2004–2014

HONDA

SERVICE MANUAL

TRX450R/ER

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.

CONTENTS

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.

	Replace the part(s) with new one(s) before assembly.
	Use the recommended engine oil, unless otherwise specified.
	Use molybdenum oil solution (mixture of the engine oil and molybdenum grease in a ratio of 1:1)
	Use multi-purpose grease (lithium based multi-purpose grease NLGI #2 or equivalent).
	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
	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
	Use silicone grease.
	Apply a locking agent. Use a medium strength locking agent unless otherwise specified.
	Apply sealant.
	Use DOT 4 brake fluid. Use the recommended brake fluid unless otherwise specified.
	Use fork or suspension fluid.

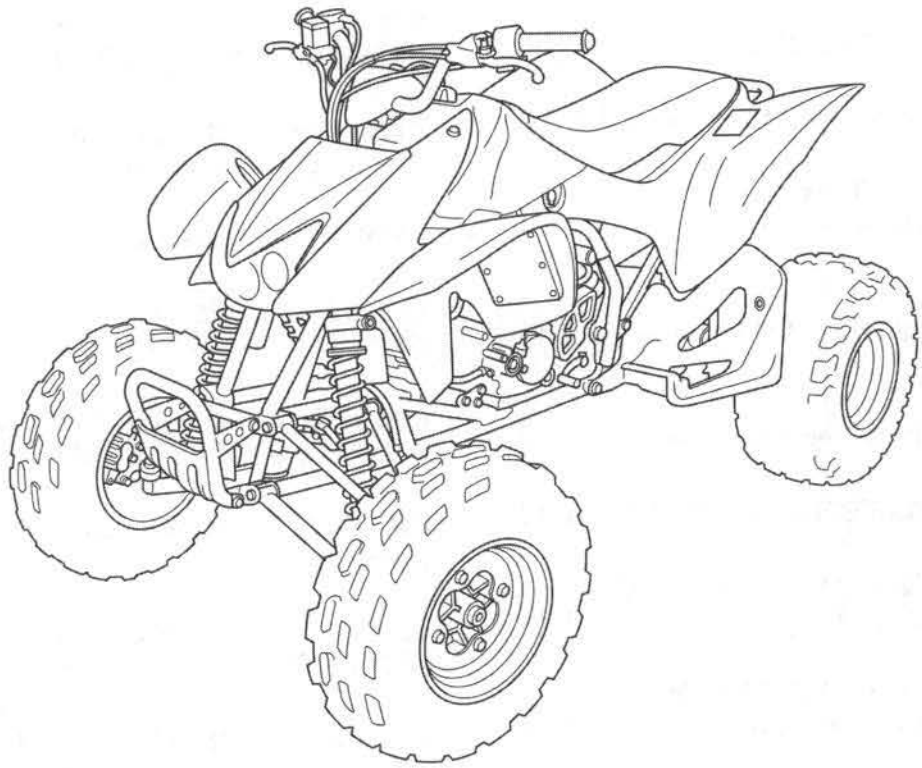
1. GENERAL INFORMATION

SERVICE RULES

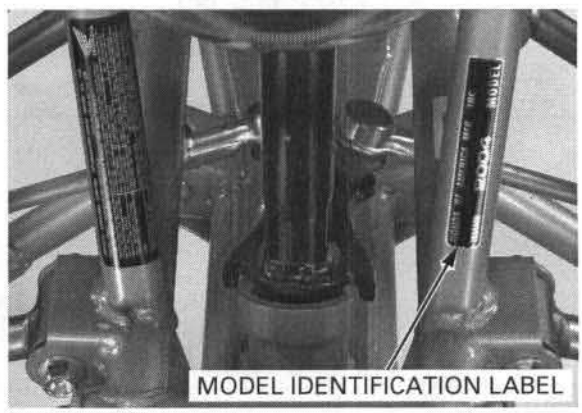
1. Use genuine Honda or Honda-recommended parts and lubricants or their equivalents. Parts that do not meet Honda's design specifications may cause damage to the vehicle.
2. Use the special tools designed for this product to avoid damage and incorrect assembly.
3. Use only metric tools when servicing 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 1-29).

MODEL IDENTIFICATION ('04 – '07)

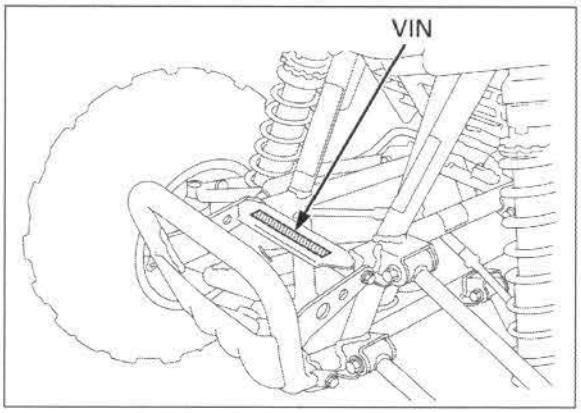
'04 – '05 model shown, After '05 model similar



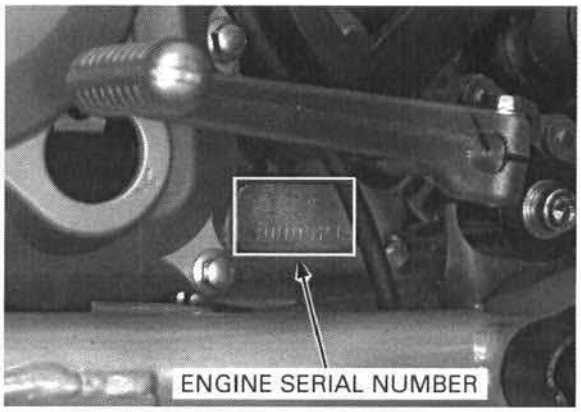
The model identification label is located on the left front frame pipe.



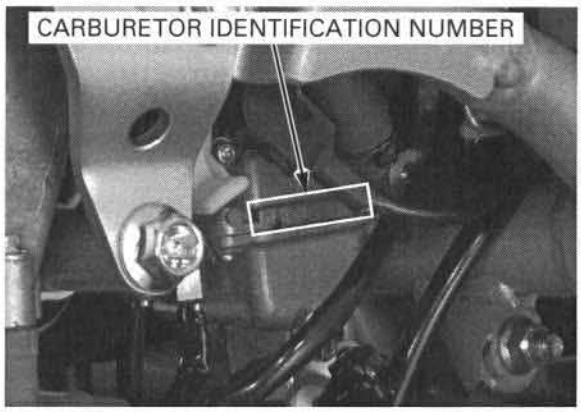
The vehicle identification number (VIN) is stamped on the front side of the frame.



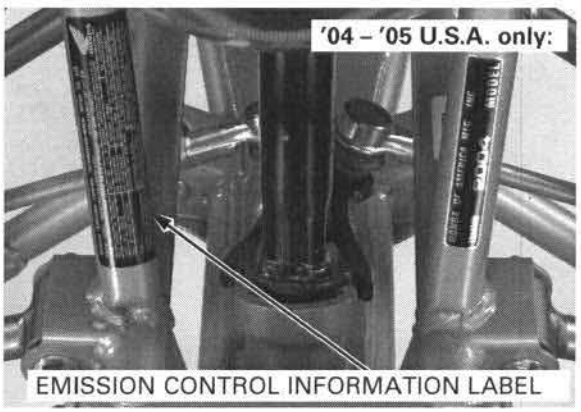
The engine serial number is stamped on the left side of the crankcase.



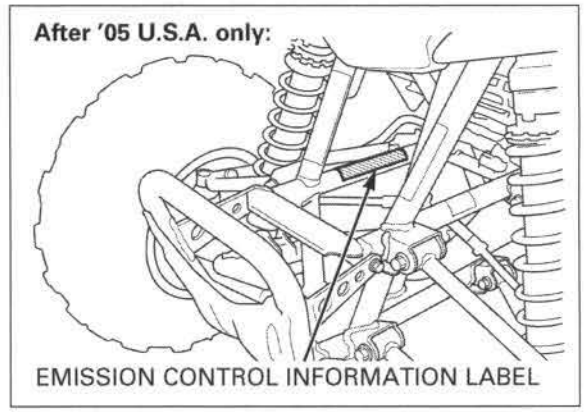
The carburetor identification number is stamped on the left side of the carburetor body.



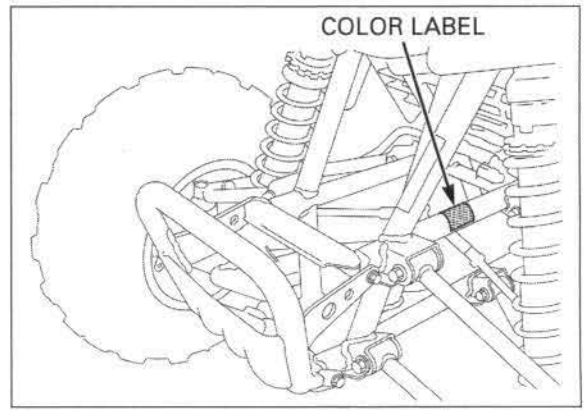
'04 – '05: The Vehicle Emission Control Information Label is attached on the right front frame pipe (U.S.A. only).



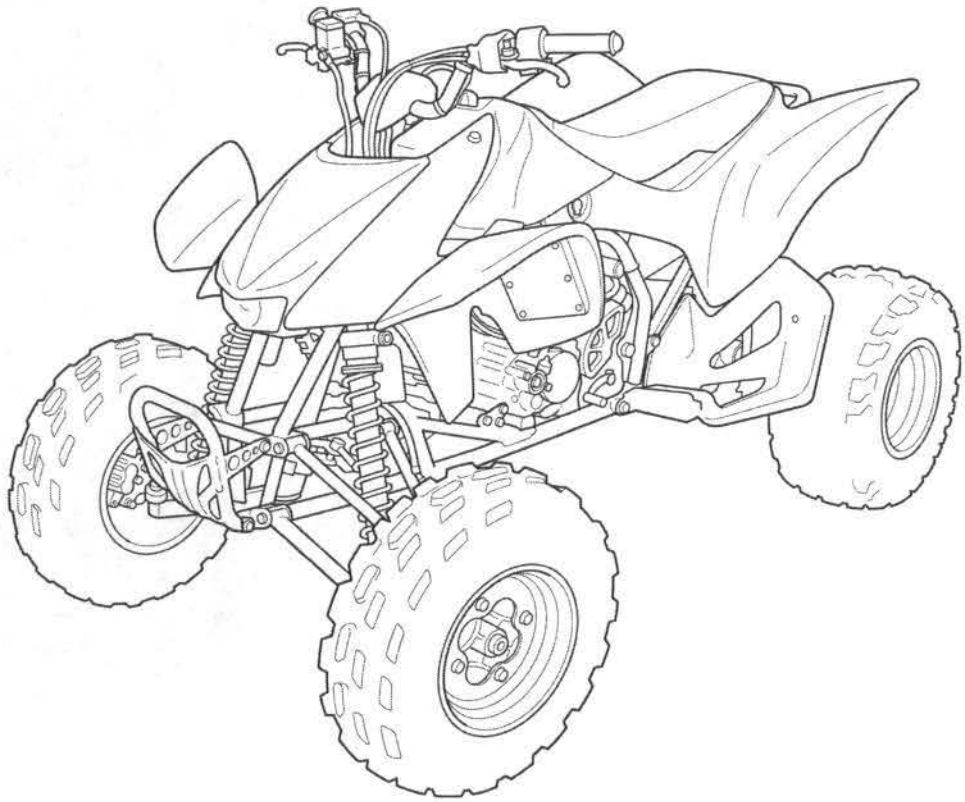
After '05: The Vehicle Emission Control Information Label is attached on the right side of the front frame pipe (U.S.A. only).



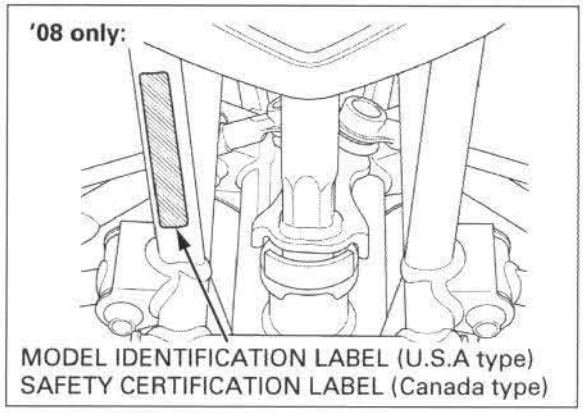
The color label is attached on the left side of the front frame pipe. When ordering color coded parts, always specify the designated color code.



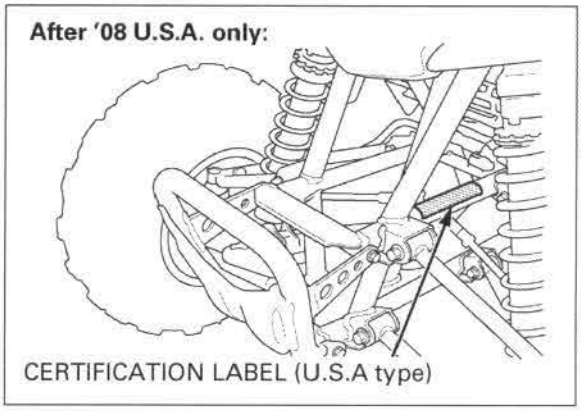
MODEL IDENTIFICATION (After '07)



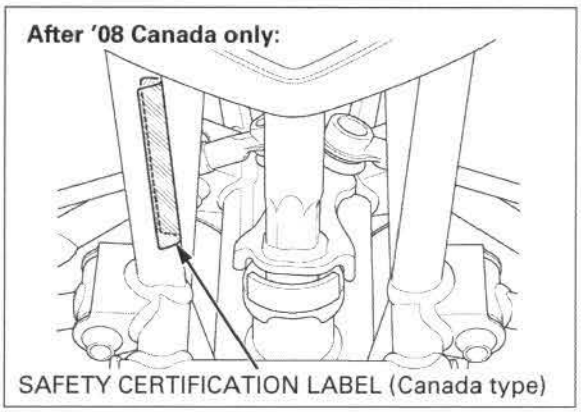
'08: The model identification label (U.S.A. type) or safety certification label (Canada type) is located on the right front frame pipe.



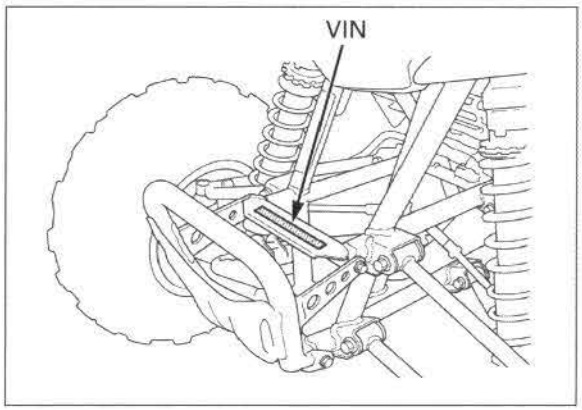
After '08: The certification label (U.S.A. type) is located on attached on the right side of the front frame pipe.



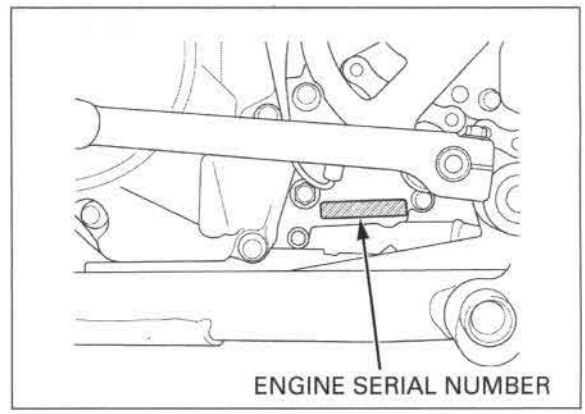
After '08: The safety certification label (Canada type) is located on the right front frame pipe.



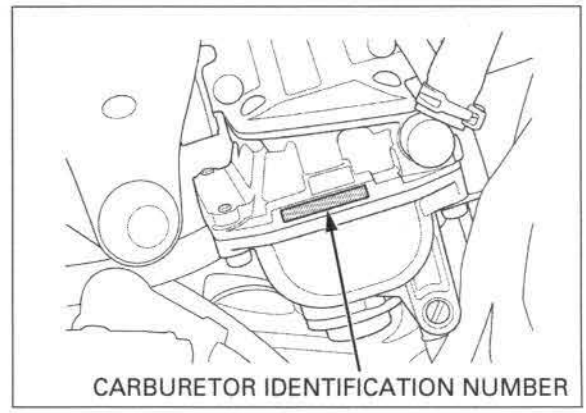
The vehicle identification number (VIN) is stamped on the front side of the frame.



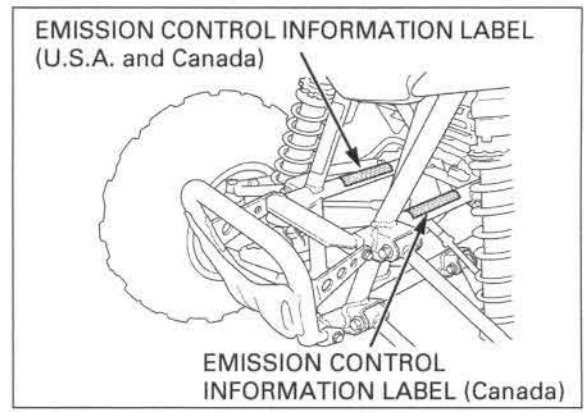
The engine serial number is stamped on the left side of the crankcase.



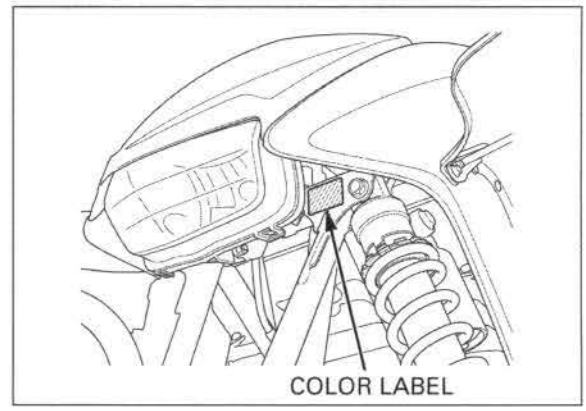
The carburetor identification number is stamped on the left side of the carburetor body.



The Vehicle Emission Control Information Label is attached on the right side (U.S.A.) or both sides (Canada) of front frame pipe.



The color label is attached on the left front side of the upper suspension bracket. 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)

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	2.071 (29/14)
		2nd	1.625 (26/16)
		3rd	1.333 (24/18)
		4th	1.120 (28/25)
		5th	0.963 (26/27)
	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 ('06 – '07)

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)

ITEM		SPECIFICATIONS
ENGINE	Cylinder arrangement	Single cylinder, transversely installed
	Bore and stroke	96.0 x 62.1 mm (3.78 x 2.44 in)
	Displacement	449.4 cm^3 (27.42 cu-in)
	Compression ratio	12.0 : 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	
	TRX450ER	34.3 kg (75.6 lbs)
	TRX450R	33.4 kg (73.6 lbs)
CARBURETOR	Carburetor type	Piston valve
	Venturi diameter	40 mm (1.6 in)
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	2.923 (38/13)
	Gear ratio 1st	2.230 (29/13)
	2nd	1.785 (25/14)
	3rd	1.437 (23/16)
	4th	1.181 (26/22)
	5th	0.962 (26/27)
	Gearshift pattern	Left foot operated return system, 1-N-2-3-4-5
ELECTRICAL	Ignition system	AC-CDI
	Starting system	Electric starter motor (TRX450ER)
		Kickstarter (TRX450R)
	Charging system	Triple phase output alternator
	Regulator/rectifier	Triple phase full wave rectification
	Lighting system	Battery (TRX450ER)
		12 V DC output (TRX450R)

GENERAL SPECIFICATIONS (After '07)

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	176 kg (388 lbs)
	TRX450R	173 kg (381 lbs)
	Maximum weight capacity	110 kg (243 lbs)

ITEM		SPECIFICATIONS
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	AT21 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 KT331H
	Rear tire brand	DUNLOP KT355H
	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	10.3 liters (2.72 US gal, 2.27 Imp gal)
	Fuel tank reserve capacity	3.0 liters (0.79 US gal, 0.66 Imp gal)
ENGINE	Cylinder arrangement	Single cylinder, transversely installed
	Bore and stroke	96.0 x 62.1 mm (3.78 x 2.44 in)
	Displacement	449.4 cm^3 (27.42 cu-in)
	Compression ratio	12.0 : 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	
	TRX450ER	34.2 kg (75.4 lbs)
	TRX450R	33.4 kg (73.6 lbs)
CARBURETOR	Carburetor type	Piston valve
	Venturi diameter	40 mm (1.6 in)
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	2.923 (38/13)
	Gear ratio 1st	2.230 (29/13)
	2nd	1.785 (25/14)
	3rd	1.437 (23/16)
	4th	1.181 (26/22)
	5th	0.962 (26/27)
	Gearshift pattern	Left foot operated return system, 1-N-2-3-4-5
ELECTRICAL	Ignition system	AC–CDI
	Starting system	Electric starter motor (TRX450ER) Kickstarter (TRX450R)
	Charging system	Triple phase output alternator
	Regulator/rectifier	Triple phase full wave rectification
	Lighting system	Battery (TRX450ER) 12 V DC output (TRX450R)

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 4-stroke oil (U.S.A. and Canada) or equivalent motor oil API service classification: SG or Higher JASO T 903 standard: MA Viscosity: SAE 10W-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 4-stroke oil (U.S.A. and Canada) or equivalent motor oil API service classification: SG or Higher JASO T 903 standard: MA Viscosity: SAE 10W-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 ('04 – '05)	0.05 – 0.13 (0.002 – 0.005)	–
		Side clearance (After '05)	0.04 – 0.13 (0.002 – 0.005)	–

FUEL SYSTEM SPECIFICATIONS ('04 – '05)

ITEM	SPECIFICATIONS
Carburetor identification number	QA16A
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 freeplay	3 – 8 mm (1/8 – 5/16 in)
Hot starter lever freeplay	2 – 3 mm (1/16 – 1/8 in)

FUEL SYSTEM SPECIFICATIONS (After '05)

ITEM			SPECIFICATIONS
Carburetor identification number	'06 model	TRX450ER	FCR10A
		TRX450R	FCR11A
	'07 model	TRX450ER	FCR10B
		TRX450R	FCR11B
	After '07	TRX450ER	FCR10C
		TRX450R	FCR11C
Main jet		'06 – '07	#120
		After '07	#122
Slow jet			#42
Starter jet			#75
Jet needle		'06 model	NHHU
		After '06	NJBU
Pilot screw initial opening		'06 – '07	2-3/8 turns out
		After '07	2 turns out
Float level			8.0 mm (0.31 in)
Idle speed			1,700 ± 100 rpm
Throttle grip freeplay			5 – 10 mm (7/32 – 3/8 in)
Hot starter lever freeplay (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/cm², 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)

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

Unit: mm (in)

ITEM				STANDARD	SERVICE LIMIT
Cylinder compression	TRX450ER		'06 – '07	343 – 382 kPa (3.5 – 3.9 kgf/cm², 50 – 56 psi)	–
			After '07	343 – 441 kPa (3.5 – 4.5 kgf/cm², 50 – 64 psi)	–
	TRX450R			961 – 1000 kPa (9.8 – 10.2 kgf/cm², 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 (TRX450R and '06 – '07 TRX450ER)				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 freeplay		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 freeplay		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)

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)	12.07 (0.475)
		Right	12.003 – 12.024 (0.4726 – 0.4734)	12.04 (0.474)
		Center	11.003 – 11.024 (0.4332 – 0.4340)	11.04 (0.435)
	Shaft O.D.	Left/right	11.966 – 11.984 (0.4711 – 0.4718)	11.950 (0.4700)
		Center	10.969 – 10.980 (0.4319 – 0.4323)	10.969 (0.4319)
	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		0.30 – 0.75 (0.012 – 0.030)	0.75 (0.030)
	Big end radial clearance		0.006 – 0.018 (0.0002 – 0.0007)	0.05 (0.002)

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)	–
	'06 – '07	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)	–
	After '07		27.5 kPa (0.275 kgf/cm^2, 4.0 psi)	–
Compression damping adjuster standard position		'04 – '05	1-7/8 turns out from full in	–
		'06 – '07	1/2 ± 1/8 turns out from full in	–
		After '07	1-7/8 ± 1/8 turns out from full in	–
Rebound damping adjuster standard position		'04 – '05	1-3/8 turns out from full in	–
		'06 – '07	7/8 ± 1/8 turns out from full in	–
		After '07	1 ± 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)	–

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/cm², 4.7 psi)	–
		Minimum	28.5 kPa (0.285 kgf/cm², 4.1 psi)	–
		Maximum	36.5 kPa (0.365 kgf/cm², 5.3 psi)	–
	'06 – '07	Standard	32.5 kPa (0.325 kgf/cm², 4.7 psi)	–
		Minimum	30.0 kPa (0.300 kgf/cm², 4.3 psi)	–
		Maximum	35.0 kPa (0.350 kgf/cm², 5.1 psi)	–
	After '07		32.5 kPa (0.325 kgf/cm², 4.7 psi)	–
Axle runout			–	3.0 (0.12)
Drive chain	Slack		25 – 35 (1 – 1-7/16)	–
	Size/link ('04 – '05)	DID	DID520V6/94	–
		RK	RK520SMOZ10S/94	–
	Size/link ('06 – '07)	DID	DID520V6/96	–
		RK	RK520SMOZ10S/96	–
	Size/link (After '07)	DID	DID520V/96	–
		RK	RK520SMOZ10S/96	–
Compression damping adjuster standard position		'04 – '05	26 ± 1 clicks out from full in	–
		'06 – '07	8 ± 1 clicks out from full in	–
		After '07	26 ± 1 clicks out from full in	–
Rebound damping adjuster standard position		'04 – '05	1-3/4 turns out from full in	–
		'06 – '07	1-1/8 ± 1/8 turns out from full in	–
		After '07	1-3/4 ± 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	Disc thickness	3.8 – 4.2 (0.15 – 0.17)	3.5 (0.14)
	Disc runout	–	0.30 (0.012)
	Master cylinder I.D.	12.7 (0.55)	–
	Caliper cylinder I.D.	32.0 (1.26)	–

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