-
		After filter change	0.69 liter (0.73 US qt, 0.61 Imp qt)	-
	After disassembly	0.85 liter (0.90 US qt, 0.75 Imp qt)	-	
Recommended engine oil			Pro Honda GN4, HP4 (without molybdenum additives) 4-stroke oil or HP4M (with molybdenum additives) 4-stroke oil, or equivalent motor oil API service classification: SG or Higher JASO T 903 standard: MA or MB Viscosity: SAE 10W-40, 5W-30	-
Transmission oil capacity	'04 - '05	After draining	0.55 liter (0.58 US qt, 0.48 Imp qt)	-
		After disassembly	0.65 liter (0.69 US qt, 0.57 Imp qt)	-
	After '05	After draining	0.68 liter (0.72 US qt, 0.60 Imp qt)	-
		After disassembly	0.80 liter (0.85 US qt, 0.70 Imp qt)	-
Recommended transmission oil			Pro Honda GN4 or HP4 (without molybdenum additives) 4-stroke oil or equivalent motor oil API service classification: SG or Higher JASO T 903 standard: MA Viscosity: SAE 10W-40, 5W-30	-
Oil pump rotor		Tip clearance	0.15 (0.006)	0.20 (0.008)
		Body clearance	0.15 - 0.21 (0.006 - 0.008)	-
		Side clearance	0.04 - 0.13 (0.002 - 0.005)	-

FUEL SYSTEM SPECIFICATIONS ('04 - '05)

ITEM	SPECIFICATIONS
Carburetor identification number	OA16A
Main jet	#118
Slow jet	#48
Pilot screw opening	See page 7-23
Float level	15.9 mm (0.63 in)
Idle speed	1,600 ± 100 rpm
Throttle grip free play	3 - 8 mm (1/8 - 5/16 in)
Hot starter lever free play	2 - 3 mm (1/16 - 1/8 in)

FUEL SYSTEM SPECIFICATIONS (After '05)

ITEM	SPECIFICATIONS
Carburetor identification number	TRX450ER
	TRX450R
Main jet	#120
Slow jet	#42
Starter jet	#75
Jet needle	NHHU
Pilot screw initial opening	2-3/8 turns out
Float level	8.0 mm (0.31 in)
Idle speed	1,700 ± 100 rpm
Throttle grip free play	5 - 10 mm (7/32 - 3/8 in)
Hot starter lever free play (TRX450R)	2 - 3 mm (1/16 - 1/8 in)

COOLING SYSTEM SPECIFICATIONS

ITEM		SPECIFICATIONS
Coolant capacity	Radiator and engine	1.5 liters (1.6 US qt, 1.3 Imp qt)
	Reserve tank	0.34 liter (0.36 US qt, 0.30 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		Pro Honda HP Coolant or an equivalent high quality ethylene glycol antifreeze containing silicate-free corrosion inhibitors
Standard coolant concentration		1:1 mixture with distilled water

CYLINDER HEAD/VALVE/CAMSHAFT SPECIFICATIONS ('04 – '05)

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT	
Cylinder compression			745 kPa (7.6 kgf/cm ² , 108 psi)	–	
Valve clearance		IN	0.16 ± 0.03 (0.006 ± 0.001)	–	
		EX	0.28 ± 0.03 (0.011 ± 0.001)	–	
Decompressor clearance			Right side exhaust valve clearance + 0.15 ± 0.02 mm (0.006 ± 0.001 in)	–	
Valve, valve guide	Valve stem O.D.	IN	5.475 – 5.490 (0.2156 – 0.2161)	5.46 (0.215)	
		EX	5.455 – 5.470 (0.2148 – 0.2154)	5.44 (0.214)	
	Valve guide I.D.		IN/EX	5.500 – 5.512 (0.2165 – 0.2170)	5.52 (0.217)
	Stem-to-guide clearance		IN	0.010 – 0.037 (0.0004 – 0.0015)	0.12 (0.005)
			EX	0.030 – 0.057 (0.0012 – 0.0022)	0.14 (0.006)
	Valve guide projection above cylinder head		IN	16.8 – 17.2 (0.66 – 0.68)	–
			EX	17.9 – 18.3 (0.70 – 0.72)	–
	Valve seat width		IN	1.1 – 1.3 (0.043 – 0.051)	2.0 (0.08)
EX			1.3 – 1.5 (0.051 – 0.059)	2.0 (0.08)	
Valve spring	Free length	IN	40.68 (1.602)	39.7 (1.56)	
		EX	43.16 (1.699)	42.2 (1.66)	
Exhaust rocker arm	Arm I.D.		12.000 – 12.018 (0.4724 – 0.4731)	12.05 (0.474)	
	Shaft O.D.		11.967 – 11.975 (0.4711 – 0.4715)	11.92 (0.469)	
	Arm-to-shaft clearance		0.025 – 0.051 (0.0010 – 0.0020)	0.10 (0.004)	
Camshaft	Cam lobe height	IN	36.630 – 36.790 (1.4421 – 1.4484)	36.48 (1.436)	
		EX	34.753 – 34.913 (1.3682 – 1.3745)	34.60 (1.362)	
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 (1.0240 – 1.0246)	26.04 (1.025)	
Cylinder head warpage			–	0.05 (0.002)	

GENERAL INFORMATION

CYLINDER HEAD/VALVE/CAMSHAFT SPECIFICATIONS (After '05)

Unit: mm (in)

ITEM		STANDARD		SERVICE LIMIT
Cylinder compression		TRX450ER	343 – 382 kPa (3.5 – 3.9 kgf/cm ² , 50 – 56 psi)	-
		TRX450R	961 – 1000 kPa (9.8 – 10.2 kgf/cm ² , 139 – 145 psi)	-
Valve clearance		IN	0.16 ± 0.03 (0.006 ± 0.001)	-
		EX	0.28 ± 0.03 (0.011 ± 0.001)	-
Decompressor clearance		Right side exhaust valve clearance + 0.25 ± 0.02 mm (0.010 ± 0.001 in)		-
Valve, valve guide	Valve stem O.D.	IN	5.475 – 5.490 (0.2156 – 0.2161)	5.46 (0.215)
		EX	4.965 – 4.980 (0.1955 – 0.1961)	4.96 (0.195)
	Valve guide I.D.	IN	5.500 – 5.512 (0.2165 – 0.2170)	5.52 (0.217)
		EX	5.000 – 5.012 (0.1969 – 0.1973)	5.052 (0.1989)
	Stem-to-guide clearance	IN	0.010 – 0.037 (0.0004 – 0.0015)	0.12 (0.005)
		EX	0.020 – 0.047 (0.0008 – 0.0019)	0.13 (0.005)
	Valve guide projection above cylinder head	IN	16.1 – 16.3 (0.63 – 0.64)	-
		EX	17.9 – 18.1 (0.70 – 0.71)	-
Valve seat width	IN	1.1 – 1.3 (0.043 – 0.051)	2.0 (0.08)	
	EX	1.3 – 1.5 (0.051 – 0.059)	2.0 (0.08)	
Valve spring	Free length	IN	40.68 (1.602)	39.7 (1.56)
		EX	42.82 (1.686)	42.2 (1.66)
Exhaust rocker arm	Arm I.D.	12.000 – 12.018 (0.4724 – 0.4731)		12.05 (0.474)
	Shaft O.D.	11.967 – 11.975 (0.4711 – 0.4715)		11.92 (0.469)
	Arm-to-shaft clearance	0.025 – 0.051 (0.0010 – 0.0020)		0.10 (0.004)
Camshaft	Cam lobe height	IN	35.040 – 35.280 (1.3795 – 1.3890)	34.89 (1.374)
		EX	34.214 – 34.454 (1.3470 – 1.3565)	34.06 (1.341)
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 (1.0240 – 1.0246)		26.04 (1.025)
Cylinder head warpage		-		0.05 (0.002)

CYLINDER/PISTON SPECIFICATIONS ('04 – '05)

Unit: mm (in)

ITEM		STANDARD		SERVICE LIMIT	
Cylinder	I.D.	94.000 – 94.015 (3.7008 – 3.7014)		94.05 (3.703)	
	Out-of-round	-		0.05 (0.002)	
	Taper	-		0.05 (0.002)	
	Warpage	-		0.05 (0.002)	
Piston, piston pin, piston ring	Piston O.D. at 20 (0.8) from bottom		93.960 – 93.990 (3.6992 – 3.7004)		93.86 (3.695)
	Piston pin hole I.D.		21.002 – 21.008 (0.8268 – 0.8271)		21.03 (0.828)
	Piston pin O.D.		20.994 – 21.000 (0.8265 – 0.8268)		20.98 (0.826)
	Piston-to-piston pin clearance		0.002 – 0.014 (0.0001 – 0.0006)		0.04 (0.002)
	Piston ring end gap	Top	0.20 – 0.35 (0.008 – 0.014)		0.50 (0.020)
		Second	0.35 – 0.50 (0.014 – 0.020)		0.65 (0.026)
		Oil (side rail)	0.20 – 0.70 (0.008 – 0.028)		0.9 (0.04)
	Piston ring-to-ring groove clearance	Top	0.065 – 0.100 (0.0026 – 0.0039)		0.115 (0.0045)
Second		0.030 – 0.060 (0.0012 – 0.0024)		0.075 (0.0030)	
Cylinder-to-piston clearance		0.010 – 0.055 (0.0004 – 0.0022)		0.19 (0.007)	
Connecting rod small end I.D.		21.016 – 21.034 (0.8274 – 0.8281)		21.04 (0.828)	
Connecting rod-to-piston pin clearance		0.016 – 0.040 (0.0006 – 0.0016)		0.06 (0.002)	

CYLINDER/PISTON SPECIFICATIONS (After '05)

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT	
Cylinder	I.D.	96.000 - 96.015 (3.7795 - 3.7801)	96.05 (3.781)	
	Out-of-round	-	0.05 (0.002)	
	Taper	-	0.05 (0.002)	
	Warpage	-	0.05 (0.002)	
Piston, piston pin, piston ring	Piston O.D. at 10 (0.4) from bottom	95.970 - 95.980 (3.7783 - 3.7787)	95.87 (3.774)	
	Piston pin hole I.D.	19.002 - 19.008 (0.7481 - 0.7483)	19.03 (0.749)	
	Piston pin O.D.	18.994 - 19.000 (0.7478 - 0.7480)	18.98 (0.747)	
	Piston-to-piston pin clearance	0.002 - 0.014 (0.0001 - 0.0006)	0.04 (0.002)	
	Piston ring end gap	Top	0.25 - 0.31 (0.010 - 0.012)	0.45 (0.018)
		Second	0.23 - 0.33 (0.009 - 0.013)	0.48 (0.019)
		Oil (side rail)	0.20 - 0.70 (0.008 - 0.028)	0.90 (0.035)
	Piston ring-to-ring groove clearance	Top	0.065 - 0.100 (0.0026 - 0.0039)	0.115 (0.0045)
Second		0.065 - 0.100 (0.0026 - 0.0039)	0.115 (0.0045)	
Cylinder-to-piston clearance		0.020 - 0.045 (0.0008 - 0.0018)	0.18 (0.007)	
Connecting rod small end I.D.		19.016 - 19.034 (0.7487 - 0.7494)	19.04 (0.750)	
Connecting rod-to-piston pin clearance		0.016 - 0.040 (0.0006 - 0.0016)	0.06 (0.002)	

CLUTCH/KICKSTARTER/GEARSHIFT LINKAGE SPECIFICATIONS ('04 - '05)

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT	
Clutch	Lever free play	10 - 20 (3/8 - 3/4)	-	
	Spring free length	45.7 (1.80)	44.7 (1.76)	
	Disc A thickness	2.92 - 3.08 (0.115 - 0.121)	2.85 (0.112)	
	Disc B thickness	3.22 - 3.38 (0.127 - 0.133)	3.15 (0.124)	
	Plate warpage	-	0.15 (0.006)	
Kickstarter	Pinion gear I.D.	22.007 - 22.028 (0.8664 - 0.8672)	22.05 (0.868)	
	Spindle O.D.	21.959 - 21.980 (0.8645 - 0.8654)	21.95 (0.864)	
	Idle gear I.D.	21.020 - 21.041 (0.8276 - 0.8284)	21.07 (0.830)	
	Idle gear bushing	I.D.	17.000 - 17.018 (0.6693 - 0.6700)	17.04 (0.671)
		O.D.	20.979 - 21.000 (0.8259 - 0.8268)	20.96 (0.825)
Countershaft O.D. at kickstarter idle gear		16.966 - 16.984 (0.6680 - 0.6687)	16.95 (0.667)	

CLUTCH/STARTER CLUTCH/KICKSTARTER/GEARSHIFT LINKAGE SPECIFICATIONS (After '05)

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT	
Clutch	Lever free play	10 - 20 (3/8 - 3/4)	-	
	Spring free length	45.7 (1.80)	44.7 (1.76)	
	Disc A thickness	2.92 - 3.08 (0.115 - 0.121)	2.85 (0.112)	
	Disc B thickness	3.22 - 3.38 (0.127 - 0.133)	3.15 (0.124)	
	Plate warpage	-	0.15 (0.006)	
Driven gear boss (TRX450ER)	I.D.	36.009 - 36.034 (1.4177 - 1.4189)	36.034 (1.4189)	
	O.D.	45.660 - 45.673 (1.7976 - 1.7981)	45.660 (1.7976)	
Reduction gear A I.D. (TRX450ER)		12.010 - 12.050 (0.4728 - 0.4744)	12.050 (0.4744)	
Reduction gear B I.D. (TRX450ER)		10.045 - 10.085 (0.3955 - 0.3970)	10.085 (0.3970)	
Idle gear I.D. (TRX450ER)		12.010 - 12.050 (0.4728 - 0.4744)	12.050 (0.4744)	
Gear holder shafts O.D. (TRX450ER)		11.989 - 12.000 (0.4720 - 0.4724)	11.989 (0.4720)	
Reduction gear shaft O.D. (TRX450ER)		9.980 - 9.995 (0.3929 - 0.3935)	9.980 (0.3929)	
Kickstarter (TRX450R)	Pinion gear I.D.	22.007 - 22.028 (0.8664 - 0.8672)	22.05 (0.868)	
	Spindle O.D.	21.959 - 21.980 (0.8645 - 0.8654)	21.95 (0.864)	
	Idle gear I.D.	21.020 - 21.041 (0.8276 - 0.8284)	21.07 (0.830)	
	Idle gear bushing	I.D.	17.000 - 17.018 (0.6693 - 0.6700)	17.04 (0.671)
		O.D.	20.979 - 21.000 (0.8259 - 0.8268)	20.96 (0.825)
Countershaft O.D. at kickstarter idle gear (TRX450R)		16.966 - 16.984 (0.6680 - 0.6687)	16.95 (0.667)	

GENERAL INFORMATION

**CRANKCASE/TRANSMISSION/CRANKSHAFT SPECIFICATIONS
('04 - '05)**

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Shift fork, shaft	Fork I.D.	Left, right	12.003 - 12.024 (0.4726 - 0.4733)	12.04 (0.474)
		Center	11.003 - 11.024 (0.4332 - 0.4340)	11.04 (0.435)
	Shaft O.D.	Left/right	11.983 - 11.994 (0.4718 - 0.4722)	11.97 (0.471)
		Center	10.983 - 10.994 (0.4324 - 0.4328)	10.97 (0.432)
	Fork claw thickness		4.93 - 5.00 (0.194 - 0.197)	4.8 (0.19)
Transmission	Gear I.D.	M4	28.007 - 28.028 (1.1026 - 1.1035)	28.05 (1.104)
		M5	28.020 - 28.033 (1.1031 - 1.1037)	28.06 (1.105)
		C1	22.020 - 22.041 (0.8669 - 0.8678)	22.07 (0.869)
		C2	30.020 - 30.041 (1.1819 - 1.1827)	30.07 (1.184)
		C3	28.020 - 28.041 (1.1031 - 1.1040)	28.07 (1.105)
	Gear bushing O.D.	M4, M5	27.959 - 27.980 (1.1007 - 1.1016)	27.94 (1.100)
		C1	21.959 - 21.980 (0.8645 - 0.8654)	21.94 (0.864)
		C2	29.959 - 29.980 (1.1795 - 1.1803)	29.94 (1.179)
		C3	27.959 - 27.980 (1.1007 - 1.1016)	27.94 (1.100)
	Gear bushing I.D.	M5	25.020 - 25.041 (0.9850 - 0.9859)	25.06 (0.987)
		C1	19.020 - 19.041 (0.7488 - 0.7496)	19.06 (0.750)
		C2	27.020 - 27.041 (1.0638 - 1.0646)	27.06 (1.065)
		C3	25.020 - 25.041 (0.9850 - 0.9859)	25.06 (0.987)
	Mainshaft O.D.	at M5	24.967 - 24.980 (0.9830 - 0.9835)	24.95 (0.982)
	Countershaft O.D.	at C1	18.959 - 18.980 (0.7464 - 0.7472)	18.94 (0.746)
		at C2	26.959 - 26.980 (1.0614 - 1.0622)	26.94 (1.061)
		at C3	24.959 - 24.980 (0.9826 - 0.9835)	24.94 (0.982)
Crankshaft	Runout	Left	-	0.05 (0.002)
		Right	-	0.03 (0.001)
	Big end side clearance		0.05 - 0.60 (0.002 - 0.024)	0.75 (0.030)
	Big end radial clearance		0.006 - 0.018 (0.0002 - 0.0007)	0.05 (0.002)

**CRANKCASE/TRANSMISSION/CRANKSHAFT SPECIFICATIONS
(After '05)**

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Shift fork, shaft	Fork I.D.	Left	12.035 - 12.056 (0.4738 - 0.4746)
		Right	12.003 - 12.024 (0.4726 - 0.4734)
		Center	11.003 - 11.024 (0.4332 - 0.4340)
	Shaft O.D.	Left/right	11.966 - 11.984 (0.4711 - 0.4718)
		Center	10.969 - 10.980 (0.4319 - 0.4323)
Fork claw thickness		4.93 - 5.00 (0.194 - 0.197)	4.8 (0.19)
Transmission	Gear I.D.	M4	28.007 - 28.028 (1.1026 - 1.1035)
		M5	28.020 - 28.033 (1.1031 - 1.1037)
		C1	22.020 - 22.041 (0.8669 - 0.8678)
		C2	30.020 - 30.041 (1.1819 - 1.1827)
		C3	28.020 - 28.041 (1.1031 - 1.1040)
	Gear bushing O.D.	M4, M5	27.959 - 27.980 (1.1007 - 1.1016)
		C1	21.959 - 21.980 (0.8645 - 0.8654)
		C2	29.959 - 29.980 (1.1795 - 1.1803)
		C3	27.959 - 27.980 (1.1007 - 1.1016)
	Gear bushing I.D.	M5	25.020 - 25.041 (0.9850 - 0.9859)
		C1	19.020 - 19.041 (0.7488 - 0.7496)
		C2	27.020 - 27.041 (1.0638 - 1.0646)
		C3	25.020 - 25.041 (0.9850 - 0.9859)
	Mainshaft O.D.	at M5	24.967 - 24.980 (0.9830 - 0.9835)
Countershaft O.D.	at C1	18.959 - 18.980 (0.7464 - 0.7472)	
	at C2	26.959 - 26.980 (1.0614 - 1.0622)	
	at C3	24.959 - 24.980 (0.9826 - 0.9835)	
Crankshaft	Runout	Left	-
		Right	-
	Big end side clearance		0.30 - 0.75 (0.012 - 0.030)
	Big end radial clearance		0.006 - 0.018 (0.0002 - 0.0007)

FRONT WHEEL/SUSPENSION/STEERING SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Minimum tire tread depth		-	4.0 (0.16)
Cold tire pressure ('04 - '05)	Standard	27.5 kPa (0.275 kgf/cm ² , 4.0 psi)	-
	Minimum	23.5 kPa (0.235 kgf/cm ² , 3.4psi)	-
	Maximum	31.5 kPa (0.315 kgf/cm ² , 4.6 psi)	-
Cold tire pressure (After '05)	Standard	27.5 kPa (0.275 kgf/cm ² , 4.0 psi)	-
	Minimum	25.0 kPa (0.250 kgf/cm ² , 3.6psi)	-
	Maximum	30.0 kPa (0.300 kgf/cm ² , 4.4 psi)	-
Compression damping adjuster standard position	'04 - '05	1-7/8 turns out from full in	-
	After '05	1/2 ± 1/8 turns out from full in	-
Rebound damping adjuster standard position	'04 - '05	1-3/8 turns out from full in	-
	After '05	7/8 ± 1/8 turns out from full in	-
Tie-rod distance between the ball joints	'04 - '05	409.5 (16.12)	-
	After '05	398.0 (15.67)	-
Toe	'04 - '05	Toe-in: 11.4 ± 15 (0.45 ± 0.6)	-
	After '05	Toe-in: 14 ± 15 (0.6 ± 0.6)	-

GENERAL INFORMATION

REAR WHEEL/SUSPENSION SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT	
Minimum tire tread depth		-	4.0 (0.16)	
Cold tire pressure ('04 - '05)	Standard	32.5 kPa (0.325 kgf/cm ² , 4.7 psi)	-	
	Minimum	28.5 kPa (0.285 kgf/cm ² , 4.1 psi)	-	
	Maximum	36.5 kPa (0.365 kgf/cm ² , 5.3 psi)	-	
Cold tire pressure (After '05)	Standard	32.5 kPa (0.325 kgf/cm ² , 4.7 psi)	-	
	Minimum	30.0 kPa (0.300 kgf/cm ² , 4.3 psi)	-	
	Maximum	35.0 kPa (0.350 kgf/cm ² , 5.1 psi)	-	
Axle runout		-	3.0 (0.12)	
Drive chain	Stack	25 - 35 (1 - 1-7/16)	-	
	Size/link ('04 - '05)	DID	DID520V6/94	-
		RK	RK520SMOZ10S/94	-
	Size/link (After '05)	DID	DID520V6/96	-
RK		RK520SMOZ10S/96	-	
Compression damping adjuster standard position	'04 - '05	26 ± 1 clicks out from full in	-	
	After '05	8 ± 1 clicks out from full in	-	
Rebound damping adjuster standard position	'04 - '05	1-3/4 turns out from full in	-	
	After '05	1-1/8 ± 1/8 turns out from full in	-	

HYDRAULIC BRAKE SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Recommended brake fluid		DOT 4 brake fluid	-
Front brake	Disc thickness	2.8 - 3.2 (0.11 - 0.13)	2.5 (0.10)
	Disc runout	-	0.30 (0.012)
	Master cylinder I.D.	12.7 (0.55)	-
	Caliper cylinder I.D.	25.4 (1.00)	-
Rear brake	Brake disc thickness	3.8 - 4.2 (0.15 - 0.17)	3.5 (0.14)
	Brake disc runout	-	0.30 (0.012)
	Master cylinder I.D.	12.7 (0.55)	-
	Caliper cylinder I.D.	32.0 (1.26)	-

ELECTRICAL SPECIFICATIONS ('04 - '05)

ITEM		SPECIFICATIONS
Alternator	Capacity	214 W/5,000 rpm
	Charging coil resistance (20°C/68°F)	0.1 - 1.0 Ω
Spark plug	Standard	IFR8H11 (NGK) VK24PRZ11 (DENSO)
	For extended high speed riding	IFR9H11 (NGK) VK27PRZ11 (DENSO)
Spark plug gap		1.0 - 1.1 mm (0.039 - 0.043 in)
Ignition coil peak voltage		100 V minimum
Exciter coil peak voltage	High	80 V minimum
	Low	30 V minimum
Ignition pulse generator peak voltage		0.7 V minimum
Ignition timing ("F" mark)		12° BTDC at idle
Bulb	Headlight	12 V - 30 W/30 W x 2
	Taillight	LED
	Coolant temperature indicator	12 V - 3.4 W
Carburetor heater resistance (20°C/68°F)		13 - 15 Ω
Throttle position sensor resistance (20°C/68°F)		4 - 6 kΩ
ECT sensor resistance	at 80°C (176°F)	47.5 - 56.8 Ω
	at 120°C (248°F)	14.9 - 17.3 Ω

BATTERY/CHARGING SYSTEM SPECIFICATIONS (TRX450ER)

ITEM		SPECIFICATIONS	
Battery	Capacity	12V - 6 Ah	
	Voltage (20°C/68°F)	Fully charged	13.0 - 13.2 V
		Needs charging	Below 12.3 V
	Charging current	Normal	0.6 A/5 - 10 h
Quick		3.0 A/1 h	
Current leakage		0.01 mA max.	
Alternator	Capacity	200 W/5,000 rpm (min ⁻¹)	
	Charging coil resistance (20°C/68°F)	0.1 - 1.0 Ω	

IGNITION SYSTEM SPECIFICATIONS (After '05)

ITEM		SPECIFICATIONS
Spark plug	Standard	IFR7L11 (NGK) VK22PRZ11 (DENSO)
	For extended high speed riding	IFR8H11 (NGK) VK24PRZ11 (DENSO)
Spark plug gap		1.0 - 1.1 mm (0.039 - 0.043 in)
Ignition coil peak voltage		100 V minimum
Exciter coil peak voltage	High	45 V minimum
	Low	15 V minimum
Ignition pulse generator peak voltage		0.7 V minimum
Ignition timing ("F" mark)		11.4° BTDC at idle
Throttle position sensor resistance (20°C/68°F)		4 - 6 kΩ

ELECTRIC STARTER SPECIFICATIONS (TRX450ER)

Unit: mm (in)

ITEM	STANDARD	SERVICE LIMIT
Starter motor brush length	10.25 (0.404)	6.75 (0.266)

LIGHTS/SWITCH SPECIFICATIONS (After '05)

ITEM		SPECIFICATIONS
Bulbs	Headlight (High/low beam)	12 V - 30/30 W
	Brake/taillight	LED
	Neutral indicator (TRX450ER)	12 V - 3 W
	Coolant temperature indicator	12 V - 3.4 W
Fuse	Main fuse (TRX450ER)	15 A
ECT sensor resistance	at 80°C (176°F)	47.5 - 56.8 Ω
	at 120°C (248°F)	14.9 - 17.3 Ω

GENERAL INFORMATION

STANDARD TORQUE VALUES

FASTENER TYPE	TORQUE		FASTENER TYPE	TORQUE	
	N-m (kgf-m, lbf-ft)			N-m (kgf-m, lbf-ft)	
5 mm bolt and nut	5 (0.5, 3.6)		5 mm screw	4 (0.4, 2.9)	
6 mm bolt and nut	9.8 (1.0, 7)		6 mm screw	9 (0.9, 6.5)	
8 mm bolt and nut	22 (2.2, 16)		6 mm flange bolt (8 mm head; small flange)	9.8 (1.0, 7)	
10 mm bolt and nut	34 (3.5, 25)		6 mm flange bolt (8 mm head; large flange)	12 (1.2, 9)	
12 mm 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 engine oil to the threads and seating surface.
2. Apply grease to the threads and seating surface.
3. Apply locking agent to the threads.
4. Replace with a new one and stake.
5. Apply sealant to the threads.
6. ALOC bolt: replace with a new one.
7. Castle nut: tighten to the specified torque and further tighten until its grooves aligns with the cotter pin hole.

ENGINE

MAINTENANCE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Spark plug	1	14	23 (2.3, 17)	
Decompressor arm adjusting screw lock nut	1	5	9.8 (1.0, 7)	NOTE 1
Crankshaft hofe cap	1	30	15 (1.5, 11)	NOTE 2
Engine oil drain bolt ('04 - '05)	1	8	22 (2.2, 16)	NOTE 1
Engine oil drain bolt (After '05)	1	12	25 (2.5, 18)	NOTE 1
Transmission oil drain bolt	1	8	22 (2.2, 16)	NOTE 1

FUEL SYSTEM ('04 - '05)

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Carburetor insulator band screw	2	5	-	page 7-21
Starting enrichment (SE) valve nut	1	-	3 (0.3, 2.2)	
Hot start valve nut	1	-	3 (0.3, 2.2)	

FUEL SYSTEM (After '05)

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Slow air jet	1	-	0.9 (0.1, 0.7)	
Slow jet	1	-	1.5 (0.2, 1.1)	
Starter jet	1	-	1.5 (0.2, 1.1)	
Needle jet	1	-	1.8 (0.2, 1.3)	
Main jet	1	-	1.5 (0.2, 1.1)	
Float chamber screw	1	-	2.1 (0.2, 1.5)	
Accelerator pump cover screw	1	-	2.1 (0.2, 1.5)	
Choke valve lock nut	1	-	2.1 (0.2, 1.5)	
Throttle shaft screw	1	-	2.1 (0.2, 1.5)	NOTE 3
Needle holder	1	-	2.1 (0.2, 1.5)	
Top cover bolt	1	-	2.1 (0.2, 1.5)	
Throttle drum cover bolt	1	-	3.4 (0.3, 2.5)	
Carburetor insulator band screw	2	5	-	page 8-23
Hot start valve nut (TRX450R)	1	-	2.1 (0.2, 1.5)	

GENERAL INFORMATION

COOLING SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Water pump impeller	1	7	12 (1.2, 9)	

ENGINE REMOVAL/INSTALLATION

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Drive sprocket bolt	1	8	31 (3.2, 23)	

CYLINDER HEAD/VALVE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Cylinder head nut	4	10	54 (5.5, 40)	NOTE 1
Cylinder head cover bolt	3	6	9.8 (1.0, 7)	
Camshaft holder bolt	4	6	14 (1.4, 10)	NOTE 1
Decompressor lifter arm nut	1	8	22 (2.2, 16)	NOTE 1
Decompressor cam bolt	1	8	25 (2.5, 18)	NOTE 3
Cam sprocket bolt	2	7	20 (2.0, 14)	NOTE 3

CYLINDER/PISTON

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Cylinder stud bolt	4	10	-	page 12-9
Cam chain tensioner lifter bolt (After '05)	2	6	12 (1.2, 9)	NOTE 3

CLUTCH/STARTER CLUTCH/KICKSTARTER/GEARSHIFT LINKAGE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Clutch spring bolt	6	6	12 (1.2, 9)	
Clutch center lock nut	1	18	108 (11.0, 80)	NOTE 1
Shift drum center pin bolt	1	8	22 (2.2, 16)	NOTE 3
Shift drum stopper arm bolt	1	6	12 (1.2, 9)	
Start gear holder bolt (TRX450ER)	2	7	18 (1.8, 13)	NOTE 1
Start gear holder bolt (TRX450ER)	1	7	18 (1.8, 13)	NOTE 3
Primary drive gear bolt (TRX450ER)	1	12	108 (11.0, 80)	NOTE 1
Start gear holder hole plug bolt (After '05;TRX450R)	3	7	18 (1.8, 13)	NOTE 1
Kickstarter pedal bolt (TRX450R)	1	8	38 (3.9, 28)	
Gearshift return spring pin	1	8	22 (2.2, 16)	

CRANKCASE/TRANSMISSION/CRANKSHAFT

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Balancer shaft lock nut ('04 - '05)	1	16	64 (6.5, 47)	NOTE 1, 4
Balancer shaft lock nut (After '05)	1	14	54 (5.5, 40)	NOTE 1, 4
Cam chain tensioner bolt	1	6	12 (1.2, 9)	NOTE 3
Primary drive gear bolt	1	12	108 (11.0, 80)	NOTE 1
Bearing set plate bolt	6	6	12 (1.2, 9)	NOTE 3
Crankshaft bearing set plate bolt (After '05)	2	6	16 (1.6, 12)	NOTE 3
Countershaft bearing set plate torx screw (After '05)	2	6	12 (1.2, 9)	NOTE 3
Neutral switch hole plug bolt (After '05;TRX450R)	1	10	12 (1.2, 9)	
Oil jet ('04 - '05)	1	5	2 (0.2, 1.4)	NOTE 3
Piston jet mounting bolt (After '05)	1	6	10 (1.0, 7)	NOTE 3

GENERAL INFORMATION

ELECTRICAL

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Engine coolant temperature (ECT) sensor	1	PT 1/8	9.8 (1.0, 7)	NOTE 5
Timing hole cap	1	14	9.8 (1.0, 7)	NOTE 2
Flywheel nut ('04 - '05)	1	14	74 (7.5, 54)	NOTE 1
Flywheel nut (After '05)	1	12	64 (6.5, 47)	NOTE 1
Ignition pulse generator bolt ('04 - '05)	2	5	5 (0.5, 3.6)	
Ignition pulse generator bolt (After '05)	4	5	5 (0.5, 3.6)	
Alternator stator bolt	3	6	9.8 (1.0, 7)	

IGNITION SYSTEM (AFTER '05)

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Throttle position sensor screw	1	5	3.4 (0.3, 2.5)	NOTE 3

LIGHTS/SWITCHES (AFTER '05)

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Neutral switch (TRX450ER)	1	10	12 (1.2, 9)	

FRAME

FRAME/BODY PANELS/EXHAUST SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Footpeg bracket bolt	4	10	42 (4.3, 31)	NOTE 6
Skid plate bolt	6	8	30 (3.1, 22)	
Muffler mounting nut	2	8	32 (3.3, 24)	
Exhaust pipe band bolt ('04 - '05)	2	8	23 (2.3, 17)	
Exhaust pipe band bolt (After '05)	1	8	23 (2.3, 17)	
Rear frame upper mounting bolt	2	8	32 (3.3, 24)	
Rear frame lower mounting bolt	2	10	54 (5.5, 40)	

MAINTENANCE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Axle bearing holder pinch bolt	4	8	21 (2.1, 15)	
Front master cylinder reservoir cap screw	2	4	2 (0.2, 1.4)	
Parking brake arm lock nut	1	8	18 (1.8, 13)	
Rear master cylinder push rod lock nut	1	8	18 (1.8, 13)	
Tie-rod lock nut	4	12	54 (5.5, 40)	

ENGINE REMOVAL/INSTALLATION

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Upper engine hanger nut	1	10	54 (5.5, 40)	
Upper engine hanger plate bolt	4	8	26 (2.7, 20)	
Front engine hanger nut	1	10	54 (5.5, 40)	
Front engine hanger plate bolt	4	8	26 (2.7, 20)	
Lower engine hanger nut	1	10	74 (7.5, 54)	

FRONT WHEEL/SUSPENSION/STEERING

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N-m (kgf-m, lbf-ft)	REMARKS
Throttle housing cover screw ('04 - '05)	3	4	4 (0.4, 2.9)	
Throttle housing cover screw (After '05)	3	4	3.4 (0.4, 2.5)	
Throttle lever switch screw (After '05)	2	3	1 (0.1, 0.7)	
Handlebar grip end bolt	2	6	12 (1.2, 9)	
Handlebar switch housing screw	2	5	2 (0.2, 1.4)	
Clutch lever pivot bolt	1	6	1 (0.1, 0.7)	
Clutch lever pivot nut	1	6	5.9 (0.6, 4.3)	
Parking brake lever pivot screw ('04 - '05)	1	6	9 (0.9, 6.5)	
Parking brake lever pivot screw (After '05)	1	6	9 (0.9, 6.5)	NOTE 3
Front wheel nut	8	10	64 (6.5, 47)	
Front wheel hub nut	2	14	69 (7.0, 51)	NOTE 7
Front brake disc bolt	6	8	42 (4.3, 31)	NOTE 6
Shock absorber mounting nut	4	10	39 (4.0, 29)	
Front brake hose clamp bolt	5	6	12 (1.2, 9)	NOTE 6
Upper and lower arm pivot nut	8	10	39 (4.0, 29)	
Upper and lower arm ball joint nut	4	12	32 (3.3, 24)	NOTE 7
Tie-rod ball joint nut	4	10	44 (4.5, 33)	
Handlebar lower holder nut	2	10	39 (4.0, 29)	
Steering shaft end nut	1	14	69 (7.0, 51)	
Steering shaft holder bolt	2	8	32 (3.3, 24)	

GENERAL INFORMATION

REAR WHEEL/SUSPENSION

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Rear wheel nut	8	10	64 (6.5, 47)	
Rear wheel hub nut	2	18	147 (15.0, 108)	NOTE 2, 7
Rear brake caliper bracket mounting bolt	2	8	30 (3.1, 22)	NOTE 6
Drive chain guard bolt	2	6	9.8 (1.0, 7)	NOTE 6
Rear axle inner lock nut	1	48	128 (13.0, 94)	NOTE 3
Rear axle outer lock nut	1	48	88 (9.0, 65)	NOTE 3
Rear brake disc bolt	3	8	42 (4.3, 31)	NOTE 6
Final driven sprocket nut	4	10	59 (6.0, 43)	
Rear shock absorber mounting nut	2	10	59 (6.0, 43)	
Shock link-to-swingarm nut	1	10	44 (4.5, 33)	
Shock arm-to-frame nut	1	10	59 (6.0, 43)	
Shock arm-to-shock link nut	1	10	59 (6.0, 43)	
Rear brake hose clamp bolt	2	6	9.8 (1.0, 7)	NOTE 6
Rear brake hose guide bolt	1	6	9.8 (1.0, 7)	NOTE 6
Parking brake cable clamp bolt	1	6	9.8 (1.0, 7)	NOTE 6
Chain slider bolt	2	6	9.8 (1.0, 7)	NOTE 6
Swingarm pivot nut	1	14	108 (11.0, 80)	NOTE 2
Rear brake caliper stay stopper bolt	1	12	59 (6.0, 43)	NOTE 3

HYDRAULIC BRAKE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Brake caliper bleed valve	3	8	6 (0.6, 4.3)	
Rear brake reservoir mounting bolt	1	6	12 (1.2, 9)	
Front brake disc cover bolt	2	6	12 (1.2, 9)	NOTE 6
Front brake pad pin	2	10	18 (1.8, 13)	
Rear brake caliper pin bolt	1	8	23 (2.3, 17)	
Brake hose oil bolt	5	10	34 (3.2, 25)	
Front brake lever pivot bolt	2	6	1 (0.1, 0.7)	
Front brake lever pivot nut	2	6	6 (0.6, 4.3)	
Front brake light switch screw	1	4	1 (0.1, 0.7)	
Front brake caliper bracket mounting bolt	2	8	30 (3.1, 22)	NOTE 6
Rear brake reservoir hose joint screw	1	4	2 (0.2, 1.4)	NOTE 3
Rear master cylinder mounting bolt	2	6	12 (1.2, 9)	
Parking brake base bolt	2	8	23 (2.3, 17)	
Brake pedal pivot bolt	1	8	26 (2.7, 20)	
Front brake pipe joint bolt	3	10	17 (1.7, 12)	
Front brake 3-way joint mounting bolt	1	6	12 (1.2, 9)	

LUBRICATION & SEAL POINTS**ENGINE**

LOCATION	MATERIAL	REMARKS
Camshaft cam lobe Rocker arm pivot and slipper surface Decompressor lifter arm roller surface Valve stem sliding surface Valve stem end Valve lifter outer surface Clutch outer guide sliding surface Clutch lifter arm cam (lifter rod contact area) Shift fork guide pin and shifter (gear guide groove) Shift fork shaft sliding surface Kickstarter spindle gear and ratchet sliding surface (TRX450R) Kickstarter pinion gear inner surface (TRX450R) Starter gear holder rotating surfaces (TRX450ER) Piston pin outer surface Connecting rod small end inner surface Connecting rod big end thrust surface Balancer shaft needle bearing and ball bearing Mainshaft gear and shifter sliding surface Countershaft gear and shifter sliding surface Each gear sliding surface	Molybdenum oil solution (a mixture of engine oil and molybdenum disulfide grease in a ratio of 1:1)	
Oil pump rotor sliding surface Oil pipe seal ring ('04 - '05) Decompressor arm adjusting screw lock nut threads Camshaft holder bolt threads Decompressor lifter arm nut threads and seating surface Decompressor arm pivot surface Cylinder head nut threads and seating surface Piston outer surface and piston pin hole Piston rings Clutch outer sliding surface Clutch disc lining surface Clutch center lock nut threads and seating surface Clutch lifter piece needle bearing Gearshift spindle serration area (TRX450R) Kickstarter idle gear B bearing area (TRX450R) Kickstarter spindle bearing area (TRX450R) One-way clutch outer surfaces (TRX450ER) Starter clutch outer sliding surfaces (TRX450ER) Starter driven gear sliding surfaces (TRX450ER) Balancer shaft lock nut threads Primary drive gear bolt threads Crankshaft oil seal contacting surface Shift drum guide groove Shift spindle serration area (After '05) Flywheel nut threads and seating surface Each bearing rotating area Each O-ring	Engine oil	
Crankshaft hole cap threads Timing hole cap threads Each oil seal lip	Multi purpose grease	

GENERAL INFORMATION

LOCATION	MATERIAL	REMARKS
Cam sprocket bolt threads	Locking agent	Coating width: 6.5 ± 1 mm (0.26 ± 0.04 in)
Decompressor cam bolt threads		Coating width: 6.5 ± 1 mm (0.26 ± 0.04 in)
Shift drum center bolt threads		Coating width: 6.5 ± 1 mm (0.26 ± 0.04 in)
Cam chain tensioner bolt threads		Coating width: 6.5 ± 1 mm (0.26 ± 0.04 in)
Bearing set plate bolt threads		Coating width: 6.5 ± 1 mm (0.26 ± 0.04 in)
Bearing set plate screw threads		Coating width: 6.5 ± 1 mm (0.26 ± 0.04 in)
Starter gear holder mounting bolt (TRX450ER)		Coating width: 6.5 ± 1 mm (0.26 ± 0.04 in)
Oil jet threads ('04 - '05)		Coating width: 2.5 ± 1 mm (0.10 ± 0.04 in)
Piston jet threads (After '05)		Coating width: 6.5 ± 1 mm (0.26 ± 0.04 in)
Cylinder head cover breather plate bolt threads		Coating width: 6.5 ± 1 mm (0.26 ± 0.04 in)
Crankcase bolt threads		Coating width: 6.5 ± 1 mm (0.26 ± 0.04 in) '04 - '05: (page 15-26) After '05: (page 16-26)
Parking brake cable clasper bolt threads		
Engine coolant temperature (ECT) sensor threads		Sealant

FRAME

LOCATION	MATERIAL	REMARKS
Throttle cable end	Multi purpose grease (NLGI #2)	
Throttle cable adjuster threads		
Throttle lever pivot and dust seal lip		
Clutch lever pivot		
Parking lock arm pivot (screw)		
Parking brake cable end		
Kickstarter pedal joint sliding area (TRX450R)		
Steering shaft bearing dust seal lip		
Front wheel hub dust seal lip		
Upper and lower arm pivot bearings		Fill up 3 g per each bearing
Upper and lower arm pivot bearing dust seal lips		
Front shock absorber lower bearing		
Front shock absorber lower bearing dust seal lip		
Shock arm and link bearings		
Shock arm and link bearing dust seal lips		
Rear shock absorber upper bearing		
Rear shock absorber upper bearing dust seal lip		
Swingarm pivot bearing		Fill up 3 g per each bearing
Swingarm pivot bearing dust seal lip		
Rear axle bearing holder dust seal lip		
Rear axle bearing holder sliding surface		
Shock link-to-swingarm bolt pivot surface		
Rear wheel hub nut threads and seating surface		
Rear axle splines		
Swingarm pivot nut threads and seating surface		
Brake pedal pivot bolt sliding surface		
Steering shaft bushing sliding surface	Shell Alvania EP-LF-2 or equivalent	
Rear axle outer lock nut clip contacting area	Molybdenum disulfide grease	
Rear axle bearing holder pinch bolt seating surface		
Throttle cable outer inside	Cable lubricant	
Clutch cable outer inside		
Hot start cable inside (TRX450R)		

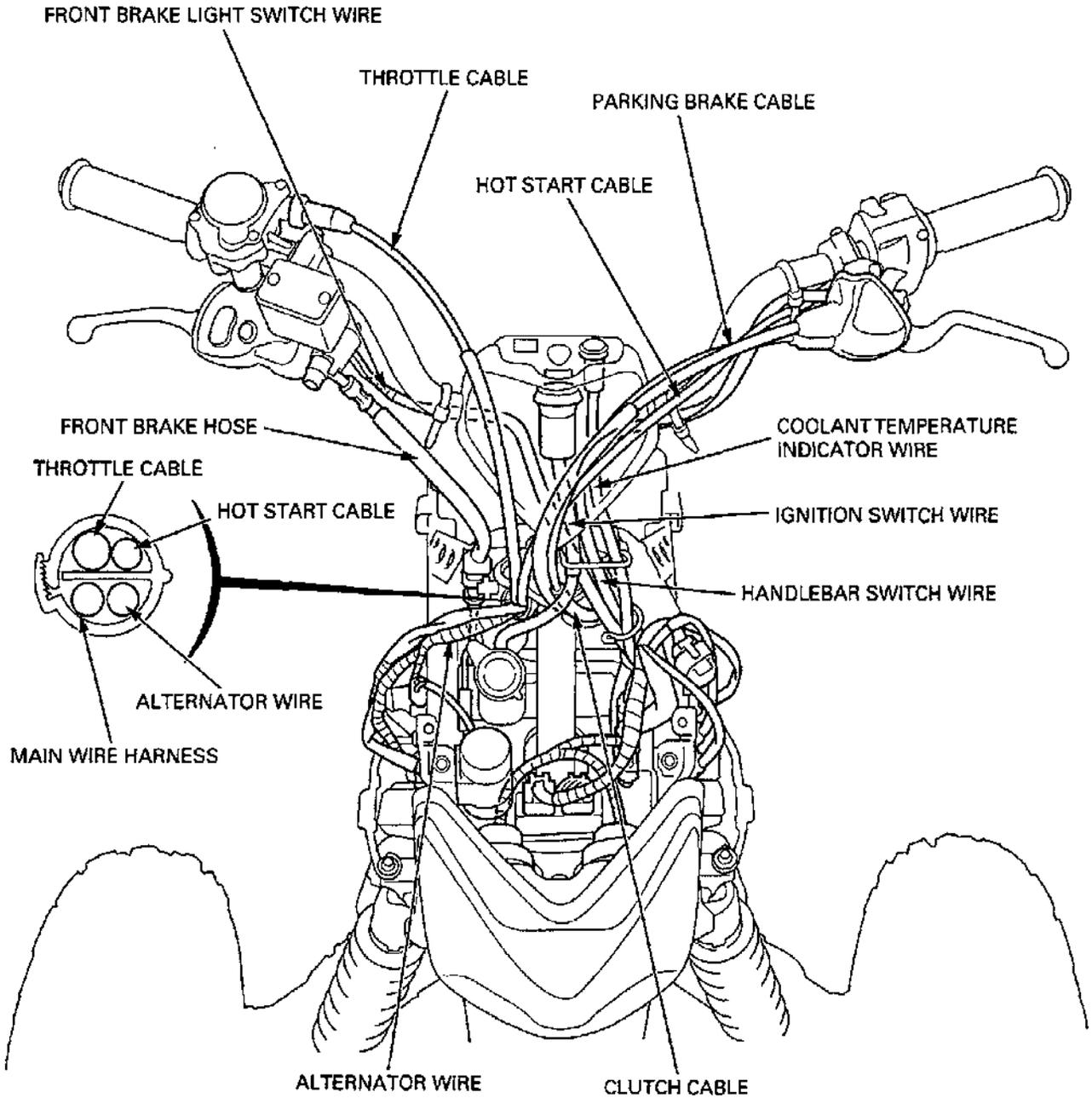
GENERAL INFORMATION

LOCATION	MATERIAL	REMARKS
Handlebar grip rubber inside	Honda bond A or Pro Honda Hand Grip Cement (U.S.A. only) or equivalent	
Front brake lever-to-master piston contacting area Front brake lever pivot Front brake caliper pin sliding surface Front brake caliper bracket pin sliding surface Rear brake caliper stay sliding surface Rear brake master piston-to-push rod contacting area Rear brake caliper pin sliding surfaces Rear brake caliper parking brake shaft sliding surface	Silicone grease	
Brake master piston and cup Brake caliper piston and seal Rear brake reservoir hose joint O-ring	DOT4 brake fluid	
Rear axle inner and outer lock nut threads Rear caliper stay stopper bolt threads Rear brake reservoir hose joint screw threads	Locking agent	

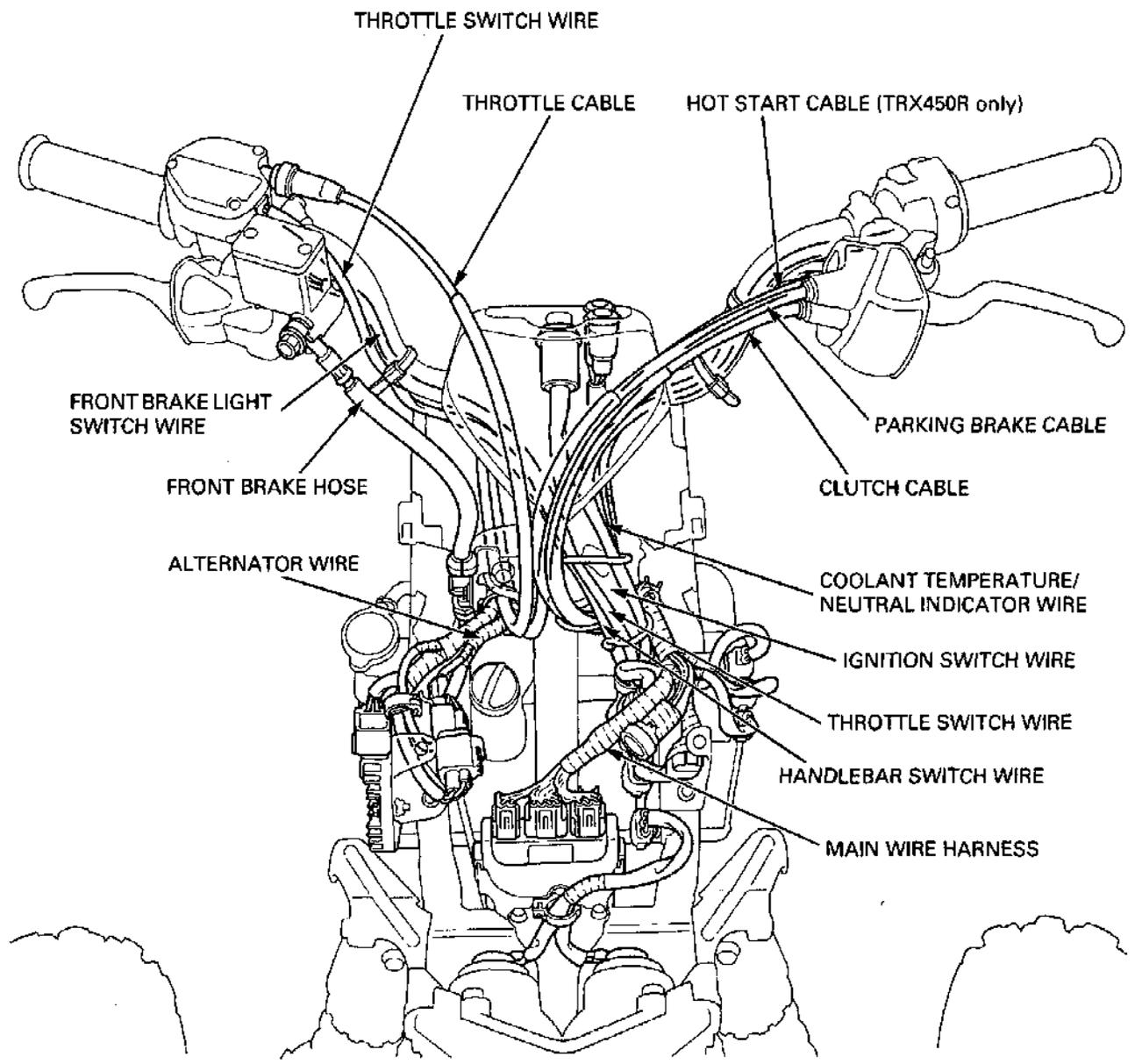
GENERAL INFORMATION

CABLE & HARNESS ROUTING

'04 - '05:

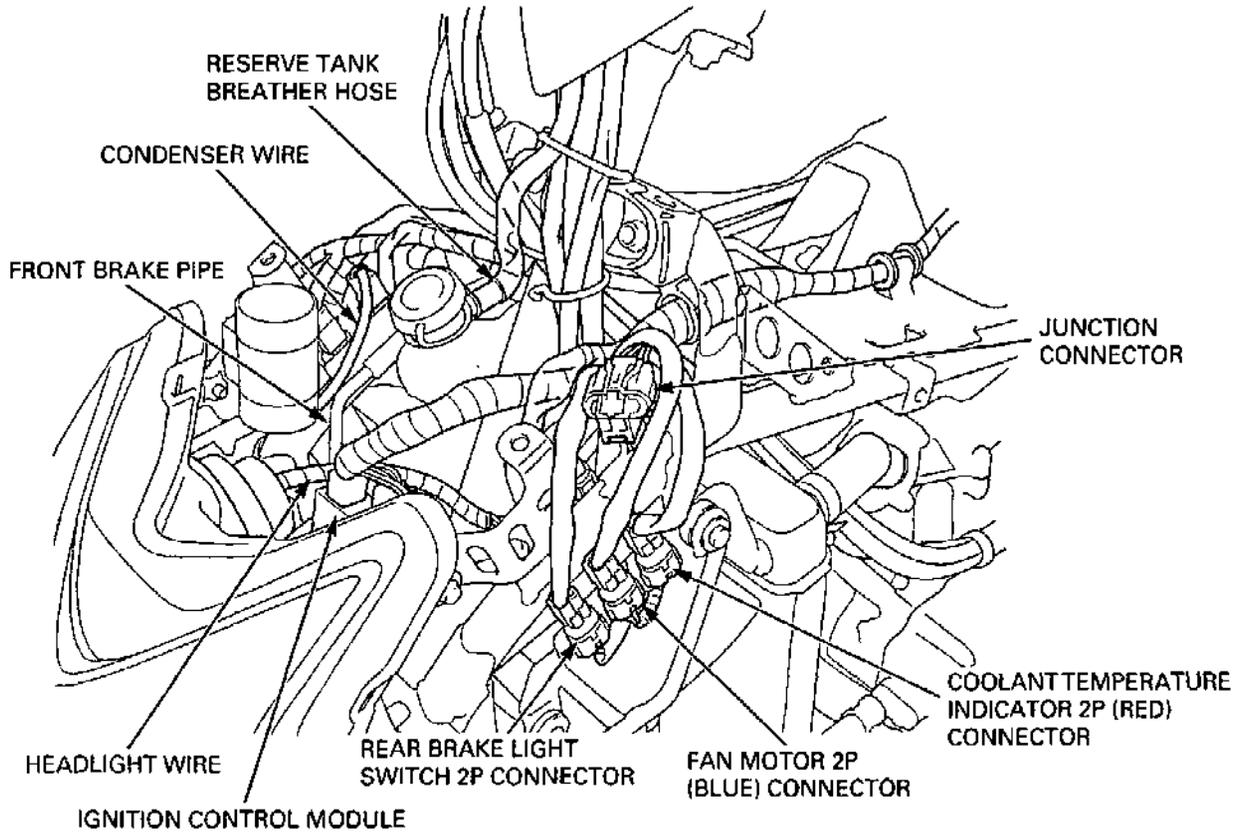


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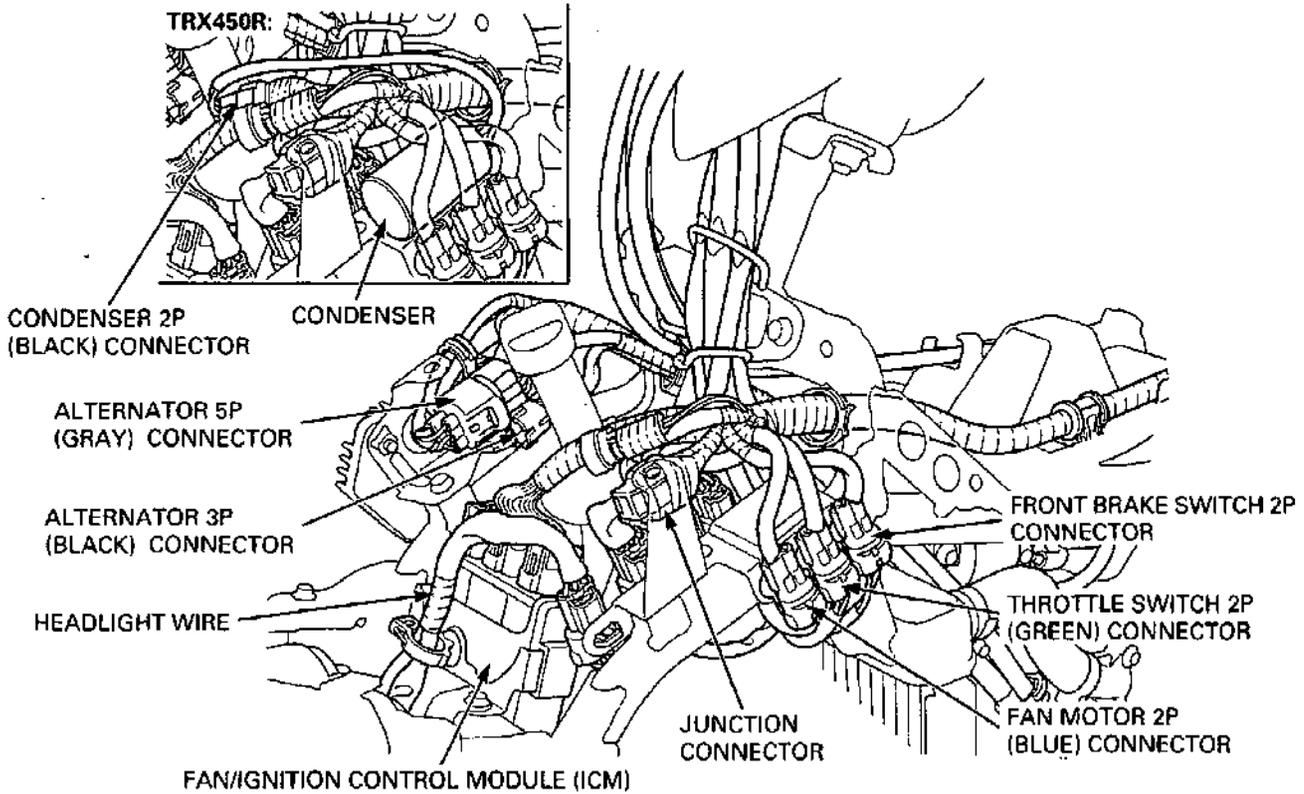


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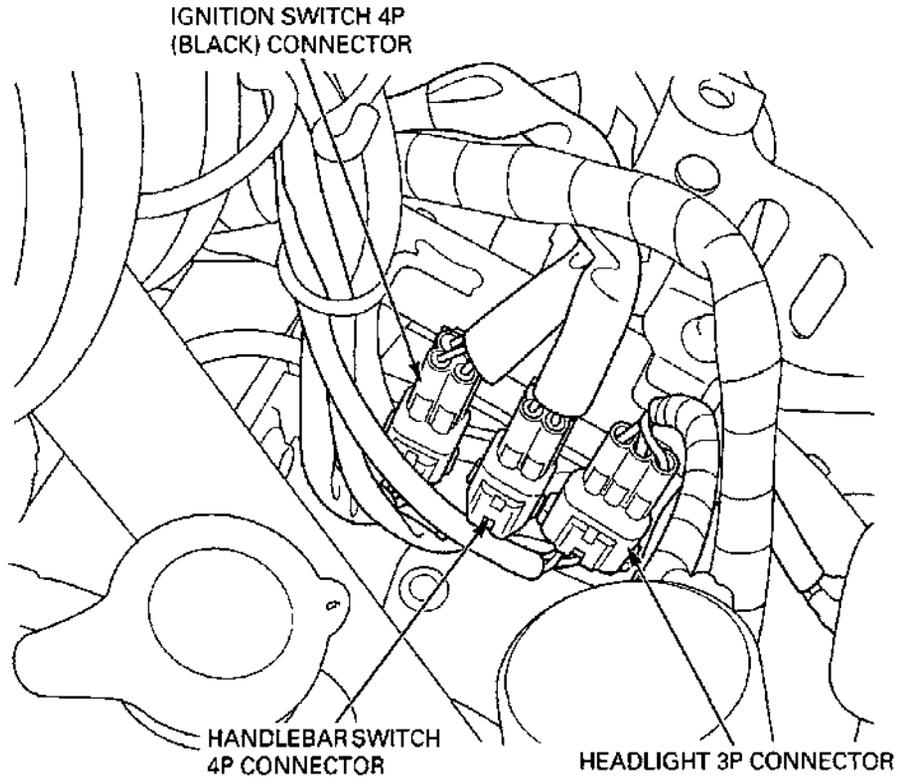
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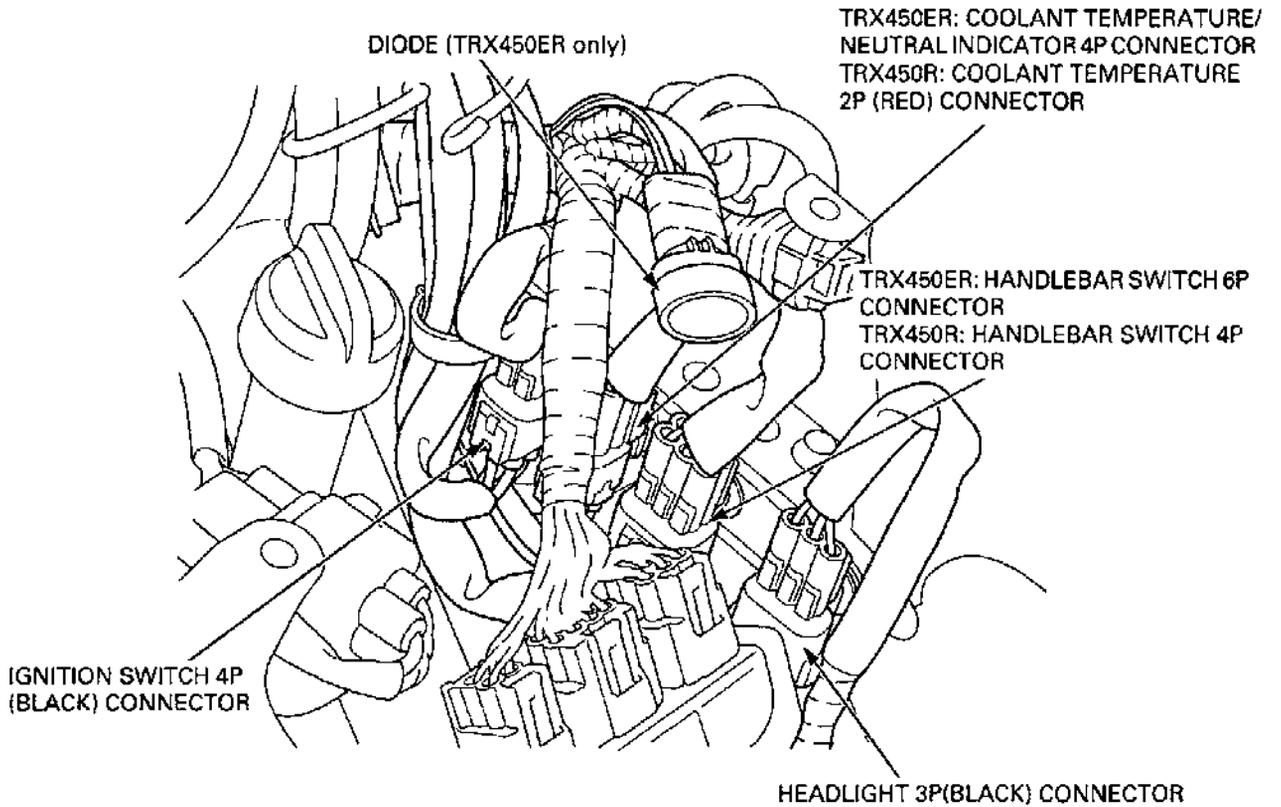
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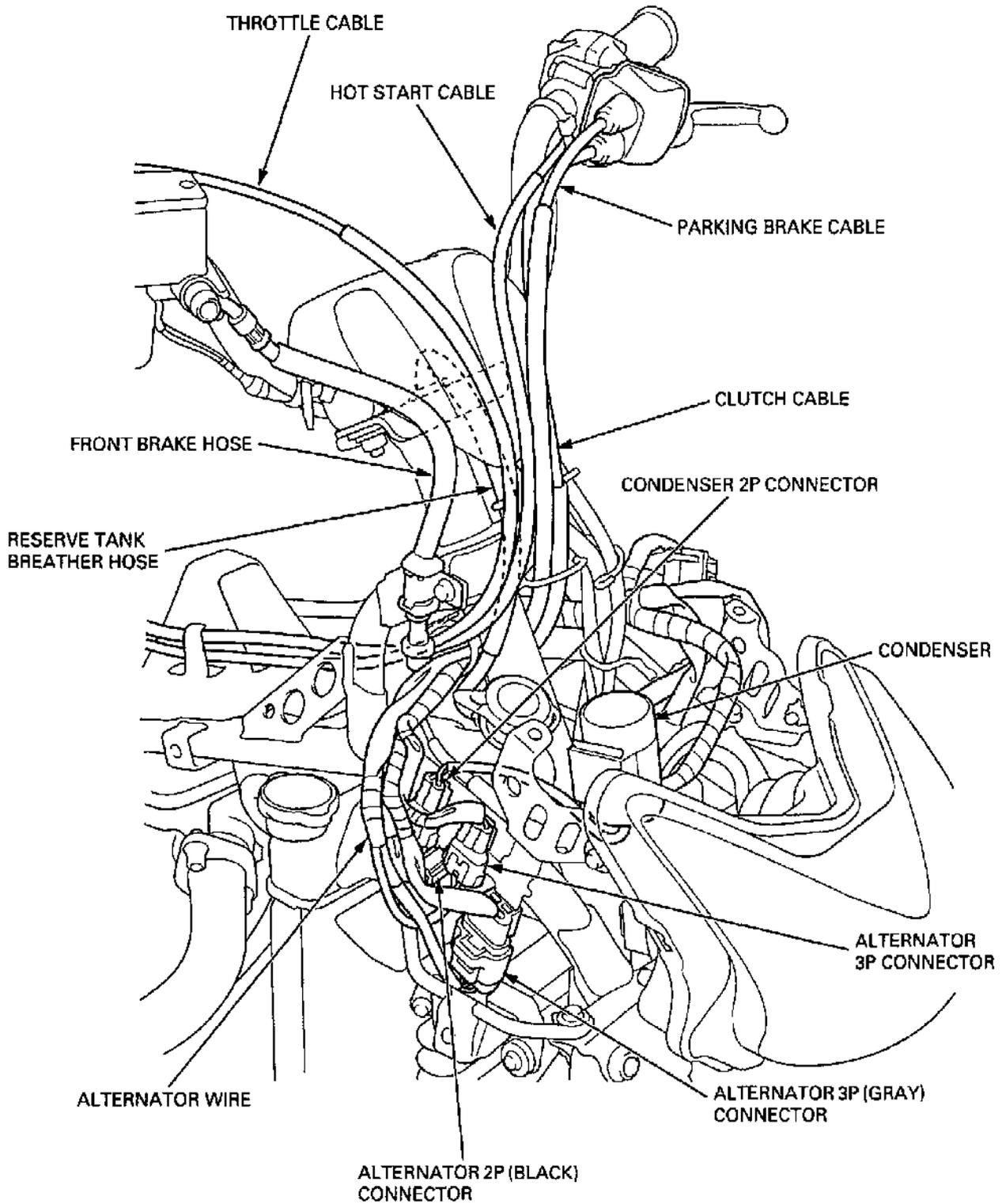


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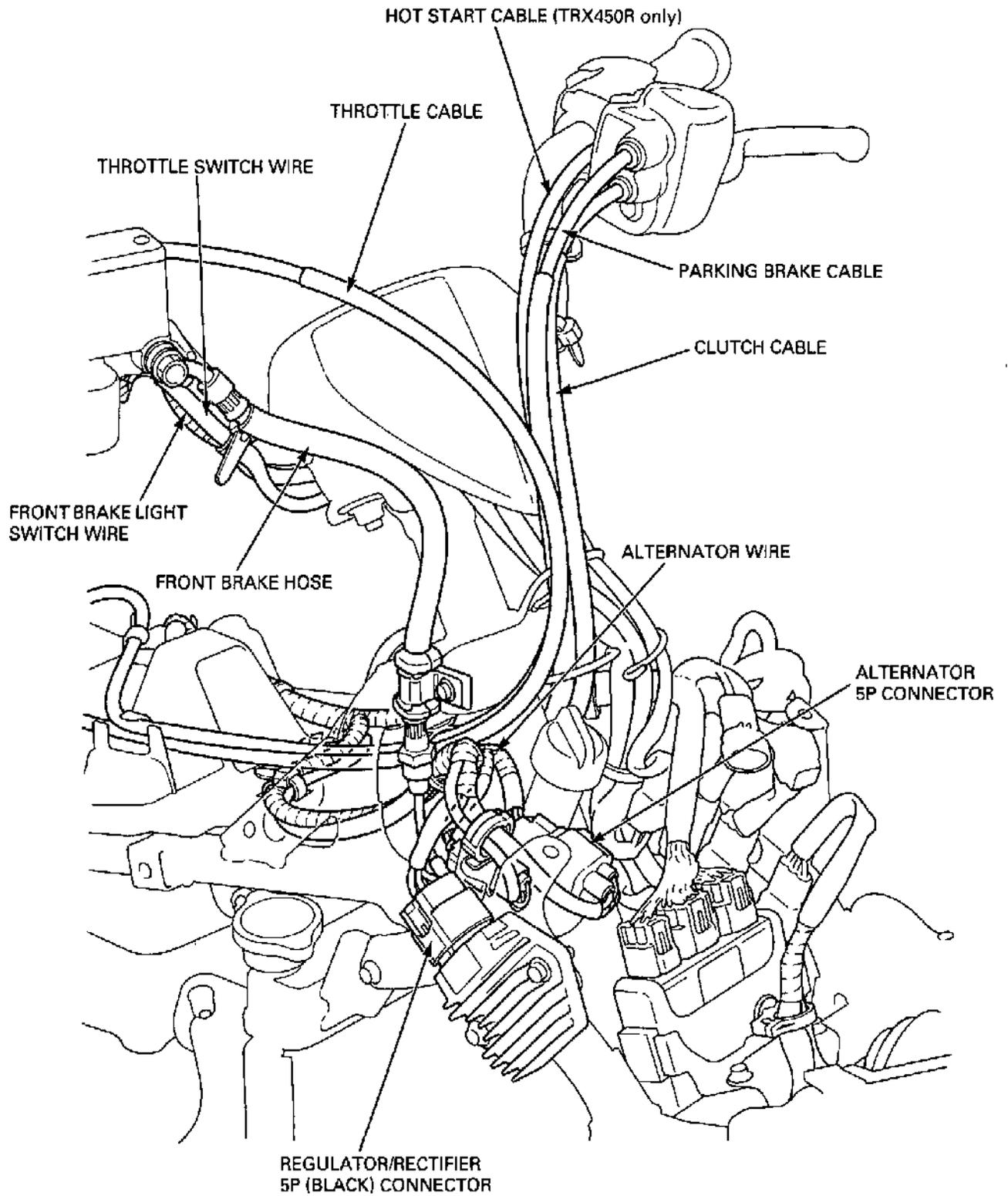


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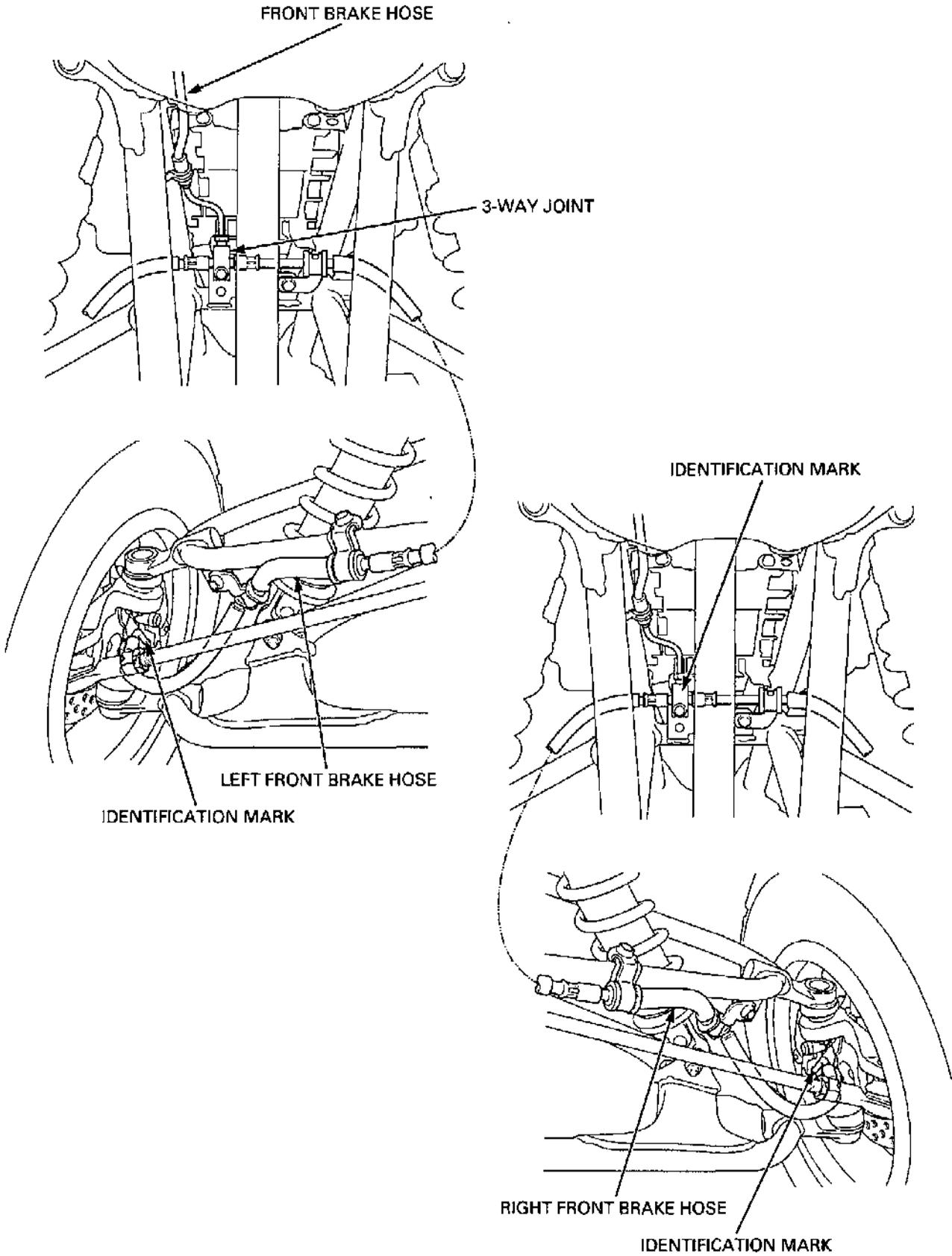
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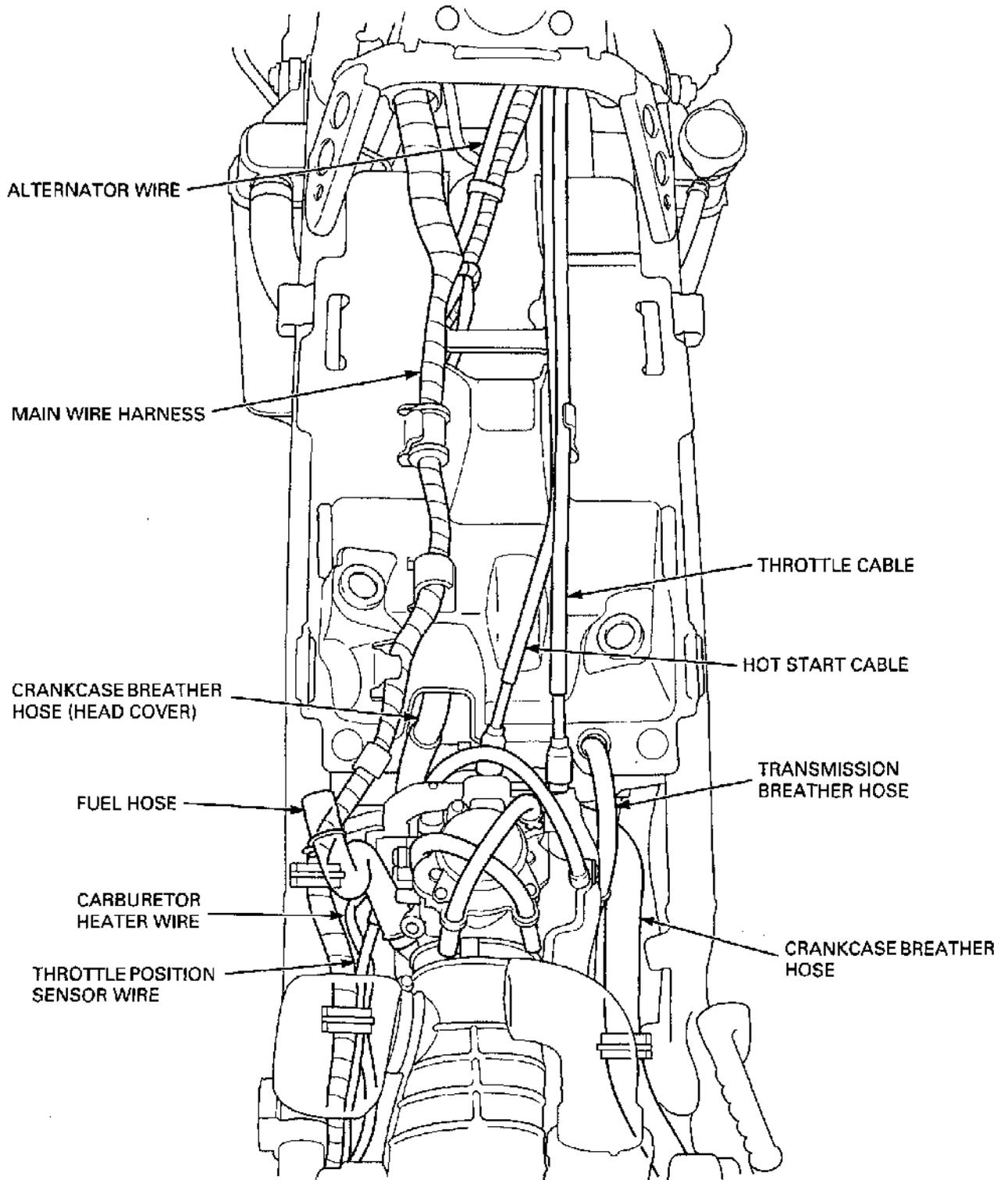
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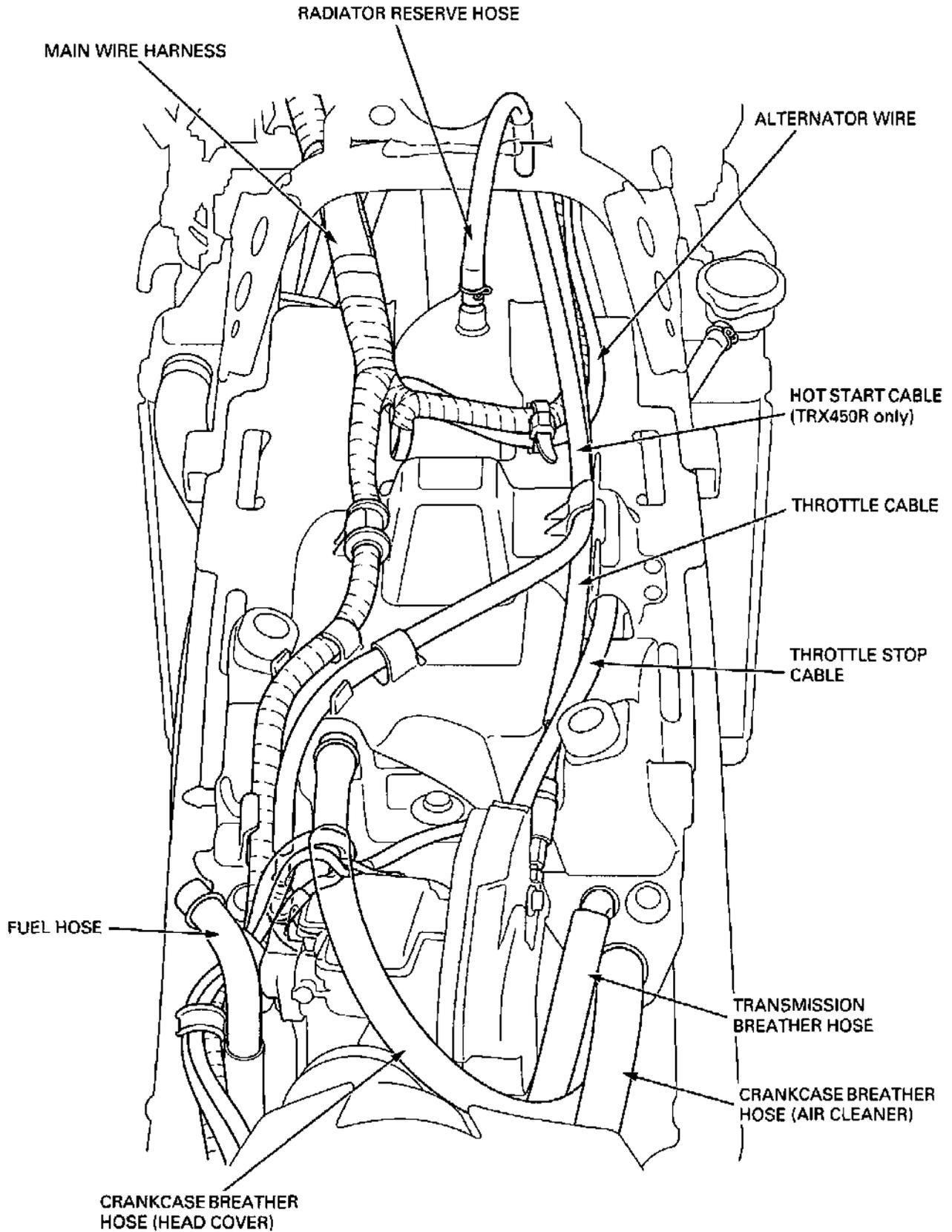


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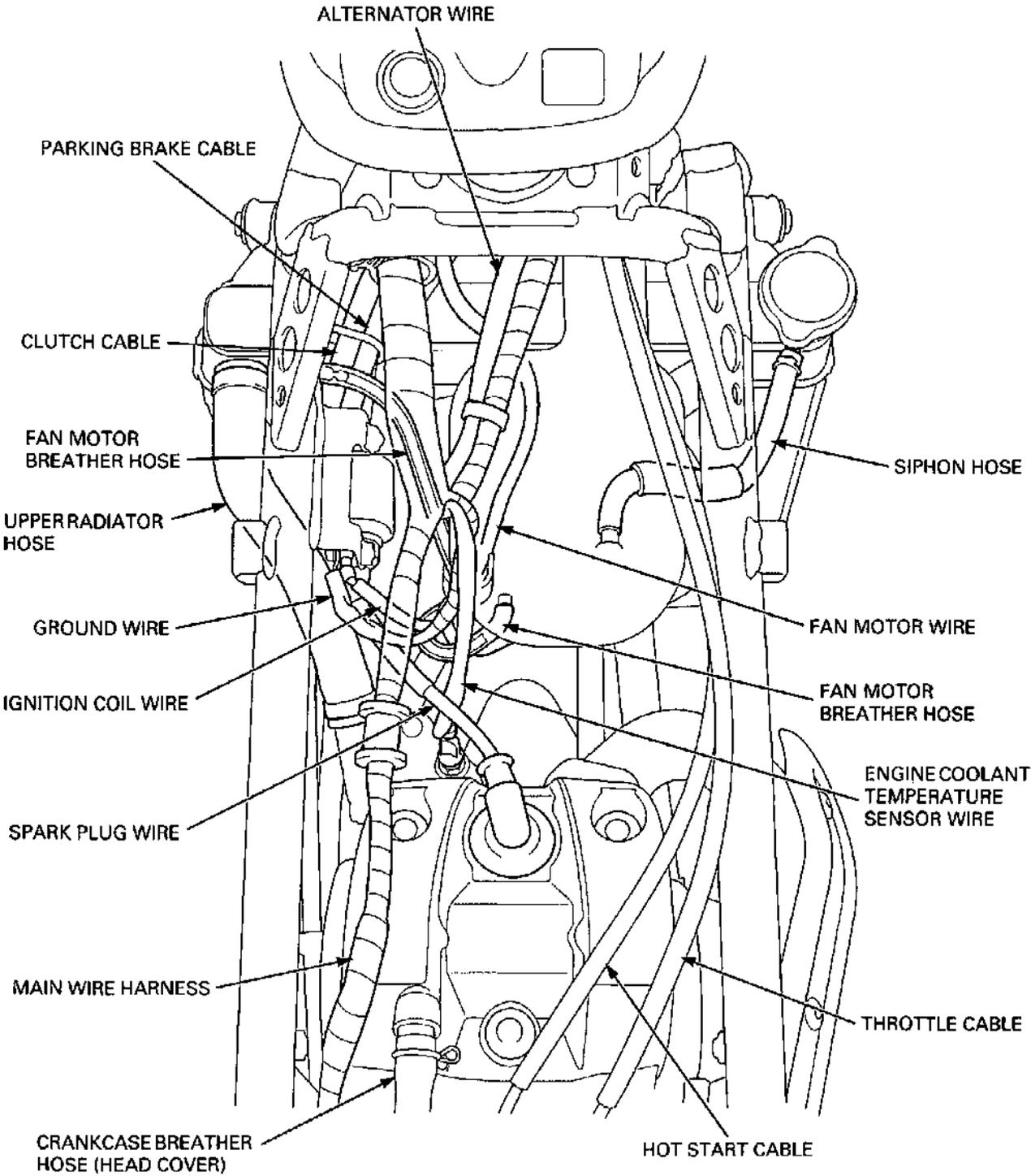


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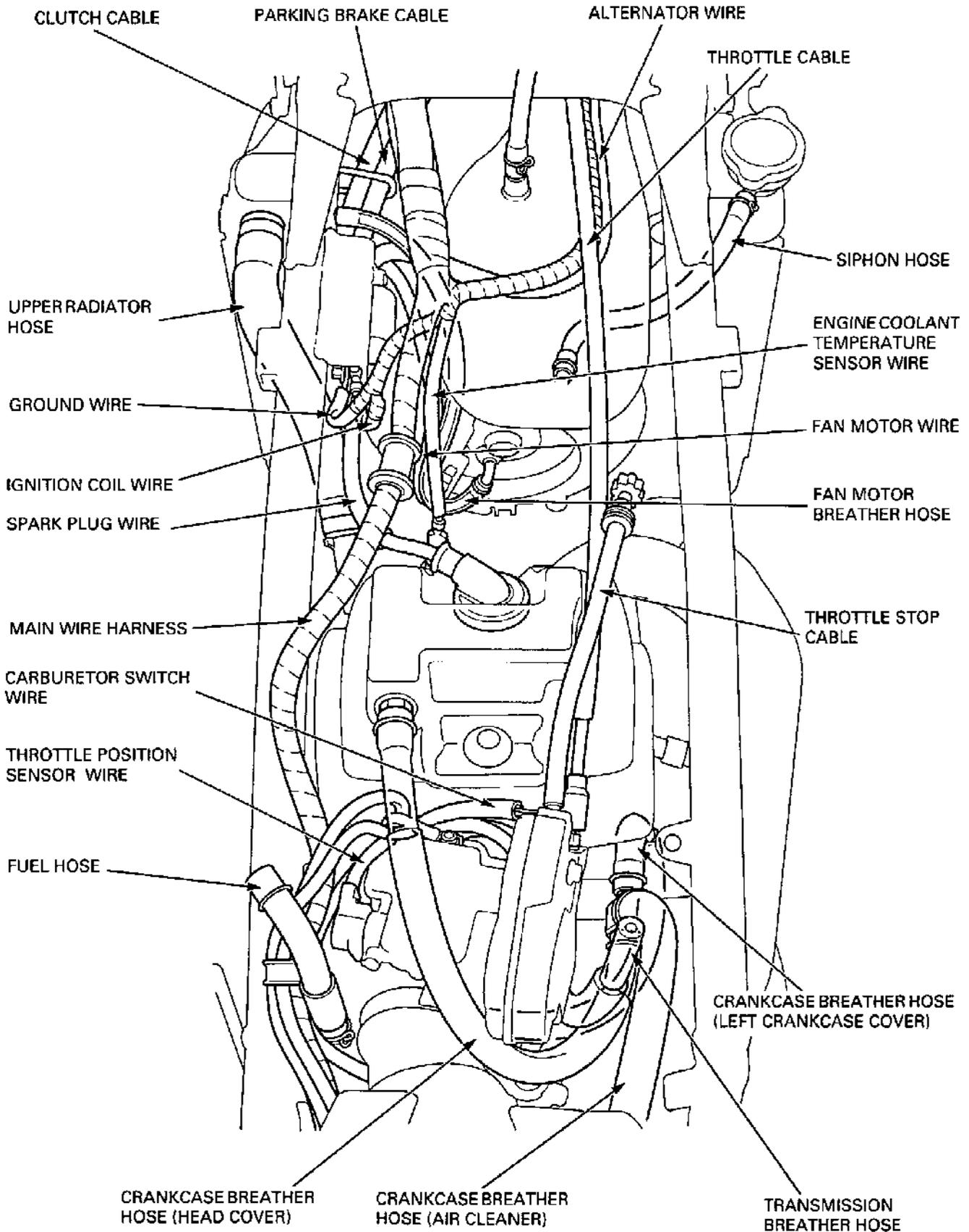


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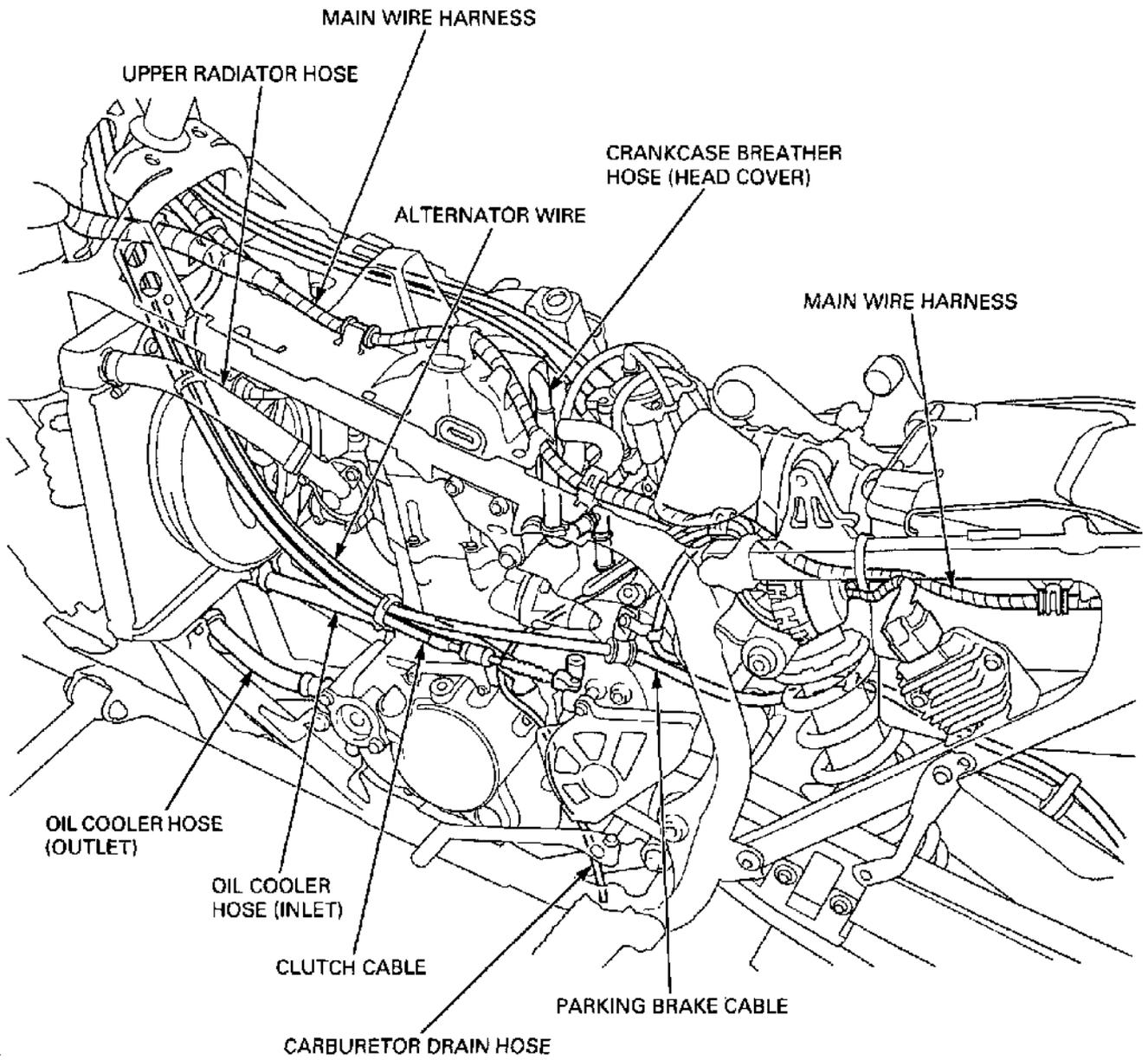


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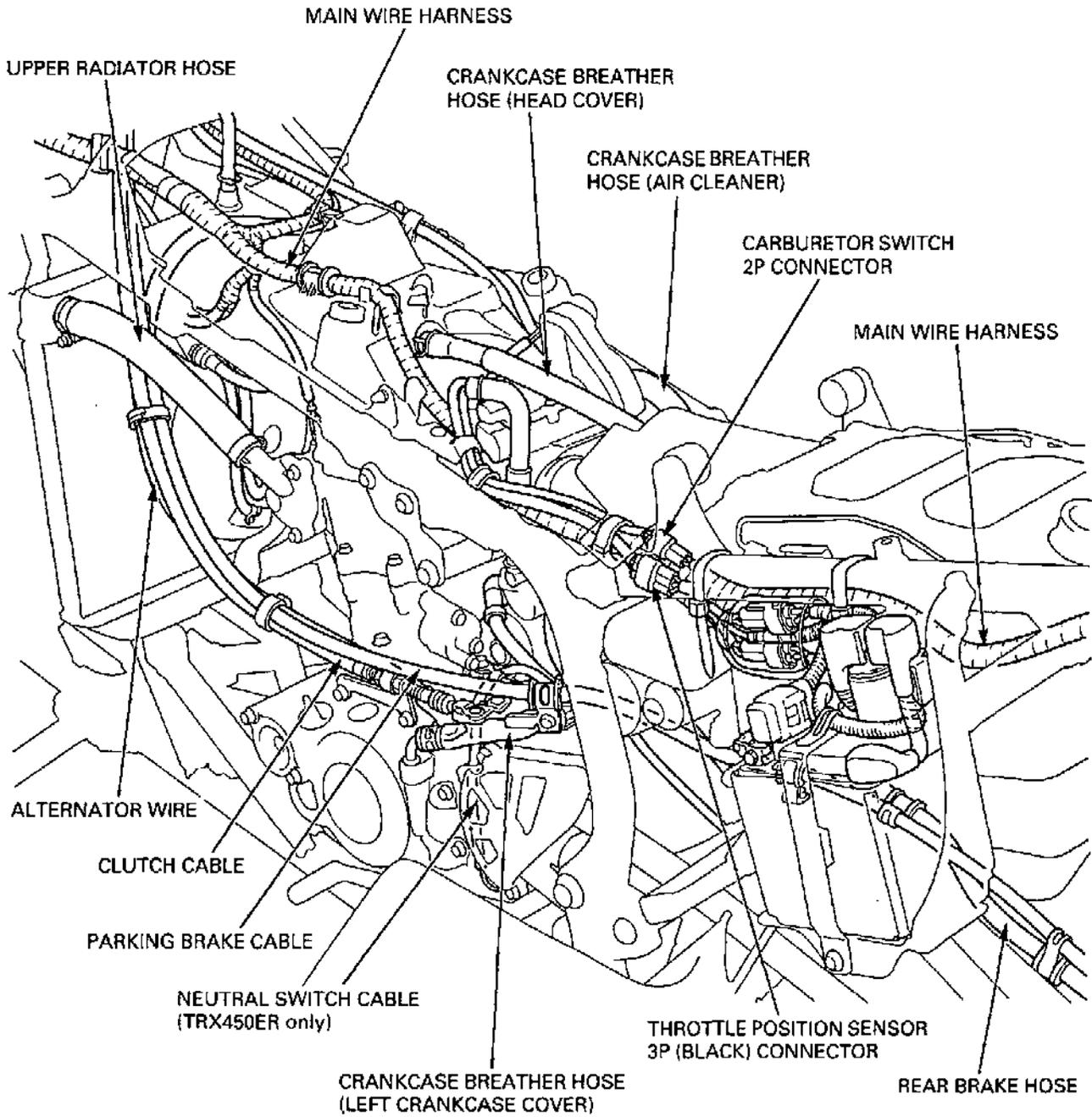


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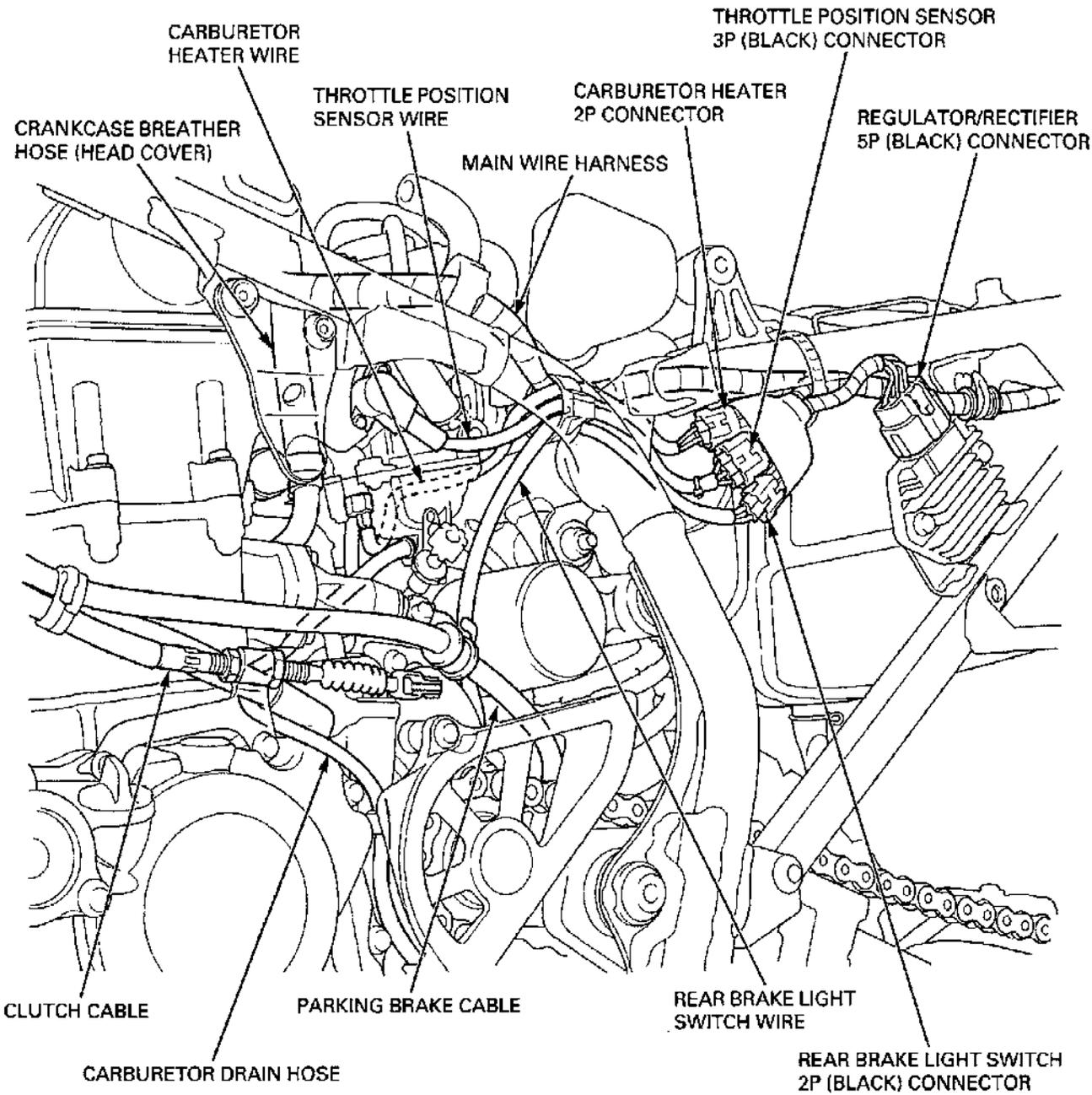


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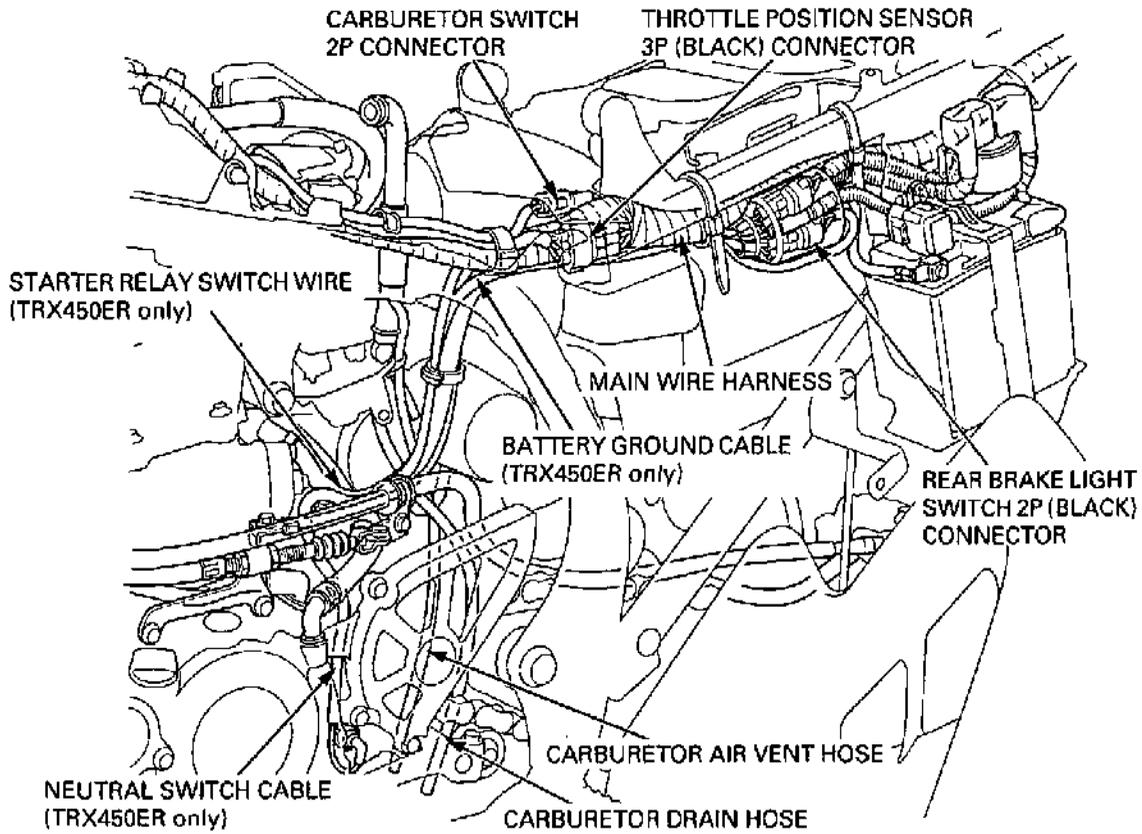


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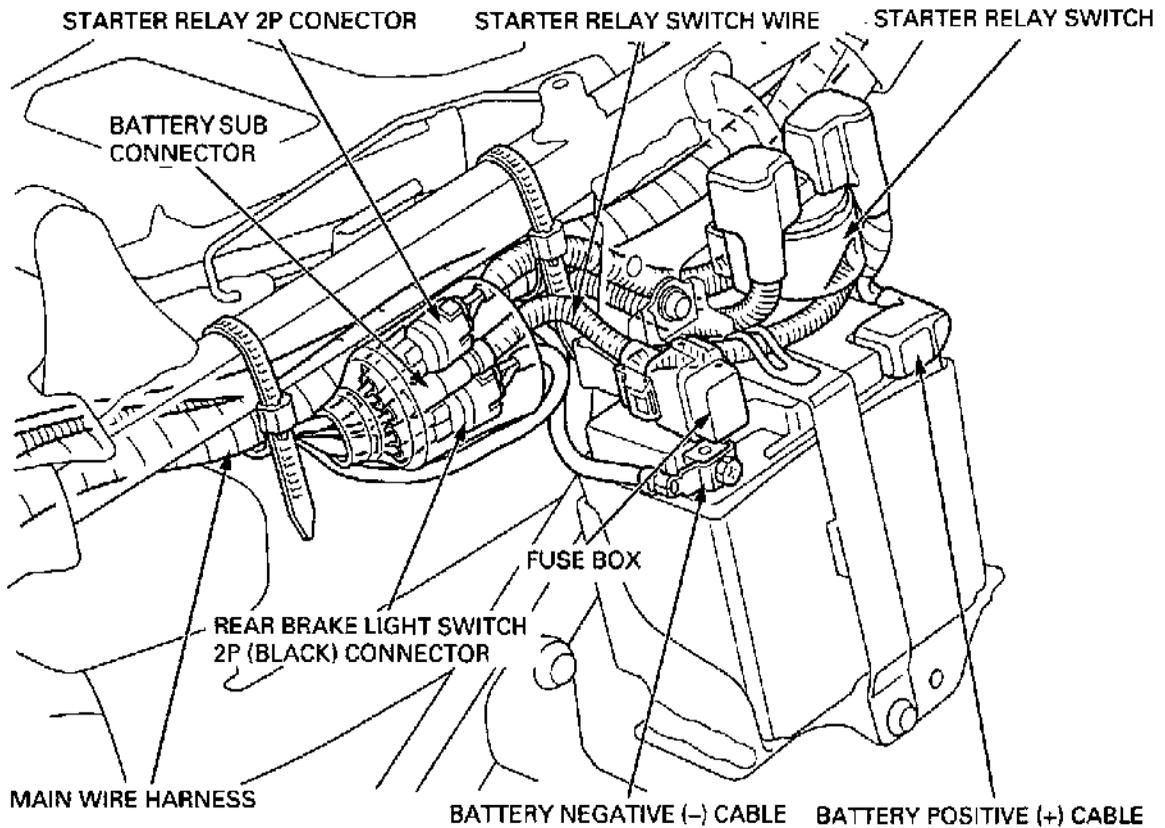


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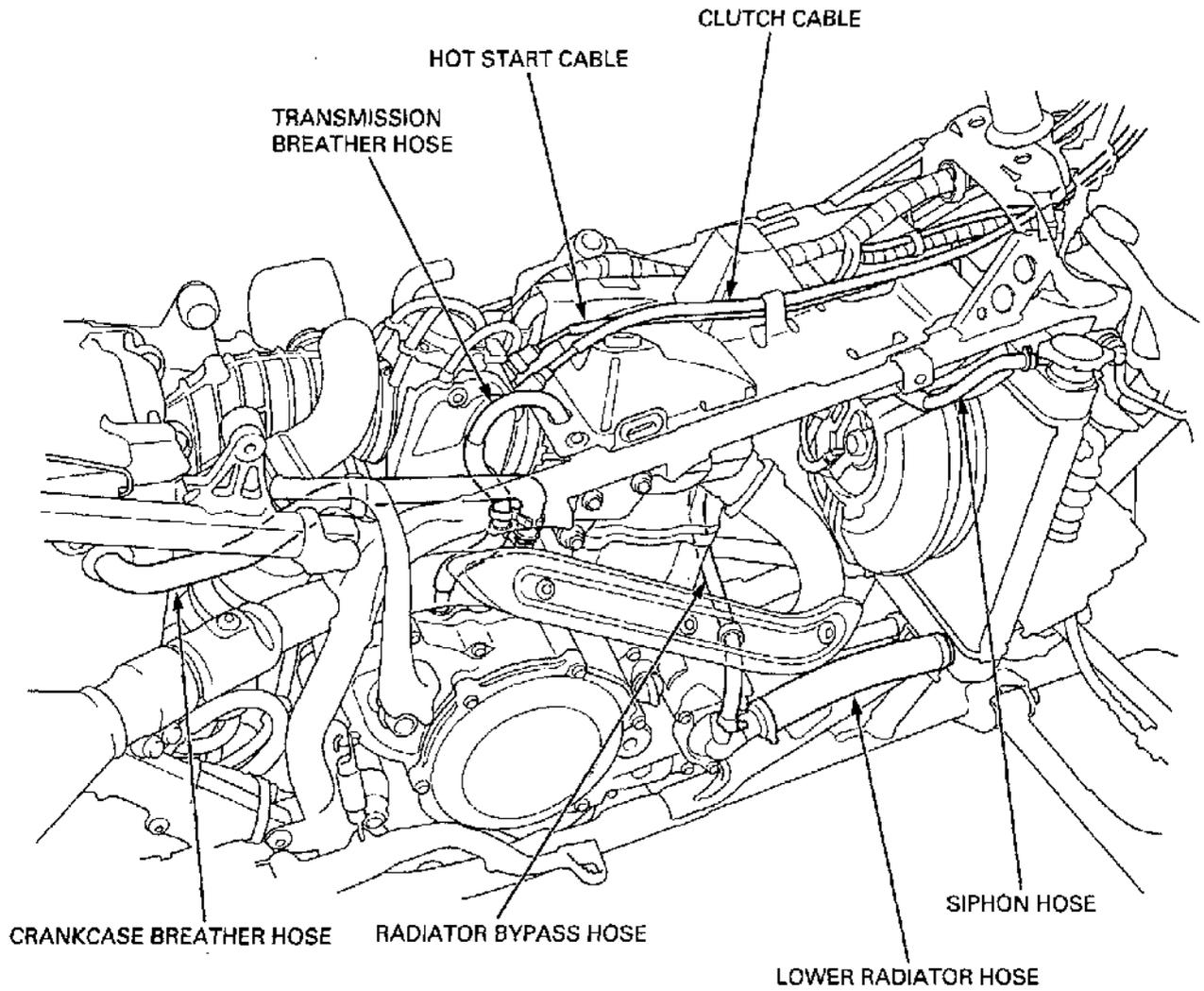
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TRX450ER:

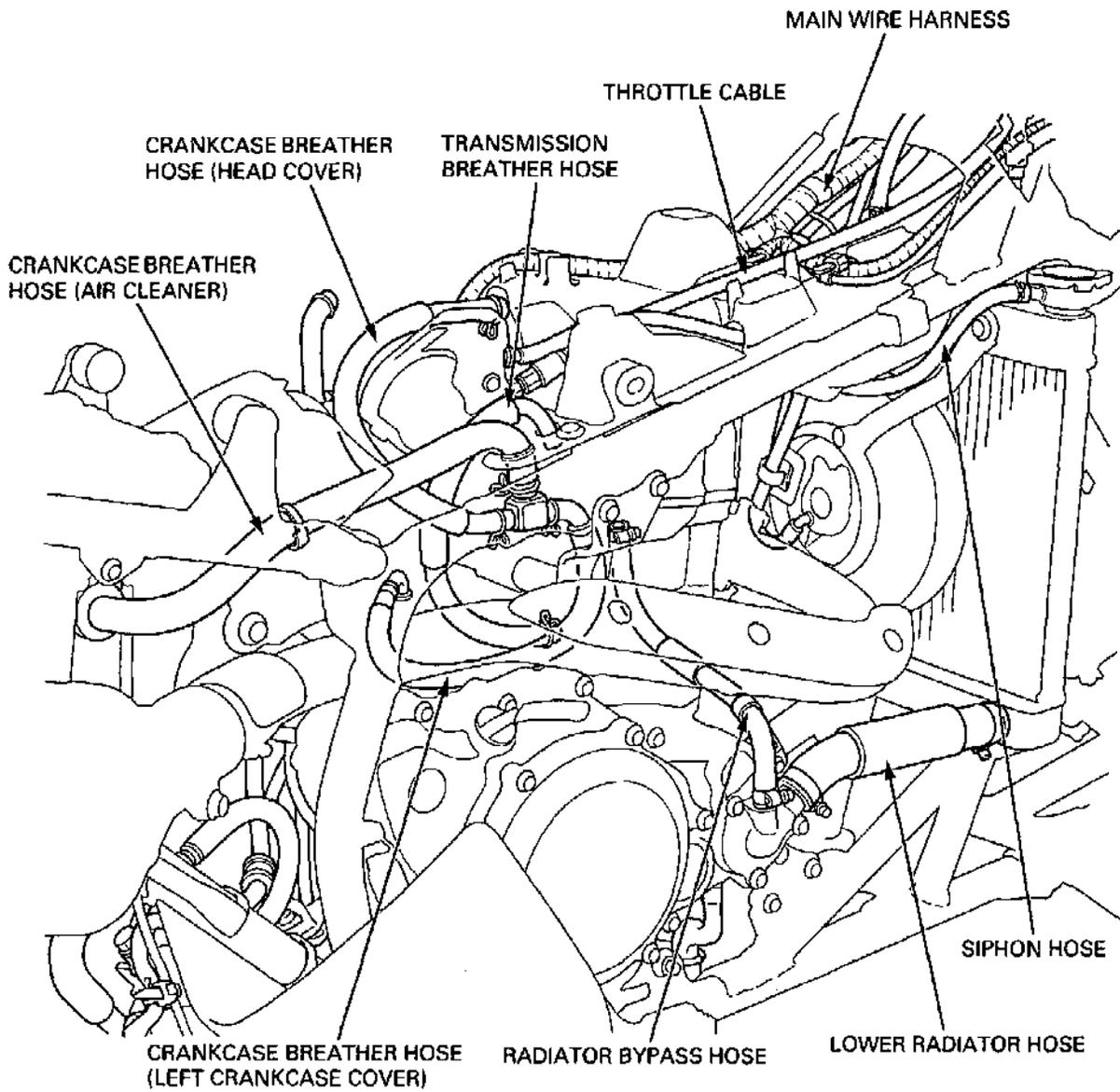


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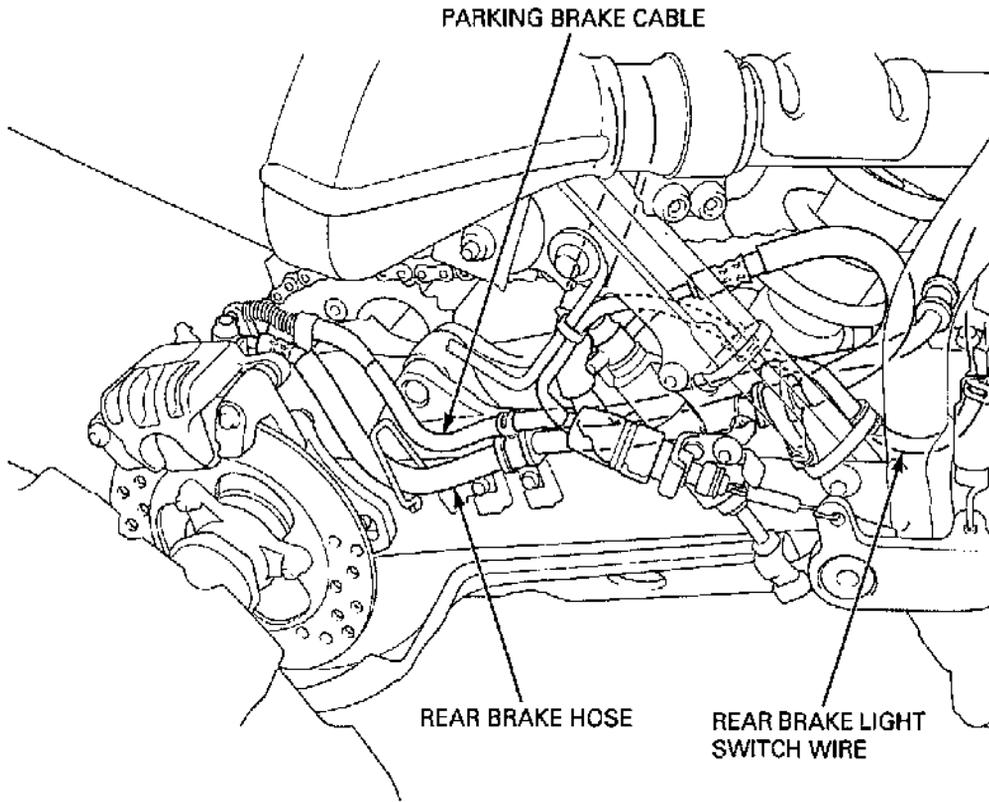


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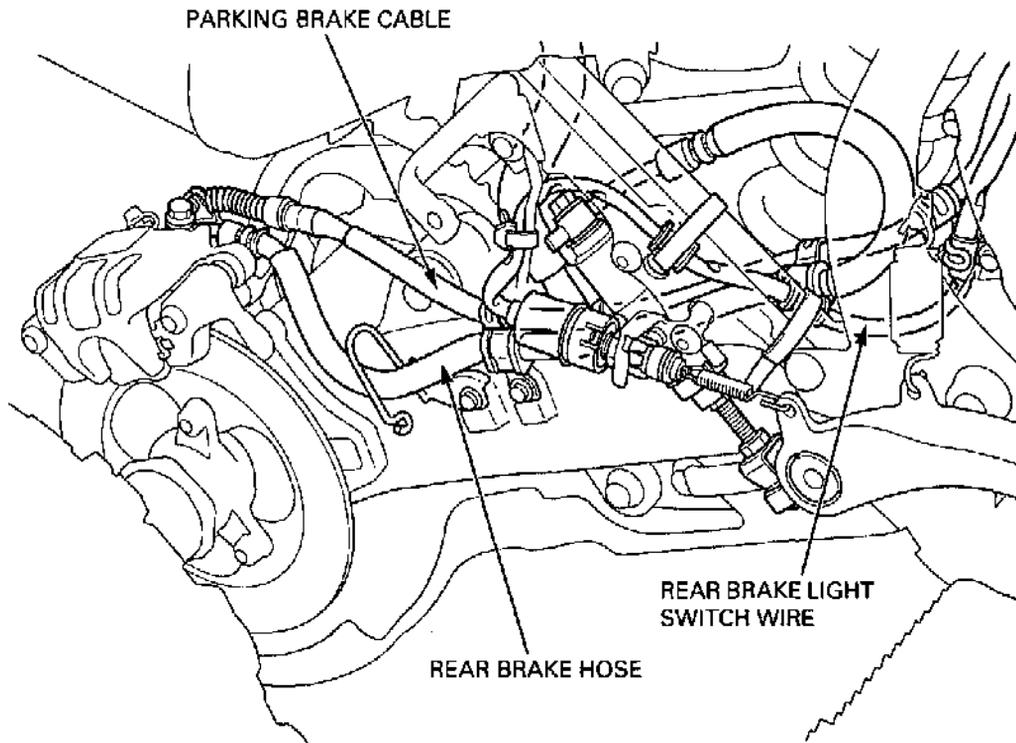
After '05:



'04 - '05:

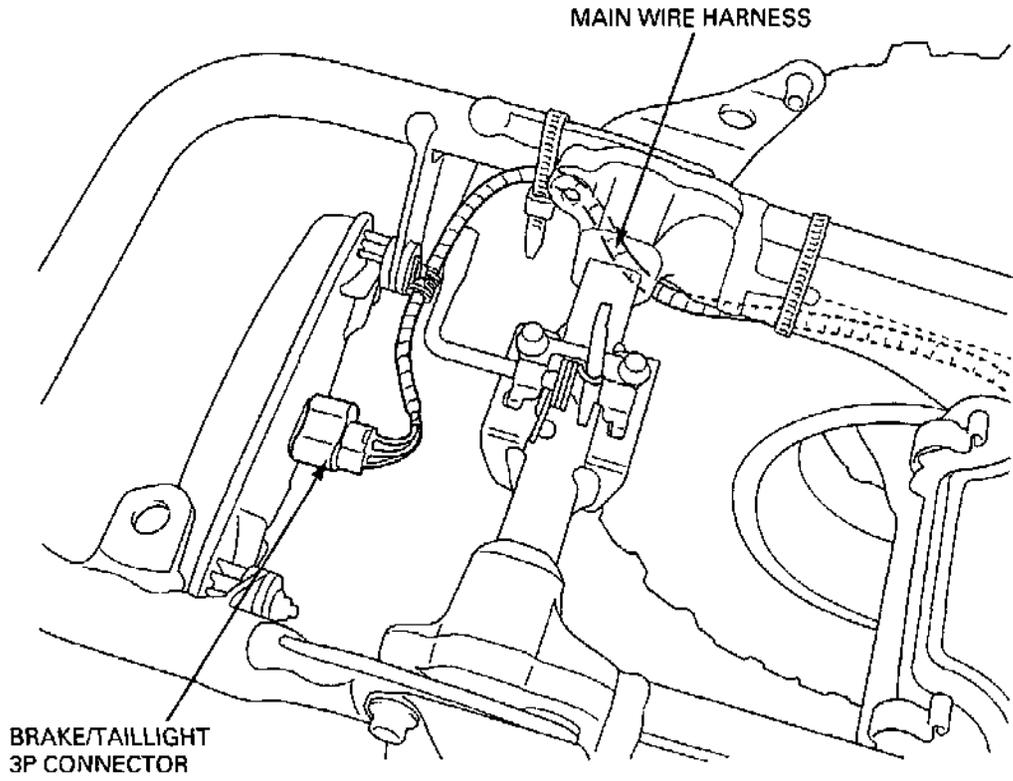


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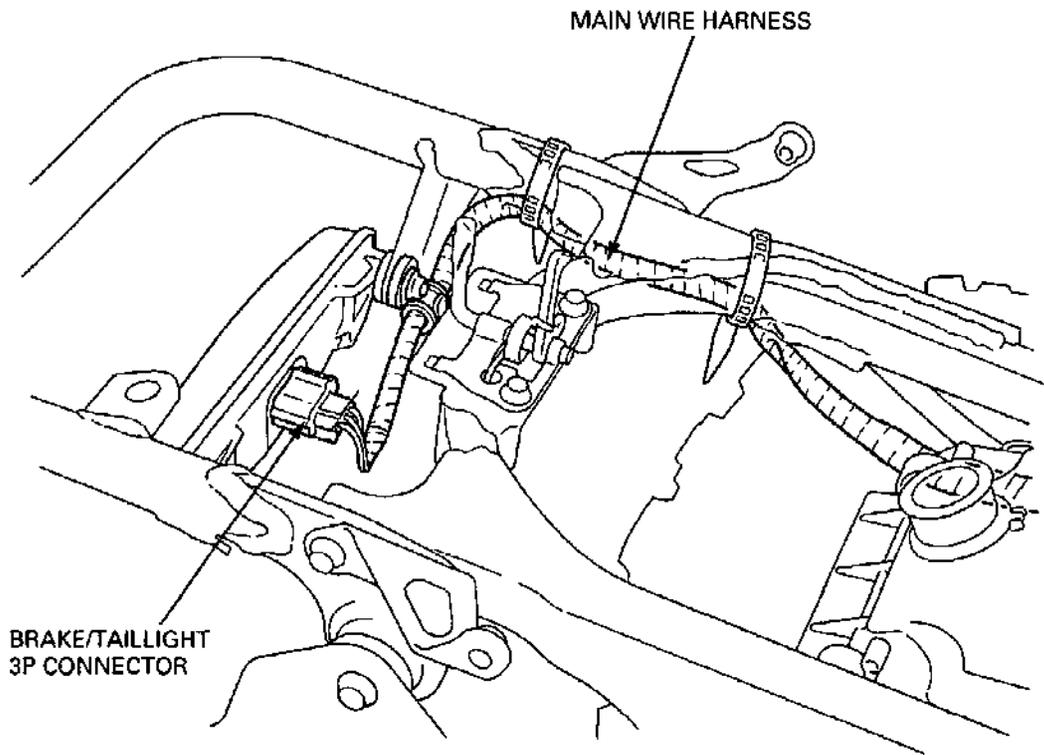


GENERAL INFORMATION

'04 - '05:



After '05:



EMISSION CONTROL SYSTEMS

The U.S. Environmental Protection Agency (EPA), and the California Air Resources Board (CARB) require that off-road motorcycle or ATV comply with applicable exhaust emissions standards during its useful life, when operated and maintained according to the instruction provided.

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 subjected to sunlight. Carbon monoxide does not react in the same way, but it is toxic.

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

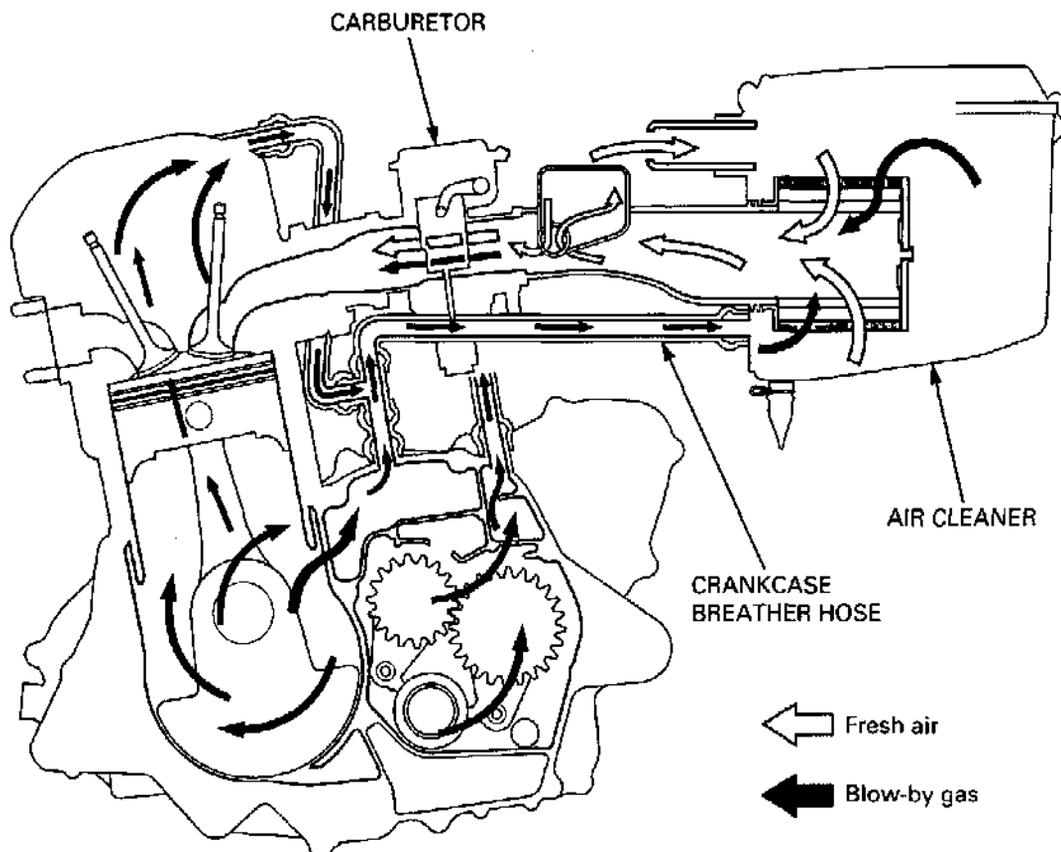
EXHAUST EMISSION CONTROL SYSTEM

The exhaust emission control system is composed of lean carburetor setting, no adjustments should be made except for high altitude setting and idle speed adjustment with the throttle stop screw. The exhaust emission control system is separate from the crankcase emission control system.

CRANKCASE EMISSION CONTROL SYSTEM

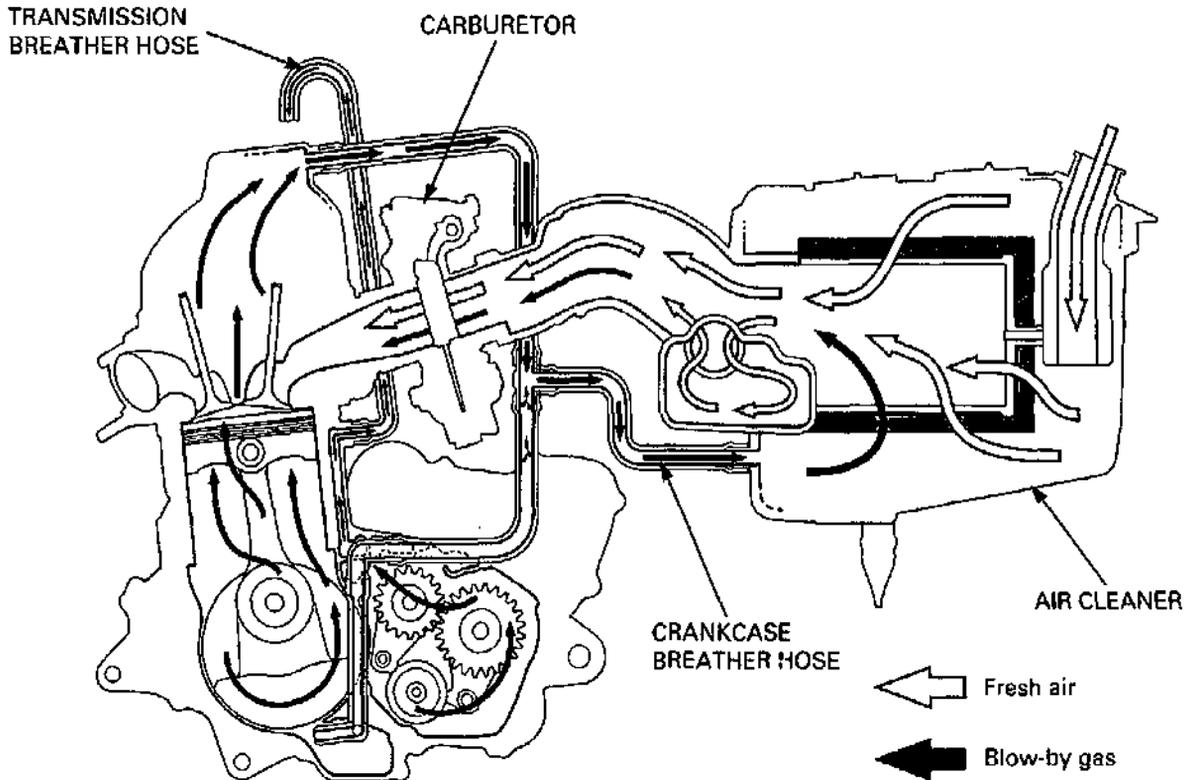
The engine is equipped with a closed crankcase system to prevent discharging crankcase emissions into the atmosphere. Blow-by gas is returned to the combustion chamber through the air cleaner and carburetor.

'04 - '05:



GENERAL INFORMATION

After '05:



SERVICING THE HONDA

U.S.A. Only

Maintenance, replacement or repair of the emission control devices and systems may be performed by any motorcycle/ATV repair establishment or individual using parts that are "certified" to EPA standards.

PROHIBITED ACTIONS

The following prohibitions apply to everyone with respect to the engine's emission control system.

You may not remove or disable any device or element of design that may affect an engine's emission levels. This restriction applies before and after the engine is placed in service.

Vehicles that are used only for competition are exempt from this prohibition.

NOISE EMISSION CONTROL SYSTEM

TAMPERING WITH THE NOISE CONTROL SYSTEM IS PROHIBITED: State laws prohibit, or Canadian provincial laws may prohibit 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; or (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 FOLLOWING ACTS:

1. Removal of, or puncturing 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.

REBUILT ENGINE

When you rebuild your engine including a major overhaul in which you replace the engine's pistons or power assemblies or make other changes that significantly increase the service life of the engine, your Honda will continue to comply with all emissions regulations if you:

- Make sure you are technically qualified to rebuild the engine and have the proper tools
- Use only Genuine Honda parts or equivalents
- Make sure to maintain all specifications as described in this Service Manual