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 recommended that you do not use replacement parts of inferior quality.

For Your Customer's Safety

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

⚠WARNING

Improper service or repairs can create an unsafe condition that can cause your customer or others to be seriously hurt or killed.

Follow the procedures and precautions in this manual and other service materials carefully.

For Your Safety

Because this manual is intended for the professional service technician, we do not provide warnings about many basic shop safety practices (e. g., Hot parts - wear gloves). If you have not received shop safety training or do not feel confident about your knowledge of safe servicing practice, we recommended that you do not attempt to perform the procedures described in this manual.

Some of the most important general service safety precautions are given below. However, we cannot warn you of every conceivable hazard that can arise in performing service and repair procedures. Only you can decide whether or not you should perform a given task.

⚠WARNING

Failure to properly follow instructions and precautions can cause you to be seriously hurt or killed.

Follow the procedures and precautions in this manual carefully.

Important Safety Precautions

Make sure you have a clear understanding of all basic shop safety practices and that you are wearing appropriate clothing and using safety equipment. When performing any service task, be especially careful of the following:

- Read all of the instructions before you begin, and make sure you have the tools, the replacement or repair parts, and the skills required to perform the tasks safely and completely.
- Protect your eyes by using proper safety glasses, goggles or face shields any time you hammer, drill, grind, pry or work around pressurized air or liquids, and springs or other stored-energy components. If there is any doubt, put on eye protection.

- Use other protective wear when necessary, for example gloves or safety shoes. Handling hot or sharp parts can cause severe burns or cuts. Before you grab something that looks like it can hurt you, stop and put on gloves.
- Protect yourself and others whenever you have the vehicle up in the air. Any time you lift the vehicle, either with a hoist or a jack, make sure that it is always securely supported. Use jack stands.

Make sure the engine is off before you begin any servicing procedures, unless the instruction tells you to do otherwise. This will help eliminate several potential hazards:

- 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 of 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.

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 judgment.

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 - on 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 WHATEVER. 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.

1. GENERAL INFORMATION

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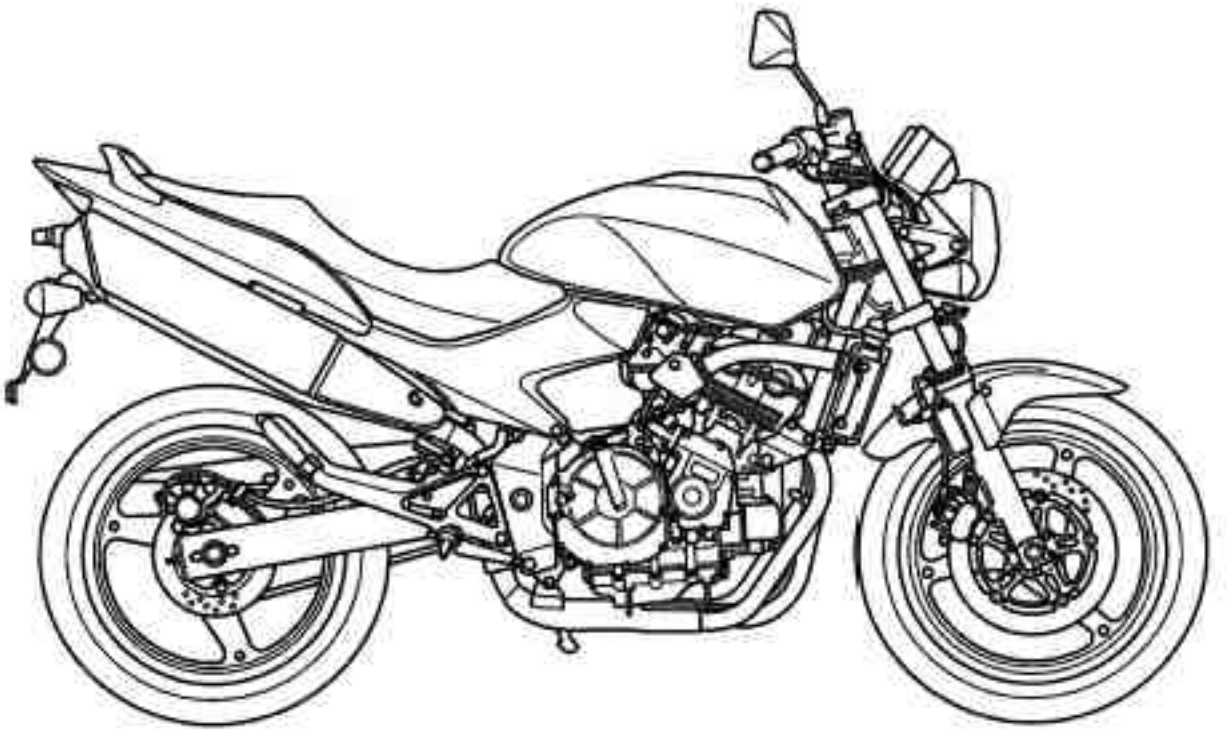
SERVICE RULES

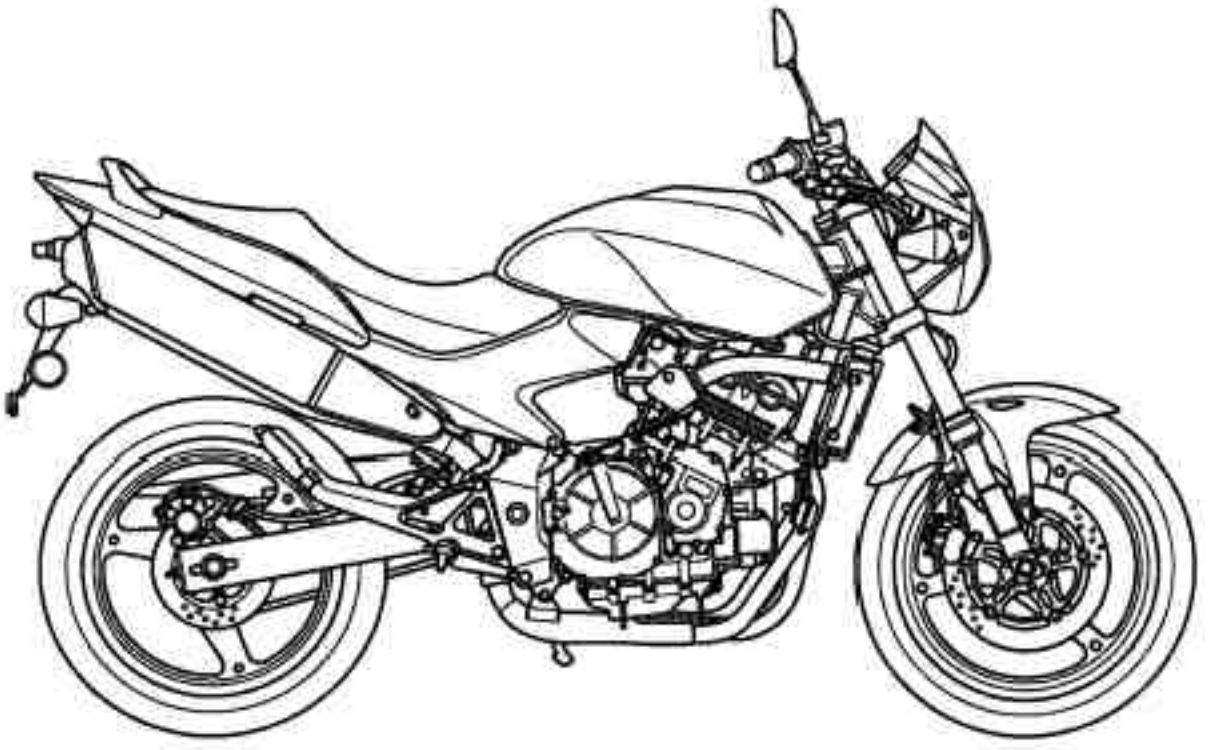
1. Use genuine Honda or Honda-recommended parts and lubricants or their equivalents. Parts that don't meet Honda's design specifications may cause damage to the motorcycle.
2. Use the special tools designed for this product to avoid damage and incorrect assembly.
3. Use only metric tools when servicing the motorcycle. Metric bolts, nuts and screws are not interchangeable with English fasteners.
4. Install new gaskets, O-rings, cotter pins, and lock plates when reassembling.
5. When tightening bolts or nuts, begin with the larger diameter or inner bolt first. Then tighten to the specified torque diagonally in incremental steps unless a particular sequence is specified.
6. Clean parts in cleaning solvent upon disassembly. Lubricate any sliding surfaces before reassembly.
7. After reassembly, check all parts for proper installation and operation.
8. Route all electrical wires as show in the Cable and Harness Routing (page 1-23).

MODEL IDENTIFICATION

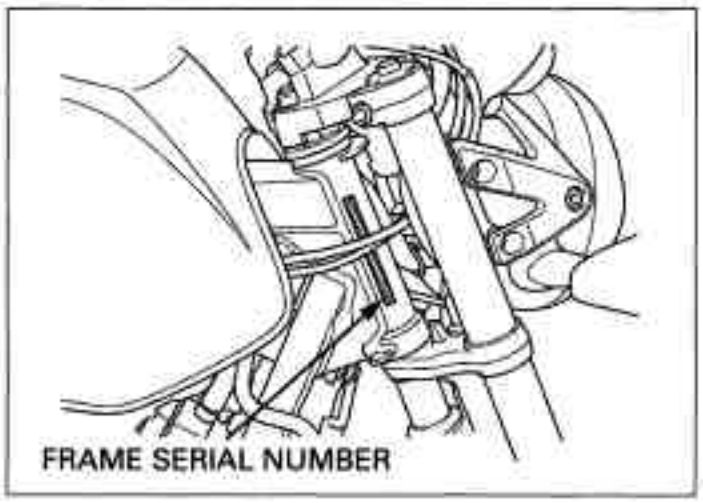
'04 model:



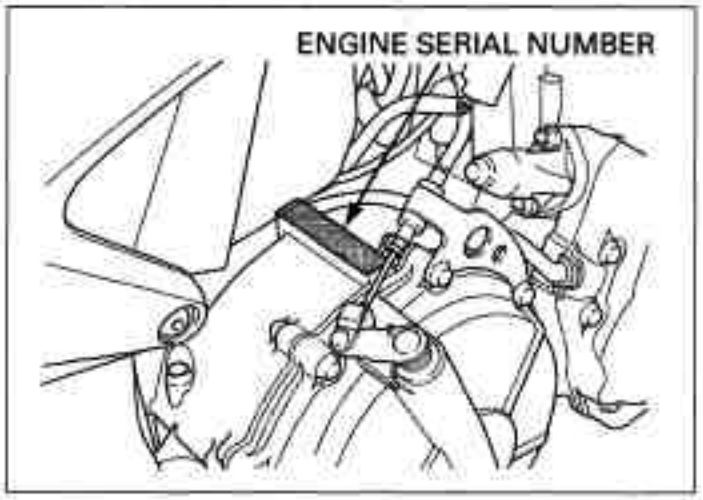
After '04 model:



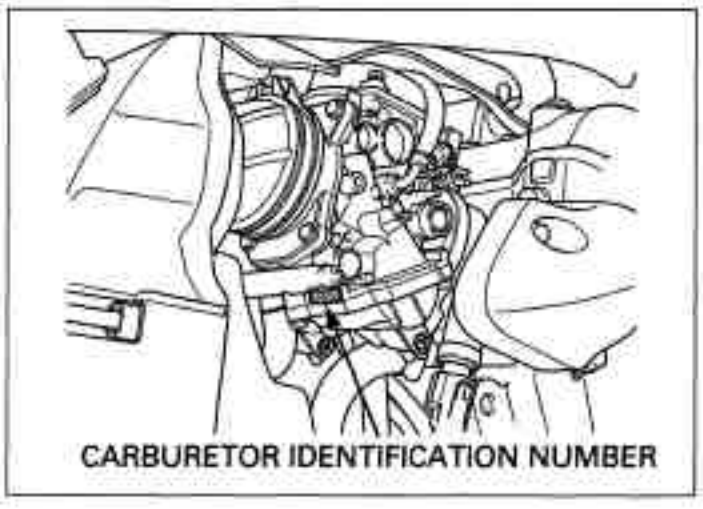
The frame serial number is stamped on the right side of the steering head.


FRAME SERIAL NUMBER

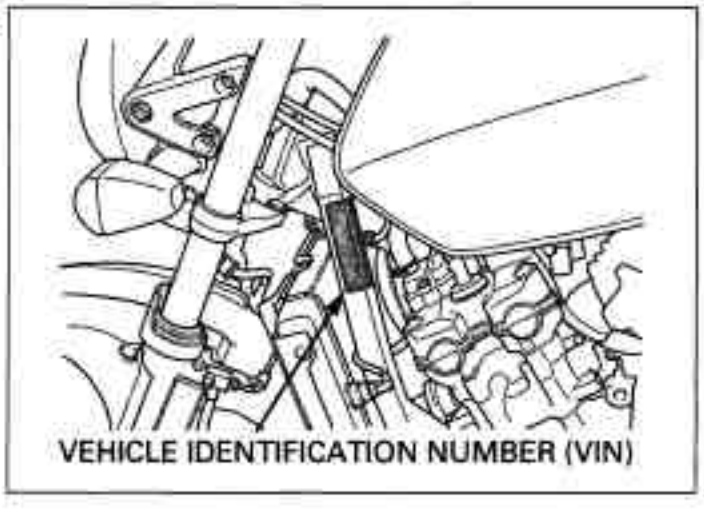
The engine serial number is stamped on the lower right side of the crankcase.



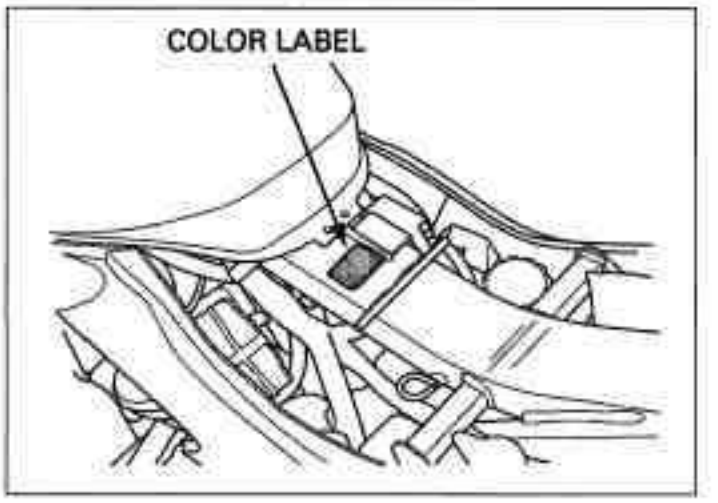
The carburetor identification number is stamped on the intake side of the carburetor body as shown.


CARBURETOR IDENTIFICATION NUMBER

The vehicle Identification Number (VIN) is located on the left side of the steering head on the Safety Certification Label.


VEHICLE IDENTIFICATION NUMBER (VIN)

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



GENERAL SPECIFICATIONS

ITEM			SPECIFICATIONS
DIMENSIONS	Overall length		2,100 mm (82.7 in)
	Overall width		740 mm (29.1 in)
	Overall height		1,070 mm (42.1 in)
	Wheelbase		1,420 mm (55.9 in)
	Seat height		790 mm (31.1 in)
	Footpeg height		344 mm (13.5 in)
	Ground clearance		140 mm (5.5 in)
	Curb weight ('04 model)	49 state/Canada type	200 kg (441 lbs)
		California type	202 kg (445 lbs)
	Curb weight (After '04 model)	49 state/Canada type	201 kg (441 lbs)
		California type	203 kg (445 lbs)
	Maximum weight capacity	49 state/Canada type	174 kg (384 lbs)
		California type	174 kg (384 lbs)
FRAME	Frame type		Diamond
	Front suspension		Telescopic fork
	Front axle travel		108 mm (4.3 in)
	Rear suspension		Swingarm
	Rear axle travel		127 mm (5.0 in)
	Front tire size		120/70 ZR 17M/C (58W)
	Rear tire size		180/55 ZR 17M/C (73W)
	Front tire brand		BT-56F RADIAL N (Bridgestone) Pilot ROAD S (Michelin)
	Rear tire brand		BT-56R RADIAL G (Bridgestone) Pilot ROAD S (Michelin)
	Front brake		Hydraulic double disc
	Rear brake		Hydraulic single disc
	Caster angle ('04 model)		25° 40'
	Caster angle (After '04 model)		25° 30'
	Trail length		98 mm (3.9 in)
	Fuel tank capacity		17 liter (4.49 US gal, 3.74 Imp gal)
	Fuel reserve capacity		2.6 liter (0.69 US gal, 0.57 Imp gal)
ENGINE	Cylinder arrangement		4 cylinders in-line, inclined 30° from vertical
	Bore and stroke		65.0 X 45.2 mm (2.56 X 1.78 in)
	Displacement		599 cm^3 (36.5 cu-in)
	Compression ratio		12.0: 1
	Valve train		Chain driven, DOHC
	Intake valve opens	at 1 mm (0.04 in) lift	15° BTDC
	closes	at 1 mm (0.04 in) lift	35° ABDC
	Exhaust valve opens	at 1 mm (0.04 in) lift	38° BBDC
	closes	at 1 mm (0.04 in) lift	7° ATDC
	Lubrication system		Forced pressure and wet sump
	Oil pump type		Trochoid
	Cooling system		Liquid cooled
	Air filtration		Paper element
	Engine dry weight		63.2 kg (139.3 lbs)
	Firing order		1 - 2 - 4 - 3
CARBURETOR	Type		Constant velocity
	Throttle bore		34 mm (1.3 in)

ITEM			SPECIFICATIONS
DRIVE TRAIN	Clutch system		Multi-plate, wet
	Clutch operation system		Cable operating
	Transmission		Constant mesh, 6-speeds
	Primary reduction		1.863 (82/44)
	Final reduction		2.800 (42/15)
	Gear ratio	1st	2.928 (41/14)
		2nd	2.062 (33/16)
		3rd	1.647 (28/17)
		4th	1.368 (26/19)
		5th	1.200 (24/20)
		6th	1.086 (25/23)
	Gearshift pattern		Left foot operated return system, 1 - N - 2 - 3 - 4 - 5 - 6
ELECTRICAL	Ignition system		Full transistorized ignition
	Starting system		Electric starter motor
	Charging system		Triple phase output alternator
	Regulator/rectifier		SCR shorted/triple phase, full wave rectification
	Lighting system		Battery

LUBRICATION SYSTEM SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Engine oil capacity	After draining	3.5 liter (3.7 US qt, 3.1 Imp qt)	–
	After draining/filter change	3.8 liter (4.0 US qt, 3.3 Imp qt)	–
	After disassembly	4.2 liter (4.4 US qt, 3.7 Imp qt)	–
Recommended engine 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	–
Oil pressure at oil pressure switch		490 kPa (5.0 kgf/cm², 71 psi) at 6,000 rpm/(80°C/176°F)	–
Oil pump rotor	Tip clearance	0.15 (0.006)	0.20 (0.008)
	Body clearance	0.15 – 0.22 (0.006 – 0.009)	0.35 (0.014)
	Side clearance	0.02 – 0.07 (0.001 – 0.003)	0.10 (0.004)
Oil pump drive sprocket collar O.D.		34.050 – 34.075 (1.3405 – 1.3415)	34.03 (1.340)
Oil pump drive sprocket I.D.		35.025 – 35.075 (1.3789 – 1.3809)	35.10 (1.382)

FUEL SYSTEM

ITEM		SPECIFICATIONS
Carburetor identification number ('04 model)	Except California type	VP49P
	California type	VP49Q
Carburetor identification number (After '04 model)	Except California type	VP49U
	California type	VP49T
Main jet		No.1/4; #108, No.2/3; #110
Slow jet		#40
Jet needle		B97A
Pilot screw	initial opening	See page 6-35
	high altitude adjustment	See page 6-36
Float level		13.7 mm (0.54 in)
Idle speed		1,400 ± 100 rpm
Throttle grip free play		2 – 6 mm (1/16 – 1/4 in)
Carburetor vacuum difference		Within 30 mm Hg (1.2 in Hg)
Base carburetor for synchronization		No.3 carburetor

COOLING SYSTEM SPECIFICATIONS

ITEM		SPECIFICATIONS
Coolant capacity	Radiator and engine	2.3 liter (2.43 US qt, 2.02 Imp qt)
	Reserve tank	0.30 liter (0.32 US qt, 0.26 Imp qt)
Radiator cap relief pressure		108 – 137 kPa (1.1 – 1.4 kgf/cm², 16 – 20 psi)
Thermostat	Begin to open	80 – 84 °C (176 – 183 °F)
	Fully open	95 °C (203 °F)
	Valve lift	8 mm (0.3 in) minimum
Recommended antifreeze		High quality ethylene glycol antifreeze containing corrosion protection inhibitors
Standard coolant concentration		1:1 mixture with soft water

CYLINDER HEAD/VALVES SPECIFICATIONS

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Cylinder compression			1,294 kPa (13.2 kgf/cm², 188 psi) at 350 rpm	
Valve clearance		IN	0.16 ± 0.03 (0.006 ± 0.001)	–
		EX	0.22 ± 0.03 (0.009 ± 0.001)	–
Camshaft	Cam lobe height	IN	36.220 – 36.300 (1.4260 – 1.4291)	36.03 (1.419)
		EX	35.380 – 35.460 (1.3929 – 1.3960)	35.19 (1.385)
	Journal O.D.		23.959 – 23.980 (0.9433 – 0.9411)	24.955 (0.9825)
	Runout		–	0.05 (0.002)
	Oil clearance		0.020 – 0.062 (0.0008 – 0.0024)	0.10 (0.004)
Valve lifter	Valve lifter O.D.		25.978 – 25.993 (1.0228 – 1.0233)	25.97 (1.022)
	Valve lifter bore I.D.		26.010 – 26.026 (1.0240 – 1.0246)	26.04 (1.025)
Valve, valve guide	Valve stem O.D.	IN	3.975 – 3.990 (0.1565 – 0.1571)	3.965 (0.1561)
		EX	3.965 – 3.980 (0.1561 – 0.1567)	3.955 (0.1557)
	Valve guide I.D.	IN/EX	4.000 – 4.012 (0.1575 – 0.1580)	4.04 (0.159)
	Stem-to-guide clearance	IN	0.010 – 0.037 (0.0004 – 0.0015)	0.075 (0.0030)
		EX	0.020 – 0.047 (0.0008 – 0.0019)	0.085 (0.0033)
	Valve guide projection above cylinder head	IN	13.10 – 13.30 (0.516 – 0.524)	–
		EX	11.30 – 11.50 (0.445 – 0.453)	–
	Valve seat width	IN/EX	0.90 – 1.10 (0.035 – 0.043)	1.5 (0.06)
Valve spring free length		IN/EX	38.25 (1.506)	37.05 (1.46)
Cylinder head warpage			–	0.10 (0.004)

CLUTCH/GEARSHIFT LINKAGE SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Clutch lever free play		10 – 20 (3/8 – 13/16)	–
Clutch	Spring free length	48.9 (1.93)	47.5 (1.87)
	Disc thickness	2.92 – 3.08 (0.115 – 0.121)	2.6 (0.10)
	Plate warpage	–	0.30 (0.012)
Clutch outer guide	I.D.	21.994 – 22.007 (0.8659 – 0.8664)	22.017 (0.8668)
	O.D.	34.975 – 34.991 (1.3770 – 1.3776)	34.965 (1.3766)
Mainshaft O.D. at clutch outer guide		21.980 – 21.993 (0.8654 – 0.8659)	21.95 (0.864)

ALTERNATOR/STARTER CLUTCH SPECIFICATIONS

Unit: mm (in)

ITEM	STANDARD	SERVICE LIMIT
Starter driven gear boss O.D.	51.699 – 51.718 (2.0354 – 2.0361)	51.684 (2.0348)