

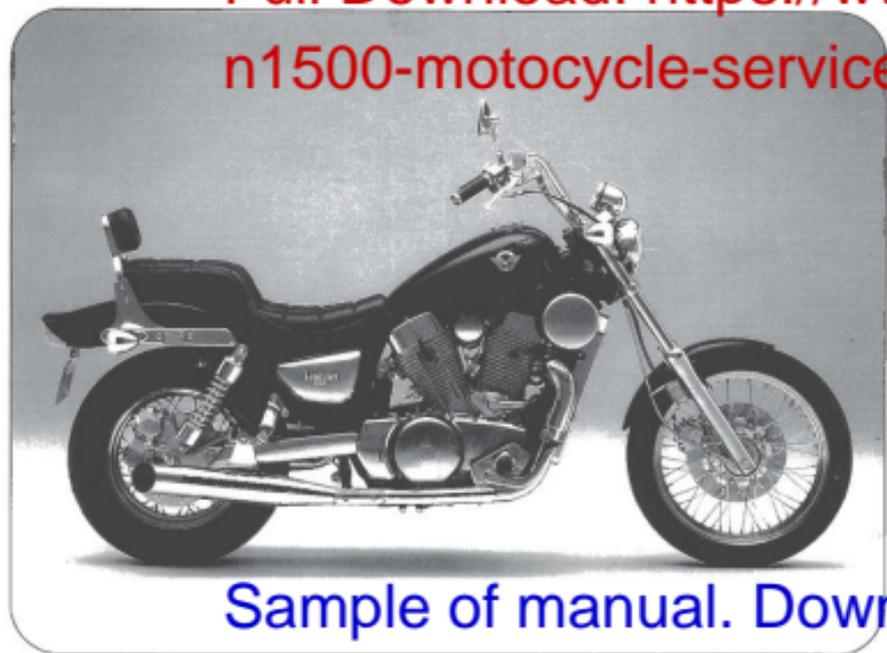


Kawasaki VN1500

Product: 1987-1999 Kawasaki

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Motorcycle Service Manual

Quick Reference Guide

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This quick reference guide will assist you in locating a desired topic or procedure.

● Bend the pages back to match the black tab of the desired chapter number with the black tab on the edge at each table of contents page.

● Refer to the sectional table of contents for the exact pages to locate the specific topic required.



VN1500

VN1500A:

VULCAN 88 (US and Canada)
VN-15 (Others)

VN1500B:

VULCAN 88 SE (US and Canada)
VN-15 SE (Others)

Motorcycle Service Manual

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No liability can be accepted for any inaccuracies or omissions in this publication, although every possible care has been taken to make it as complete and accurate as possible.

The right is reserved to make changes at any time without prior notice and without incurring an obligation to make such changes to products manufactured previously. See your Motorcycle dealer for the latest information on product improvements incorporated after this publication.

All information contained in this publication is based on the latest product information available at the time of publication. Illustrations and photographs in this publication are intended for reference use only and may not depict actual model component parts.

LIST OF ABBREVIATIONS

A	ampere(s)	lb	pound(s)
ABDC	after bottom dead center	m	meter(s)
AC	alternating current	min	minute(s)
ATDC	after top dead center	N	newton(s)
BBDC	before bottom dead center	Pa	pascal(s)
BDC	bottom dead center	PS	horsepower
BTDC	before top dead center	psi	pound(s) per square inch
°C	degree(s) Celsius	r	revolution
DC	direct current	rpm	revolution(s) per minute
F	farad(s)	TDC	top dead center
°F	degree(s) Fahrenheit	TIR	total indicator reading
ft	foot, feet	V	volt(s)
g	gram(s)	W	watt(s)
h	hour(s)	Ω	ohm(s)
L	liter(s)		

Read OWNER'S MANUAL before operating

EMISSION CONTROL INFORMATION

To protect the environment in which we all live, Kawasaki has incorporated crankcase emission (1) and exhaust emission (2) control systems in compliance with applicable regulations of the United States Environmental Protection Agency and California Air Resources Board. Additionally, Kawasaki has incorporated an evaporative emission control system (3) in compliance with applicable regulations of the California Air Resources Board on vehicles sold in California only.

1. Crankcase Emission Control System

This system eliminates the release of crankcase vapors into the atmosphere. Instead, the vapors are routed through an oil separator to the intake side of the engine. While the engine is operating, the vapors are drawn into combustion chamber, where they are burned along with the fuel and air supplied by the carburetion system.

2. Exhaust Emission Control System

This system reduces the amount of pollutants discharged into the atmosphere by the exhaust of this motorcycle. The fuel and ignition systems of this motorcycle have been carefully designed and constructed to ensure an efficient engine with low exhaust pollutant levels.

3. Evaporative Emission Control System

Vapors caused by fuel evaporation in the fuel system are not vented into the atmosphere. Instead, fuel vapors are routed into the running engine to be burned, or stored in a canister when the engine is stopped. Liquid fuel is caught by a vapor separator and returned to the fuel tank.

The Clean Air Act, which is the Federal law covering motor vehicle pollution, contains what is commonly referred to as the Act's "tampering provisions."

"Sec. 203(a) The following acts and the causing thereof are prohibited...

- (3)(A) for any person to remove or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under this title prior to its sale and delivery to the ultimate purchaser, or for any manufacturer or dealer knowingly to remove or render inoperative any such device or element of design after such sale and delivery to the ultimate purchaser.
- (3)(B) for any person engaged in the business of repairing, servicing, selling, leasing, or trading motor vehicles or motor vehicle engines, or who operates a fleet of motor vehicles knowingly to remove or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under this title following its sale and delivery to the ultimate purchaser..."

(Continued on next page.)

NOTE

- The phrase "remove or render inoperative any device or element of design" has been generally interpreted as follows :
1. Tampering does not include the temporary removal or rendering inoperative of devices or elements of design in order to perform maintenance.
 2. Tampering could include :
 - a. Maladjustment of vehicle components such that the emission standards are exceeded.
 - b. Use of replacement parts or accessories which adversely affect the performance or durability of the motorcycle.
 - c. Addition of components or accessories that result in the vehicle exceeding the standards.
 - d. Permanently removing, disconnecting, or rendering inoperative any component or element of design of the emission control systems.

WE RECOMMEND THAT ALL DEALERS OBSERVE THESE PROVISIONS OF FEDERAL LAW , THE VIOLATION OF WHICH IS PUNISHABLE BY CIVIL PENALTIES NOT EXCEEDING \$10,000 PER VIOLATION.

TAMPERING WITH NOISE CONTROL SYSTEM PROHIBITED

Federal law prohibits the following acts or the causing thereof: (1) The removal or rendering inoperative by any person other than for purposes of maintenance, repair, or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use, 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 acts listed below:

- Replacement of the original exhaust system or muffler with a component not in compliance with Federal regulations.
- Removal of the muffler(s) or any internal portion of the muffler(s).
- Removal of the air box or air box cover.
- Modifications to the muffler(s) or air intake system by cutting, drilling, or other means if such modifications result in increased noise levels.

Foreword

This manual is designed primarily for use by trained mechanics in a properly equipped shop. However, it contains enough detail and basic information to make it useful to the owner who desires to perform his own basic maintenance and repair work. A basic knowledge of mechanics, the proper use of tools, and workshop procedures must be understood in order to carry out maintenance and repair satisfactorily. Whenever the owner has insufficient experience or doubts his ability to do the work, all adjustments, maintenance, and repair should be carried out only by qualified mechanics.

In order to perform the work efficiently and to avoid costly mistakes, read the text, thoroughly familiarize yourself with the procedures before starting work, and then do the work carefully in a clean area. Whenever special tools or equipment are specified, do not use makeshift tools or equipment. Precision measurements can only be made if the proper instruments are used, and the use of substitute tools may adversely affect safe operation.

For the duration of your warranty period, especially, we recommend that all repairs and scheduled maintenance be performed in accordance with this service manual. Any owner maintenance or repair procedure not performed in accordance with this manual may void the warranty.

To get the longest life out of your Motorcycle:

- Follow the Periodic Maintenance Chart in the Service Manual.
- Be alert for problems and non-scheduled maintenance.
- Use proper tools and genuine Kawasaki Motorcycle parts. Special tools, gauges, and testers that are necessary when servicing Kawasaki motorcycles are introduced by the Special Tool Manual. Genuine parts provided as spare parts are listed in the Parts Catalog.
- Follow the procedures in this manual carefully. Don't take shortcuts.
- Remember to keep complete records of maintenance and repair with dates and any new parts installed.

How to Use this Manual

In preparing this manual, we divided the product into its major systems. These systems became the manual's chapters. All information for a particular system from adjustment through disassembly and inspection is located in a single chapter.

The Quick Reference Guide shows you all of the products systems and assists in locating their chapters. Each chapter in turn has its own comprehensive Table of Contents.

The Periodic Maintenance Chart is located in the General Information chapter. The chart gives a time schedule for required maintenance operations.

If you want spark plug information, for example, go to the Periodic Maintenance Chart first. The chart tells you how frequently to clean and gap the plug. Next, use the Quick Reference Guide to locate the Electrical System chapter. Then, use the Table of Contents on the first page of the chapter to find the Spark Plug section.

Whenever you see these WARNING and CAUTION symbols, heed their instructions! Always follow safe operating and maintenance practices.

WARNING

- This warning symbol identifies special instructions or procedures which, if not correctly followed, could result in personal injury, or loss of life.

CAUTION

- This caution symbol identifies special instructions or procedures which, if not strictly observed, could result in damage to or destruction of equipment.

This manual contains five more symbols (in addition to WARNING and CAUTION) which will help you distinguish different types of information.

NOTE

- This note symbol indicates points of particular interest for more efficient and convenient operation.

- Indicates a procedural step or work to be done.
- Indicates a procedural sub-step or how to do the work of the procedural step it follows. It also precedes the text of a WARNING, CAUTION, or NOTE.
- ★ Indicates a conditional step or what action to take based on the results of the test or inspection in the procedural step or sub-step it follows.
- ◊ Indicates a conditional sub-step or what action to take based upon the results of the conditional step it follows.

In most chapters an exploded view illustration of the system components follows the Table of Contents. In these illustrations you will find the instructions indicating which parts require specified tightening torque, oil, grease or a locking agent during assembly.

General Information

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Cable, Wire and Hose Routing	1-12

1-2 GENERAL INFORMATION

Before Servicing

Before starting to service a motorcycle, careful reading of the applicable section is recommended to eliminate unnecessary work. Photographs, diagrams, notes, cautions, warnings, and detailed descriptions have been included wherever necessary. Nevertheless, even a detailed account has limitations, a certain amount of basic knowledge is also required for successful work.

Especially note the following:

(1) Dirt

Before removal and disassembly, clean the motorcycle. Any dirt entering the engine or other parts will work as an abrasive and shorten the life of the motorcycle. For the same reason, before installing a new part, clean off any dust or metal filings.

(2) Battery Ground

Remove the ground (-) lead from the battery before performing any disassembly operations on the motorcycle. When installing, connect the positive (+) lead first, then the negative (-) lead to the battery. This prevents: (a) the possibility of accidentally turning the engine over while partially disassembled. (b) sparks at electrical connections which will occur when they are disconnected. (c) damage to electrical parts.

(3) Installation, Assembly

Generally, installation or assembly is the reverse of removal or disassembly. But if this Service Manual has installation or assembly procedures, follow them. Note parts locations and cable, wire, and hose routing during removal or disassembly so they can be installed or assembled in the same way. It is preferable to mark and record the locations and routing as much as possible.

(4) Tightening Sequence

Generally, when installing a part with several bolts, nuts, or screws, start them all in their holes and tighten them to a snug fit. Then tighten them evenly in a cross pattern. This is to avoid distortion of the part and/or causing gas or oil leakage. Conversely when loosening the bolts, nuts, or screws, first loosen all of them by about a quarter turn and then remove them. Where there is a tightening sequence indication in this Service Manual, the bolts, nuts, or screws must be tightened in the order and method indicated.

(5) Torque

When torque values are given in this Service Manual, use them. Either too little or too much torque may lead to serious damage. Use a good quality, reliable torque wrench.

(6) Force

Common sense should dictate how much force is necessary in assembly and disassembly. If a part seems especially difficult to remove or install, stop and examine what may be causing the problem. Whenever tapping is necessary, tap lightly using a wooden or plastic-faced mallet. Use an impact driver for screws (particularly for the removal of screws held by a locking agent) in order to avoid damaging the screw heads.

(7) Edges

Watch for sharp edges, especially during major engine disassembly and assembly. Protect your hands with gloves or a piece of thick cloth when lifting the engine or turning it over.

(8) High-Flash Point Solvent

A high-flash point solvent is recommended to reduce fire danger. A commercial solvent commonly available in North America is Stoddard solvent (generic name). Always follow manufacturer and container directions regarding the use of any solvent.

(9) Gasket, O-Ring

Do not reuse a gasket or O-ring once it has been in service. The mating surfaces around the gasket should be free of foreign matter and perfectly smooth to avoid oil or compression leaks.

(10) Liquid Gasket, Non-Permanent Locking Agent

Follow manufacturer's directions for cleaning and preparing surfaces where these compounds will be used. Apply sparingly. Excessive amounts may block engine oil passages and cause serious damage. An example of a non-permanent locking agent commonly available in North America is Loctite Lock'n Seal (Blue).

(11) Press

A part installed using a press or driver, such as a wheel bearing, should first be coated with oil on its outer or inner circumference so that it will go into place smoothly.

(12) Ball Bearing and Needle Bearing

Do not remove a ball bearing or a needle bearing unless it is absolutely necessary. Replace any ball or needle bearings that were removed with new ones, as removal generally damages bearings. Install bearings with the marked side facing out applying pressure evenly with a suitable driver. Only press on the race that

forms the press fit with the base component to avoid damaging the bearings. This prevents severe stress on the balls or needles and races, and prevent races and balls or needles from being dented. Press a ball bearing until it stops at the stops in the hole or on the shaft.

(13) Oil Seal and Grease Seal

Replace any oil or grease seals that were removed with new ones, as removal generally damages seals.

When pressing in a seal which has manufacturer's marks, press it in with the marks facing out. Seals should be pressed into place using a suitable driver, which contacts evenly with the side of seal, until the face of the seal is even with the end of the hole. Before a shaft passes through a seal, apply a little high temperature grease on the lips to reduce rubber to metal friction.

(14) Circlip, Retaining Ring, and Cotter Pin

Replace any circlips, retaining rings, and cotter pins that were removed with new ones, as removal weakens and deforms them. When installing circlips and retaining rings, take care to compress or expand them only enough to install them and no more.

(15) Lubrication

Engine wear is generally at its maximum while the engine is warming up and before all the rubbing surfaces have an adequate lubricative film. During assembly, oil or grease (whichever is more suitable) should be applied to any rubbing surface which has lost its lubricative film. Old grease and dirty oil should be cleaned off. Deteriorated grease has lost its lubricative quality and may contain abrasive foreign particles.

Don't use just any oil or grease. Some oils and greases in particular should be used only in certain applications and may be harmful if used in an application for which they are not intended. This manual makes reference to molybdenum disulfide grease (MoS₂) in the assembly of certain engine and chassis parts. Always check manufacturer recommendations before using such special lubricants.

(16) Electrical Wires

All the electrical wires are either single-color or two-color and, with only a few exceptions, must be connected to wires of the same color. On any of the two-color wires there is a greater amount of one color and a lesser amount of a second color, so a two-color wire is identified by first the primary color and then the secondary color. For example, a yellow wire with thin red stripes is referred to as a "yellow/red" wire; it would be a "red/yellow" wire if the colors were reversed to make red the main color.

Wire (cross-section)	Name of Wire Color
	Yellow/Red

(17) Replacement Parts

When there is a replacement instruction, replace these parts with new ones every time they are removed. These replacement parts will be damaged or lose their original function once removed.

(18) Inspection

When parts have been disassembled, visually inspect these parts for the following conditions or other damage. If there is any doubt as to the condition of them, replace them with new ones.

Abrasion	Crack	Hardening	Warp
Bent	Dent	Scratch	Wear
Color change	Deterioration	Seizure	

(19) Specifications

Specification terms are defined as follows:

"Standards": show dimensions or performances which brand-new parts or systems have.

"Service Limits": indicate the usable limits. If the measurement shows excessive wear or deteriorated performance, replace the damaged parts.

1-4 GENERAL INFORMATION

.....
Model Identification
.....

VN1500-A1 Right Side View



VN1500-B1 Left Side View



General Specifications

Items	VN1500-A1/A2/A3/A4/A5/A6/A7/A8/A9/A10/A11/A12/A13	VN1500-B1/B2/B3/B4/B5/B6
Dimensions:		
Overall length	2 390 mm, (A)(F) 2 385 mm, (E) 2 410 mm, (J) 2 375 mm	2 370 mm, (E) 2 410 mm
Overall width	895 mm	—
Overall height	1 190 mm, (A)(E) 1 180 mm	1 210 mm, (E) 1 195 mm
Wheelbase	1 605 mm	1 635 mm, (E) 1 630 mm
Road clearance	150 mm, (A)(E) 135 mm	165 mm, (E) 160 mm
Seat height	720 mm, (A)(E) 750 mm	710 mm, (E) 745 mm
Dry weight	252 kg, (Cal) 252.5 kg, (E) 257 kg, (G) 256 kg	248 kg, (Cal) 248.5 kg (E) 249 kg
Curb weight: Front	126 kg, (Cal) 128 kg	121 kg, (Cal) 121.5 kg
Rear	154 kg, (Cal) 154.5 kg, (E) 157 kg, (G) 156 kg	154 kg, (E) 155 kg
Fuel tank capacity	16 L	12 L
Performance:		
Minimum turning radius	3.0 m, (A)(E) 2.7 m	3.0 m
Engine:		
Type	4-stroke, SOHC, 2-cylinder	←
Cooling system	Liquid-cooled	←
Bore and stroke	102.0 × 90.0 mm	←
Displacement	1 470 mL	←
Compression ratio	9.0 : 1	←
Maximum horsepower	53.0 kW (72 PS) @ 4 500 r/min (rpm), (US) — (E) 51.5 kW (70 PS) @ 4 500 r/min (rpm) (F) 50.0 kW (—) @ 4 500 r/min (rpm) (UTAC's norm) (G) 51.5 kW (70 PS) @ 4 500 r/min (rpm) (DIN) (W) 34.9 kW (47.5 PS) @ 3 800 r/min (rpm) A4—(E) 44.9 kW (61 PS) @ 4 300 r/min (rpm) A4—(G) 44.9 kW (61 PS) @ 4 300 r/min (rpm) (DIN) A5—(F) 43.5 kW (—) @ 4 300 r/min (rpm) (UTAC's norm)	←, *1
Maximum torque	123.6 N·m (12.6 kg·m, 91 ft·lb) @ 3 000 r/min (rpm) (F) —, (US) — (G) 123.6 N·m (12.6 kg·m, 91 ft·lb) @ 3 000 r/min (rpm) (DIN) (W) 105.9 N·m (10.8 kg·m, 78.1 ft·lb) @ 2 300 r/min (rpm) A4—(E) 112.8 N·m (11.5 kg·m, 83.2 ft·lb) @ 3 300 r/min (rpm) A4—(G) 112.8 N·m (11.5 kg·m, 83.2 ft·lb) @ 3 300 r/min (rpm) (DIN)	←, *2
Carburetor system	Carburetors, Keihin CVK36 × 2	←
Starting system	Electric starter	←
Ignition system	Battery and coil (transistorized)	←
Timing advance	Electronically advanced	←
Ignition timing	5° BTDC @ 800 r/min (rpm)	←, (W) 5° BTDC @ 900 r/min (rpm)
Spark plug	NGK DPR7EA-9 or ND X22EPR-U9 (A)(I)(J) NGK DPR7EA-9 or ND X22EPR-U9 A11—: (U) NGK DPR7EA-9 or ND X22EPR-U9	←
Cylinder numbering method	Front to Rear, 1-2	←
Firing order	1-2	←
Valve timing:		
Inlet	Open 22° BTDC	←
Close 66° ABDC	←	
Duration 268°	←	
Exhaust	Open 66° BBDC	←
Close 26° ATDC	←	
Duration 272°	←	
Lubrication system	Forced lubrication (wet sump)	←
Engine oil:	Grade SE, SF, or SG class	←
Viscosity	SAE 10W-40, 10W-50, 20W-40, 20W-50	←
Capacity	3.5 L	←

1-6 GENERAL INFORMATION

Items	VN1500-A1/A2/A3/A4/A5/A6/A7/A8/A9/A10/A11/A12/A13	VN1500-B1/B2/B3/B4/B5/B6
Drive Train:		
Primary reduction system:		
Type	Gear	←
Reduction ratio	1.517 (85/56)	←
Clutch type:	Wet multi disc	←
Transmission:		
Type	4-speed, constant mesh, return shift	←
Gear ratios: 1st	2.500 (40/16)	←
2nd	1.590 (35/22), A11-1.375 (33/24)	←
3rd	1.192 (31/26), A11-1.035 (29/28)	←
4th	0.965 (28/29), A11-0.781 (25/32)	←
Final drive system:		
Type	Shaft	←
Reduction ratio	2.619 (15/21 × 33/6)	←
Overall drive ratio	3.838, A11-3.105 @Top gear	←
Final gear case oil:		
Type	API GL-5 Hypoid gear oil	←
	SAE90 (above 5°C)	←
	SAE80 (below 5°C)	←
Capacity	220 mL	←
Frame:		
Type	Tubular, double cradle	←
Caster (rake angle)	31°	33°, (E) 32.5°
Trail	128 mm	138 mm, (E) 132 mm
Front tire: Type	Tubeless	Tube
Size	100/90-19 57H	←
Rear tire: Type	Tubeless	Tube
Size	150/90-15 74H or 150/90-15 M/C 74H	← or 150/90B15 M/C 74H
Front suspension:		
Type	Telescopic fork	←
Wheel travel	150 mm	←
Rear suspension:		
Type	Swingarm	←
Wheel travel	100 mm	←
Brake type:		
Front	Single disc	←
Rear	Single disc	←
Electrical Equipment:		
Battery	12 V 20 Ah	←
Headlight:		
Type	Semi-sealed beam	←
Bulb	12 V 60/55 W (quartz-halogen)	←
Tail/brake light		
	12 V 87/27 W × 2, (A)(E) 12 V 5/21 W × 2	←
Alternator:		
Type	Three-phase AC	←
Rated output	25 A @6 000 r/min (rpm), 14 V	←

Specifications are subject to change without notice, and may not apply to every country.

(A) : Australian Model

(E) : European Model

(G) : West German Model

(U) : U.S.A. Model

(Au) : Austrian Model

(F) : French Model

(I) : Italian Model

(UK) : UK Model

(Cal) : California Model

(Fi) : Finnish Model

(Sd) : Swedish Model

(W) : Switzerland Model

*1 (Au)(W) 34.9 kW (47.5 PS) @3 800 r/min (rpm)

(E) 51.5 kW (70 PS) @5 000 r/min (rpm)

(G) 51.5 kW (70 PS) @5 000 r/min (rpm)(DIN)

B4- (E) 45.7 kW (-) @5 000 r/min (rpm)(UTAC's nom)

B4- (G) 47.1 kW (64 PS) @5 000 r/min (rpm)(DIN)

B4- (I)(Sd)(UK) 47.1 kW (64 PS) @5 000 r/min (rpm)

B5- (Fi) 47.1 kW (64 PS) @5 000 r/min (rpm)

(US) —

*2 (Au)(W) 105.9 N-m (10.8 kg-m, 78.1 ft-lb)

@2 300 r/min (rpm)

(E) 127.5 Nm (13.0 kg-m, 94.0 ft-lb) @3 000 r/min (rpm)

(G) 127.5 Nm (13.0 kg-m, 94.0 ft-lb) @3 000 r/min (rpm)(DIN)

B4- (G) 117.7 N-m (12.0 kg-m, 86.8 ft-lb) @3 300 r/min (rpm)(DIN)

B4- (I)(Sd)(UK) 117.7 N-m (12.0 kg-m, 86.8 ft-lb)

@3 300 r/min (rpm)

B5- (Fi) 117.7 N-m (12.0 kg-m, 86.8 ft-lb) @3 300 r/min (rpm)

(US) —

Periodic Maintenance Chart (Other than US and Canada)

The scheduled maintenance must be done in accordance with this chart to keep the motorcycle in good running condition. The initial maintenance is vitally important and must not be neglected.

OPERATION	FREQUENCY	Which ever comes first		*ODOMETER READING								
		Every	↓	7 000 mi (11 000 km)	8 000 mi (12 800 km)	12 000 mi (19 200 km)	18 000 mi (28 800 km)	24 000 mi (38 400 km)	30 000 mi (48 000 km)	36 000 mi (57 600 km)	42 000 mi (67 200 km)	
Spark plug - clean and gap†				•	•	•	•	•	•	•		
Air suction valve - check †				•	•	•	•	•	•	•		
Air cleaner element - clean † #											•	•
Throttle grip play - check†												•
Idle speed - adjust			•									•
Carburetor synchronization - check†												•
Engine oil - change #	6 months			•	•	•	•	•	•	•		
Oil filter - replace				•								•
Oil screen - clean				•								•
Radiator hoses, connections - check†			•									
Coolant - change	2 years								•			
Final gear case oil level - check†						•						•
Final gear case oil - change			•									•
Propeller shaft joint - lubricate						•						•
Clutch slave cylinder piston seal - replace	4 years											
Brake lining or pad wear - check† #					•	•	•	•	•	•		
Brake/clutch fluid level - check†	month		•	•	•	•	•	•	•	•		
Brake/clutch fluid - change	2 years									•		
Brake/clutch master cylinder cup and dust seal - replace	4 years											
Caliper piston seal and dust seal - replace	4 years											
Brake light switch - check†			•	•	•	•	•	•	•	•		
Steering - check†			•	•	•	•	•	•	•	•		
Steering stem bearing - lubricate	2 years								•			
Front fork oil - change	2 years									•		
Rear shock absorber oil leak - check †						•						•
Front fork oil leak - check†						•						•
Tire wear - check†					•	•	•	•	•	•		
Spoke tightness and rim runout - check† (VN1500B)			•	•	•	•	•	•	•	•		
Swingarm pivot - lubricate						•						•
Battery electrolyte level - check†	6 month			•	•	•	•	•	•	•		
General lubrication - perform						•						•
Nut, bolt, and fastener tightness - check†			•			•						•

: Service more frequently when operating in severe conditions; dusty, wet, muddy, high speed, or frequent starting/stopping.

* : For higher odometer readings, repeat at the frequency interval established here.

† : Replace, add, adjust, clean, or torque if necessary.

 Periodic Maintenance Chart (Us and Canada)

The scheduled maintenance must be done in accordance with this chart to keep the motorcycle in good running condition. The initial maintenance is vitally important and must not be neglected.

OPERATION	FREQUENCY	*ODOMETER READING							
		Whichever comes first	800 km	5 000 km	10 000 km	15 000 km	20 000 km	25 000 km	30 000 km
		Every							
Carburetor synchronization – check †		•	•	•	•	•	•	•	
Idle speed -- adjust		•	•	•	•	•	•	•	
Throttle grip play – check †		•	•	•	•	•	•	•	
Spark plug – clean and gap †			•	•	•	•	•	•	
Air suction valve – check †			•	•	•	•	•	•	
Air cleaner element – clean		•	•	•	•	•	•	•	
Air cleaner element – replace	5 cleanings			•					
Fuel system – check †				•		•		•	
Evaporative emission control system (CA) – check †		•	•	•	•	•	•	•	
Battery electrolyte level – check †	month	•	•	•	•	•	•	•	
Brake light switch – check †		•	•	•	•	•	•	•	
Brake pad wear – check †		•	•	•	•	•	•	•	
Brake/clutch fluid level – check †	month	•	•	•	•	•	•	•	
Brake/clutch fluid – change	2 years					•			
Steering – check †		•	•	•	•	•	•	•	
Final gear case oil level – check †				•		•		•	
Final gear case oil – change		•						•	
Propeller shaft joint – lubricate				•					
Nut, bolt, fastener tightness – check †		•	•	•	•	•	•	•	
Spoke tightness and rim runout – check † (VN1500-B only)		•	•	•	•	•	•	•	
Tire wear – check †			•	•	•	•	•	•	
Engine oil – change	year	•	•	•	•	•	•	•	
Oil filter – replace		•	•	•	•	•	•	•	
Oil screen – clean		•	•	•	•	•	•	•	
General lubrication – perform			•	•	•	•	•	•	
Front fork oil – change								•	
Swingarm pivot -- lubricate				•				•	
Coolant – change	2 years							•	
Radiator hoses, connections – check †	year	•	•			•		•	
Steering stem bearing – lubricate	2 years					•			
Brake/clutch master cylinder cup and dust seal -- replace	2 years								
Caliper piston seal and dust seal – replace	2 years								
Clutch slave cylinder piston seal -- replace	2 years								
Brake/clutch hose and pipe – replace	4 years								
Fuel hose – replace	4 years								

• : For higher odometer readings, repeat at the frequency interval established here.

† : Replace, add, adjust, clean, or torque if necessary.

(CA): California vehicle only

1-8 GENERAL INFORMATION

Torque and Locking Agent

The following tables list the tightening torque for the major fasteners, and the parts requiring use of a non-permanent locking agent or liquid gasket.

Letters used in the "Remarks" column mean:

L : Apply a non-permanent locking agent to the threads.

SS : Apply silicone sealant to the threads.

M : Apply molybdenum disulfide lubricant (grease or oil) to the threads and seated surface, or washer.

O : Apply oil to the threads, seated surface, or washer.

S : Tighten the fasteners following the specified torque.

St : Stake the fastener to prevent loosening.

Fastener	Torque			Remarks
	N-m	kg-m	ft-lb	
Cooling System:				
Cooling Fan Switch	7.8	0.80	69 in-lb	Left-handed Threads
Bleed Valve	7.8	0.80	69 in-lb	
Water Pump Impeller Bolt	8.8	0.90	78 in-lb	
Water Pump Cover	9.8	1.0	87 in-lb	
Engine Top End:				
Rocker Case Cover Bolts	8.8	0.90	78 in-lb	
Rocker Shaft	25	2.5	18.0	
Rocker Case Bolts and Nuts: 12 mm	78	8.0	58	
8 mm	25	2.5	18.0	S
6 mm	8.8	0.90	78 in-lb	S
Cylinder Head Nuts	25	2.5	18.0	
Cylinder Nut	25	2.5	18.0	
Oil Pipe Banjo Bolts	12	1.2	104 in-lb	
Camshaft Sprocket Bolts	15	1.5	11.0	L
Spark Plug Retainer	12	1.2	104 in-lb	
Chain Tensioner Bolts	—	—	—	L
Clutch:				
Clutch Lever Pivot Nut	5.9	0.60	52 in-lb	
Master Cylinder Clamp Bolts	8.8	0.90	78 in-lb	
Clutch Hose Banjo Bolts	25	2.5	18.0	
Clutch Slave Cylinder Bolts	8.8	0.90	78 in-lb	L
Bleed Valve	7.8	0.80	69 in-lb	
RH Engine Cover Damper Bolts	9.8	1.0	87 in-lb	L
Clutch Hub Nut	145	15.0	110	O
Clutch Pipe Joint	18	1.8	13.0	
Engine Lubrication System:				
Crankcase Oil Nozzle	2.9	0.30	26 in-lb	
Oil Pressure Relief Valve	20	2.0	14.5	L
Oil Pressure Switch	15	1.5	11.0	SS
Engine Drain Plug	20	2.0	14.5	
Oil Filter	18	1.8	13.0	
Oil Screen Plug	20	2.0	14.5	
Oil Pipe Banjo Bolts	12	1.2	104 in-lb	

Fastener	Torque			Removark
	N-m	kg-m	ft-lb	
Engine Removal/Installation:				
Engine Mounting Bolts	44	4.5	33	
Engine Mounting Bracket Bolts	24	2.4	17.5	
Right Down Tube Mounting Bolts	44	4.5	33	
Crankshaft/Transmission:				
Crankcase Bolts: 10 mm	39	4.0	29	S
8 mm	21	2.1	15.0	S
6 mm	8.8	0.90	78 in-lb	
External Shift Mechanism				
Return Spring Bolt	21	2.1	15.0	L
Gear Positioning Lever Bolt	8.8	0.90	78 in-lb	
Connecting Rod Big End Cap Nuts	59	6.0	43	
Primary Gear Bolt	145	15.0	110	
Alternator Rotor Bolt	59	6.0	43	
Camshaft Chain Guide Holder Bolts	-	-	-	L
Starter Clutch Bolt	93	9.5	69	
Starter Clutch Coupling Bolt	15	1.5	11.0	L
Balancer Gear Bolt	93	9.5	69	
Shift Drum Bearing Holder Screw	-	-	-	L
Neutral Switch	15	1.5	11.0	
Rear-right Stud Tap End	-	-	-	L
Wheels/Tires:				
Front Axle Nut	88	9.0	65	
Front Axle Clamp Bolt	29	3.0	22	
Rear Axle Nut	110	11.0	80	
Air Valve Nuts	1.5	0.15	13 in-lb	
Final Drive:				
Front Bevel Gear Case Bolts:				
6 mm	8.8	0.90	78 in-lb	
8 mm	25	2.5	18.0	
Damper Cam Nut	225	23	165	O
Drive Gear Nut	265	27	195	
Neutral Switch	15	1.5	11.0	L
Oil Pipe Banjo Bolts	12	1.2	104 in-lb	
Driven Gear Assembly Mounting Bolts	25	2.5	18.0	
Driven Gear Bolt	120	12.1	88	
Final Gear Case Mounting Nuts	29	3.0	22	
Pinion Gear Nut	120	12.0	87	St
Final Gear Case Cover Bolts:				
8 mm	23	2.3	16.5	L
10 mm	34	3.5	25	L
Final Gear Case Studs	-	-	-	L
Drain Bolt	8.8	0.90	78 in-lb	
Pinion Bearing Retainer	245	25	180	Left-handed Threads
Retainer Stop Screw	16	1.6	11.5	L

1-10 GENERAL INFORMATION

Fastener	Torque			Remarks
	N-m	kg-m	ft-m	
Brakes :				
Brake Lever Pivot Nut	5.9	0.60	52 in-lb	
Front Master Cylinder Clamp Bolts	8.8	0.90	78 in-lb	
Brake Hose Banjo Bolts	25	2.5	18.0	
Caliper Mounting Bolts	32	3.3	24	
Bleed Valves	7.8	0.80	69 in-lb	
Disc Mounting Bolts	27	2.8	20	
Rear Master Cylinder Mounting Bolts	23	2.3	16.5	
Caliper Holder Bolt	64	6.5	47	
Brake Pedal Link Clamp Bolts	25	2.5	18.0	
Suspension :				
Front Fork Clamp Bolts: Upper	20	2.0	14.5	
Lower	52	5.3	38	
Front Fork Drain Bolts	—	—	—	L
Front Fork Bottom Allen Bolts	20	2.0	14.5	L
Swing Arm Pivot Shaft	98	10.0	72	
Front Axle Clamp Bolt	29	3.0	22	
Rear Shock Absorber Mounting Nuts	30	3.1	22	
Steering :				
Handlebar Clamp Bolts	59	6.0	43	
Weight Mounting Screws	—	—	—	L
Steering Stem Head Bolt	39	4.0	29	
Steering Stem Locknut	5	0.50	43 in-lb	
Frame :				
Right Down Tube Mounting Bolts	44	4.5	33	
Engine Mounting Bracket Bolts	24	2.4	17.5	
Brake Pedal Link Clamp Bolts	25	2.5	18.0	
Electrical System :				
Alternator Rotor Bolts	59	6.0	43	
Spark Plugs	18	1.75	12.5	
Cooling Fan Switch	7.8	0.80	69 in-lb	
Neutral Switch	15	1.5	11.0	
Oil Pressure Switch	15	1.5	11.0	

The table below, relating tightening torque to thread diameter, lists the basic torque for the bolts and nuts. Use this table for only the bolts and nuts which do not require a specific torque value. All of the values are for use with dry solvent-cleaned threads.

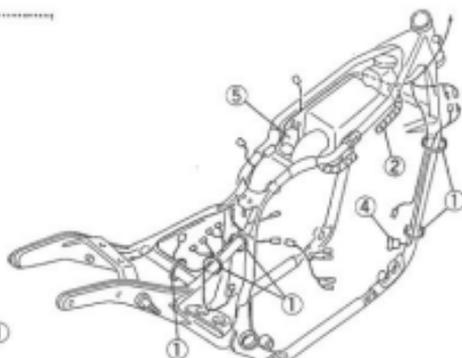
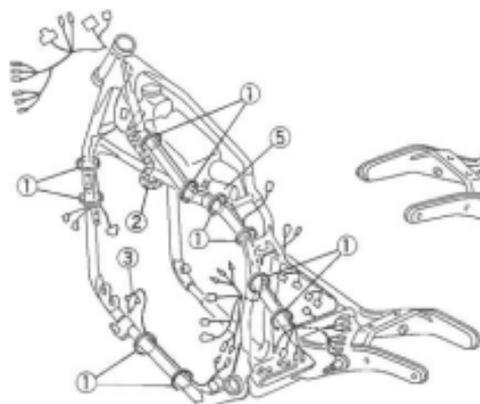
General Fasteners

Threads dia. (mm)	Torque		
	N-m	kg-m	ft-lb
5	3.4 – 4.9	0.35 – 0.50	30 – 43 in-lb
6	5.9 – 7.8	0.80 – 0.80	52 – 69 in-lb
8	14 – 19	1.4 – 1.9	10.0 – 13.5
10	25 – 34	2.6 – 3.5	19.0 – 25
12	44 – 61	4.5 – 6.2	33 – 45
14	73 – 98	7.4 – 10.0	54 – 72
16	115 – 155	11.5 – 16.0	83 – 115
18	165 – 225	17.0 – 23	125 – 165
20	225 – 325	23 – 33	165 – 240

1-12 GENERAL INFORMATION

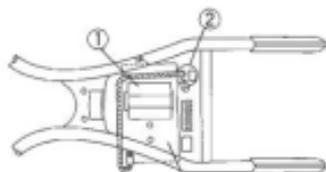
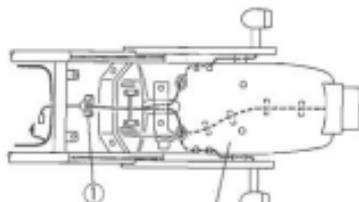
Cable, Wire, and Hose Routing

Wiring Routing

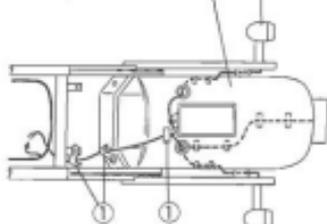


1. Wire Straps
2. Cooling Hoses
3. Side Stand Switch
4. Rear Brake Light Switch
5. Fuel Pump

(VN1500-B)



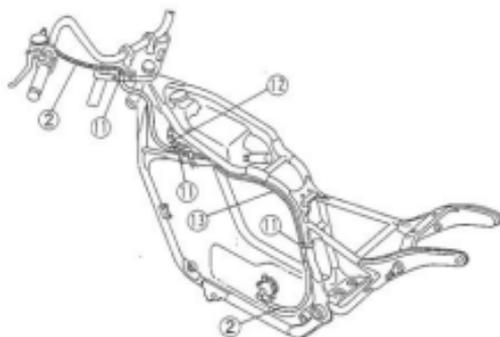
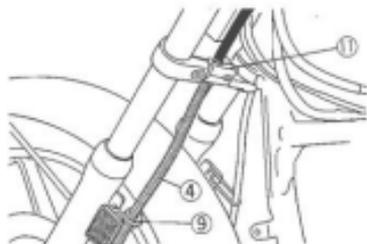
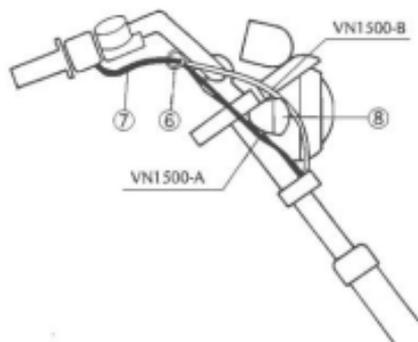
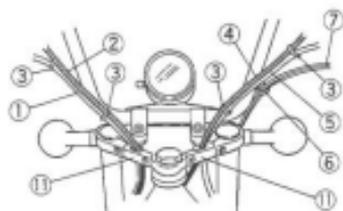
(VN1500-A)



1. Wire Clamps
2. Rear Fender Rear Section
3. Rear Turn Signal Light

1. Junction Box
2. Starter Relay
3. Battery (+) Wire
4. Battery

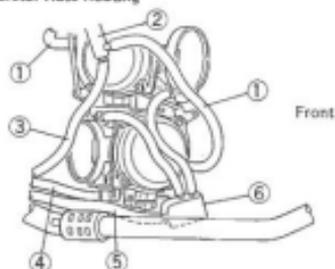
Cable, Hose and Wire Routing



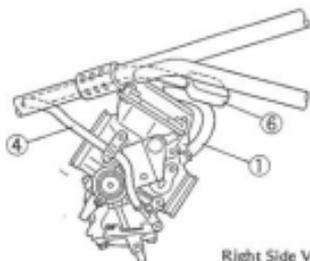
1. Left Switch Housing Wire
2. Clutch Hose
3. Wire Straps
4. Brake Hose
5. Right Switch Housing Wire
6. Cable Guide
7. Throttle Cables
8. Turn Signal Light or Headlight Stay
9. Cable or Hose Guide
10. Speedometer Cable
11. Clamps
12. Cooling Hose
13. Clutch Pipe

1-14 GENERAL INFORMATION

Carburetor Hose Routing

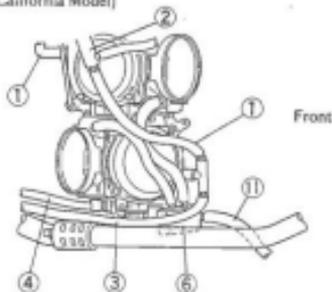


Front

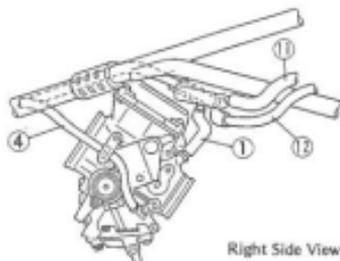


Right Side View

(US. California Model)

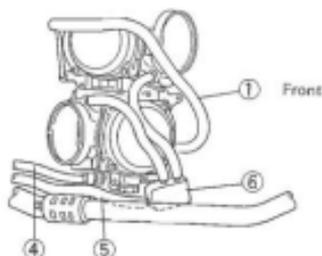


Front



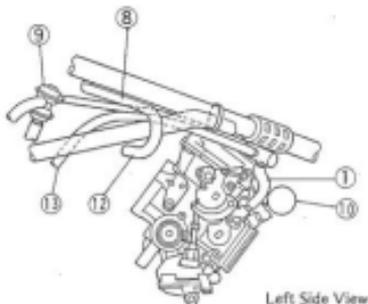
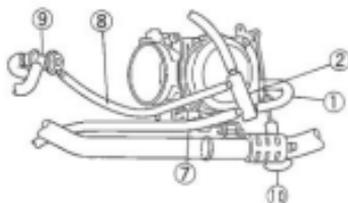
Right Side View

(Canadian Model)



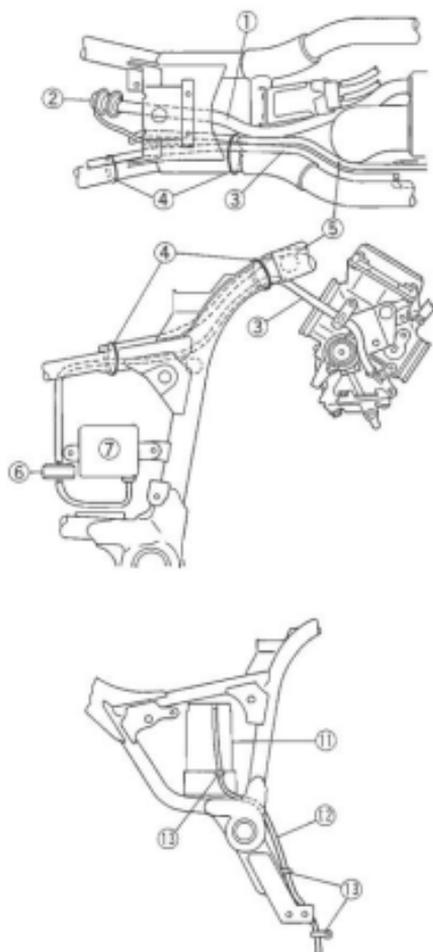
Front

1. Vacuum Hose
2. Vacuum Hose Fitting
3. Vacuum Hose (To Rear Vacuum Switch Valve)
4. Vacuum Hose (To IC Igniter)
5. Air Breather Hose
6. Air Breather Hose Fitting
7. Vacuum Pulse Hose (To Liquid/Vapor Separator)
8. Vacuum Hose (To Front Vacuum Switch Valve)
9. Front Vacuum Switch Valve
10. Choke Knob
11. Air Breather Hose (To Canister)
12. Purge Hose (Between the surge tank and the canister)

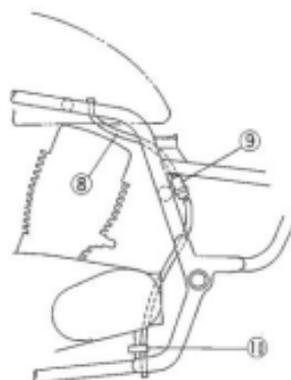


Left Side View

Hose Routing



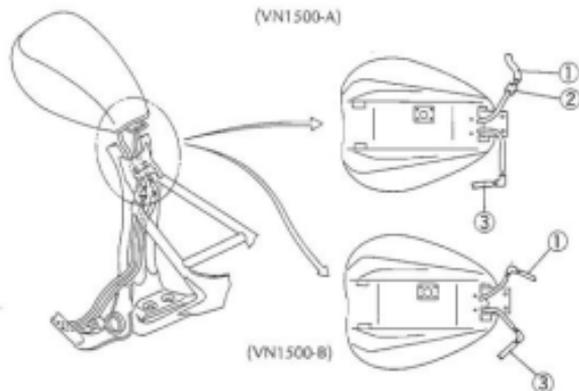
1. Clean Air Hose
2. Rear Vacuum Switch Valve
3. Vacuum Hose
4. Hose Straps
5. Air Breather Hose
6. Air Filter
7. IC Igniter
8. Breather



9. Check Valve (VN1500-A)
10. Hose Guide
11. Battery
12. Battery Vent Hose
13. Hose Guides
14. Surge Tank
15. Drain Hose

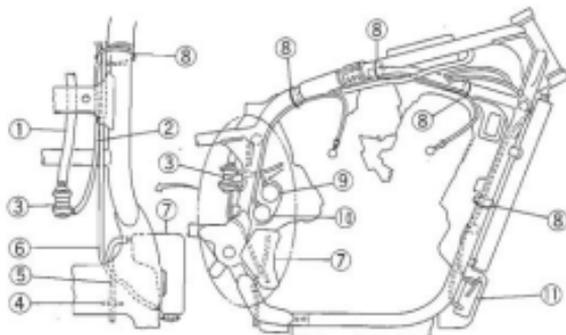
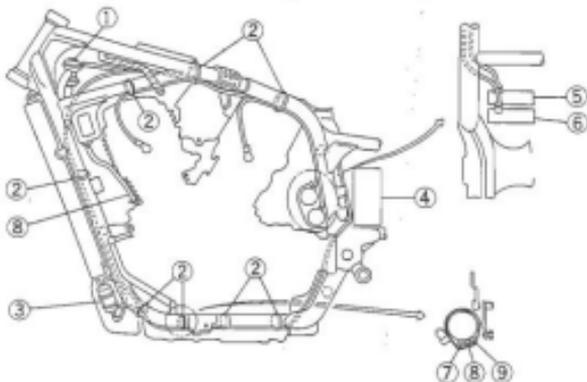
1-16 GENERAL INFORMATION

Evaporative Emission Control System Hose Routing



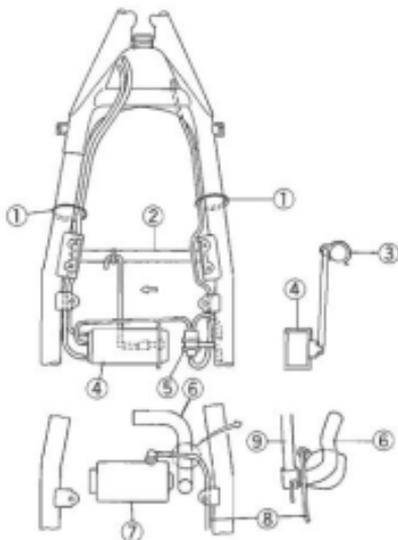
1. Breather Hose
2. Check Valve
3. Return Hose (Red)

1. Front Vacuum Switch Valve
2. Wire or Hose Straps
3. Liquid/Vapor Separator
4. Battery
5. Ignition Coil (Front)
6. Ignition Coil (Rear)
7. Return Hose
8. Breather Hose
9. Starter Motor Wire

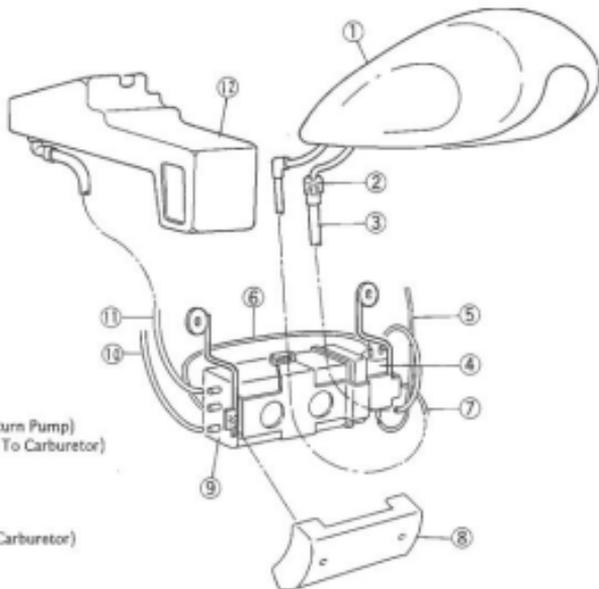


1. Clean Air Hose
2. Vacuum Hose
3. Rear Vacuum Switch Valve
4. Hose Guide
5. Vent Tube
6. Reservoir Tank Tube
7. Reservoir Tank
8. Wire or Hose Straps
9. Ignition Coil (Front)
10. Ignition Coil (Rear)
11. Canister

Evaporative Emission Control System Hose Routing



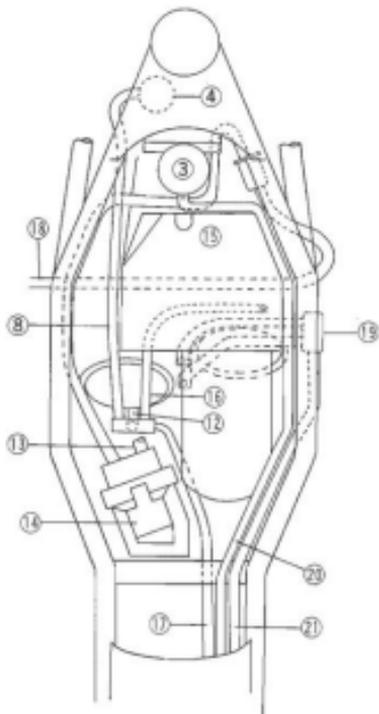
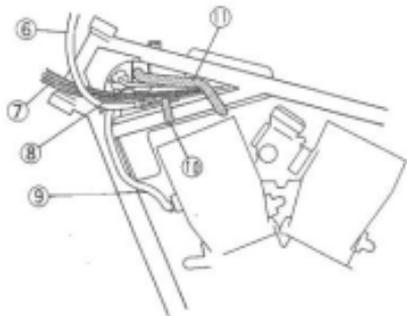
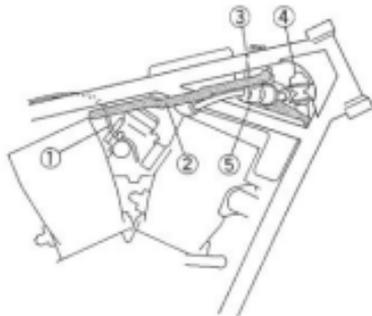
1. Hose Steps
2. Engine Bracket
3. Hose Clamp
4. Canister
5. Liquid/Vapor Separator
6. Cooling Hose
7. Starter Motor
8. Starter Motor Wire
9. Radiator



1. Fuel Tank
2. Check Valve (VN1500-A)
3. Breather Hose (Blue)
4. Liquid/Vapor Separator (Return Pump)
5. Vacuum Pulse Hose (White: To Carburetor)
6. Breather Hose (Blue)
7. Return Hose (Red)
8. Cover
9. Canister
10. Breather Hose (Yellow: To Carburetor)
11. Purge Hose (Green)
12. Surge Tank

1-18 GENERAL INFORMATION

Engine Top End Hose Routing



1. Vacuum Hose (IC Igniter)
2. Cooling Hose
3. Thermostat Housing
4. Front Vacuum Switch Valve
5. Fuel Filter
6. Clutch Hose
7. Throttle Cables
8. Vacuum Hose (To Front Vacuum Switch Valve)
9. Clean Air Hose
10. Clutch Hose Strap
11. Cooling Hose
12. Vacuum Hose (Front Carburetor)
13. Fuel Hose (To Carburetor)
14. Fuel Pump
15. Surge Tank
16. Vacuum Hose (Rear Carburetor)
17. Vacuum Hose (To Rear Vacuum Switch Valve)
18. Fuel Hose (To Fuel Pump)
19. Air Breather Hose Fitting
20. Reservoir Tank Tube
21. Air Breather Hose

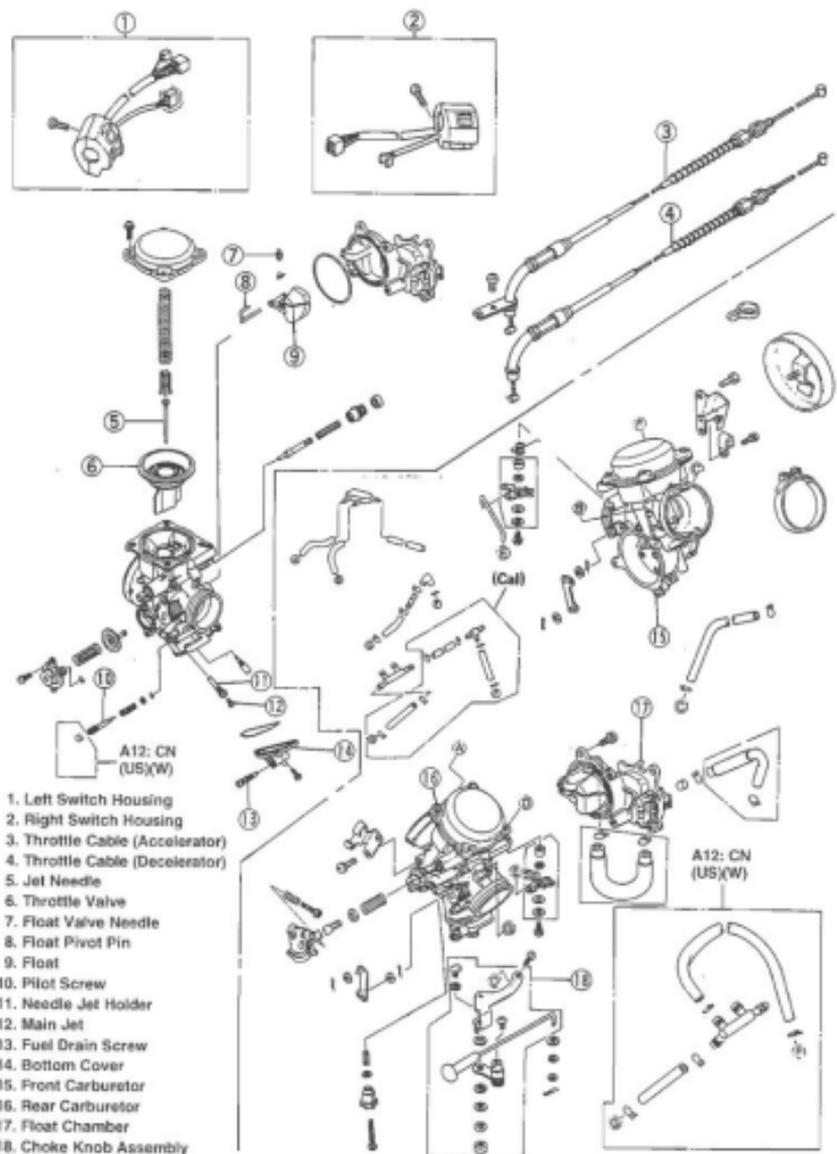
Fuel System

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2-2 FUEL SYSTEM

Exploded View





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