

Product: 1997-2002 Kawasaki KLR650/KLR500 Motorcycle Service Repair Workshop Manual Supplement
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Kawasaki

**KLR650
KLR500**



Motorcycle Service Manual Supplement

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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.

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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.



**WARNING
CONTAINS
ASBESTOS**

Breathing asbestos
dust is dangerous
to health

Follow safety
instructions

This warning may apply to any of the following components or any assembly containing one or more of these components:—

Brake Shoes or Pads
Clutch Friction Material
Gaskets
Insulators

SAFETY INSTRUCTIONS

- Operate if possible out of doors or in a well ventilated place.
- Preferably use hand tools or low speed tools equipped, if necessary, with an appropriate dust extraction facility. If high speed tools are used, they should always be so equipped.
- If possible, dampen before cutting or drilling.
- Dampen dust and place it in properly closed receptacle and dispose of it safely.

Foreword

This KLR650/500 Service Manual Supplement is designed to be used in conjunction with the KLR600 Service Manual (P/N 99924-1050-01). The maintenance and repair procedures described in this Supplement are only those that are unique to the KLR650/500. Most service operations are identical to those for the KLR600. Complete and proper servicing of the KLR650/500 therefore requires both this Supplement and the base Service Manual.

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 product's 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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Before Servicing	*
Model Identification	1-2
Specifications	1-3
Periodic Maintenance Chart	1-6
Torque and Locking Agent	1-7
Cable, Wire, and Hose Routing	1-10

*Refer to Base Manual

1-2 GENERAL INFORMATION

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

KL650-A1:



KL500-A1:



Specifications

Items	KL 650-A1,A2,A3,A4,A5,A6,A7,A8,A9	KL500-A1, A2
Dimensions:		
Overall length	2 290 mm, (C)(S)(U) 2 205 mm, (A) (Au) (B) (F) (Gr) (I) (Sp) 2 250 mm	*
Overall width	940 mm	*
Overall height	1 345 mm	*
Wheelbase	1 495 mm	*
Road clearance	240 mm	*
Seat height	890 mm	*
Dry weight	153 kg, (Ca) 153.5 kg	*
Curb weight: Front	81 kg, (Ca) 81.5 kg	*
Rear	97 kg	*
Fuel tank capacity	23 L	*
Performance:		
Climbing ability	32°	*
Braking distance	12.5 m from 50 km/h	*
Minimum turning radius	2.4 m	*
Engine:		
Type	4-stroke, DOHC, 4-valve, 1-cylinder	*
Cooling system	Liquid cooled	*
Bore and stroke	100.0 x 83.0 mm	89.0 x 80.0 mm
Displacement	651 mL	497 mL
Compression ratio	9.5 : 1	*
Maximum horsepower	35.3 kW (48 PS) @6500 r/min (rpm) (F) 34.2 kW (46.5 PS) @6500 r/min (rpm):UTAC's norms (S) 19.9 kW (27 PS) @5800 r/min (rpm):DIN (C) -A3 19.9 kW (27 PS) @5500 r/min (rpm): DIN (A) -A3 32.4 kW (44 PS) @6500 r/min (rpm)	29.4 kW (40 PS) @7 500 r/min (rpm)
Maximum torque	54.9 N-m (5.6 kg-m, 40.5 ft-lb) @5500 r/min (rpm) (S) 45.1 N-m (4.6 kg-m, 33.3 ft-lb) @2500 r/min (rpm): DIN (C) -A3 48 N-m (4.9 kg-m, 35 ft-lb) @2300 r/min (rpm): DIN (A) -A3 49 N-m (5.0 kg-m, 36 ft-lb) @5000 r/min (rpm)	38.2 N-m (3.9 kg-m, 28.2 ft-lb) @6 000 r/min (rpm)
Carburetion system	Carburetor, Keihin CVK40	*
Starting system	Electric	*
Ignition system	CDI	*
Timing advance	Electronically advanced	*
Ignition timing	From 10° BTDC @1 300 r/min (rpm) to 30° BTDC @3 300 r/min (rpm)	*
Spark Plug	NGK DPR8EA-9 or ND X24EPR-U9 (A)(I)(S)(U) NGK DP8EA-9, or ND X24EP-U9	*

1-4 GENERAL INFORMATION

Items	KL 650-A1,A2,A3,A4,A5,A6,A7,A8,A9	KL500-A1, A2	
Valve timing:			
Inlet	Open	19° (BTDC)	*
	Close	69° (ABDC)	*
	Duration	268°	*
Exhaust	Open	57° (BBDC)	*
	Close	31° (ATDC)	*
	Duration	268°	*
Lubrication system		Forced lubrication (wet sump)	*
Engine oil:			
Grade		SE or SF class	*
Viscosity		SAE10W40, 10W50, 20W40, or 20W50	*
Capacity		2.5 L	*
Drive Train:			
Primary reduction system:			
Type		Gear	*
Reduction ratio		2.272 (75/33)	*
Clutch type		Wet multi disc	*
Transmission:			
Type		5-speed, constant mesh, return shift	*
Gear ratios: 1st		2.266 (34/15)	*
	2nd	1.529 (26/17)	*
	3rd	1.181 (26/22)	*
	4th	0.954 (21/22)	*
	5th	0.791 (19/24)	*
Final drive system:			
Type		Chain drive	*
Reduction ratio		2.866 (43/15)	3.133 (47/15)
Overall drive ratio		5.157 @Top gear	5.637 @Top gear
Frame:			
Type		Tubular, semi-double cradle	*
Caster (rake angle)		28°	*
Trail		112 mm	*
Front Tire:			
Type		Tube type	*
Size		90/90-21 54S	*
Rear Tire:			
Type		Tube type	*
Size		130/80-17 65S	*
Front suspension:			
Type		Telescopic fork (pneumatic)	*
Wheel travel		230 mm	*

Items	KL 650-A1,A2,A3,A4,A5,A6,A7,A8,A9	KL500-A1, A2
Rear suspension:		
Type	Swing arm (uni-trak)	*
Wheel travel	230 mm	*
Brake type:		
Front	Single disc	*
Rear	Single disc	*
Electrical Equipment:		
Battery	12 V 14 Ah	*
Headlight:		
Type	Semi-Sealed beam	*
Bulb	12 V 60/55 W (quartz-halogen)	*
Tail/brake light	12 V 5/21 W, (C)(S)(U) 12 V 8/27 W	*
Alternator:		
Type	Three-phase AC	*
Rated output	14 A @8 000 r/min (rpm), 14 V	*
Voltage regulator:		
Type	Short-circuit	*

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

* : Same as KL650-A1

Abbreviation

(A) : Australian Model

(Au) : Austrian Model

(B) : U.K. Model

(C) : Canadian Model

(Ca) : Californian Model

(F) : French Model

(G) : West German Model

(I) : Italian Model

(S) : South African Model

(Sp) : Spanish Model

(U) : U.S. Model

(Gr) : Greek Model

1-6 GENERAL INFORMATION

Periodic Maintenance Chart

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	Whichever comes first		† ODOMETER READING						
		Every	800 km	5 000 km	10 000 km	15 000 km	20 000 km	25 000 km	30 000 km	See Page
Spark plug – clean			•	•	•	•	•	•	•	(14-9)
Spark plug – check *			•	•	•	•	•	•	•	(14-7)
Valve clearance – check *		•		•		•		•		(3-11)
Air cleaner element – clean		•		•		•		•		(2-7)
Air cleaner element – replace	5 cleanings					•				2-5
Throttle grip play – check *		•		•		•		•		12-5
Idle speed – check *		•	•	•	•	•	•	•	•	(2-4)
Fuel system – check *				•		•		•		(2-8)
Coolant – change	2 years							•		(5-4)
Spark arrestor – clean (for Ⓚ, © model)			•	•	•	•	•	•		3-7
Evaporative emission control system – check (for © model) *		•	•	•	•	•	•	•		(2-10)
Engine oil – change	Year	•		•		•		•		4-7
Oil filter – replace		•		•		•		•		(4-13)
Radiator hoses, connections – check *	year	•		•		•		•		(5-8)
Fuel hoses, connections – check *			•	•	•	•	•	•		---
Fuel hose – replace	4 years									---
Balancer chain tension – adjust		•	•	•	•	•	•	•		(4-16)
Clutch – adjust		•	•	•	•	•	•	•		(4-8)
Drive chain wear – check *			•	•	•	•	•	•		(9-4)
Drive chain – lubricate	300 km									(9-5)
Drive chain slack – check *	800 km									9-3
Brake lining wear – check *			•	•	•	•	•	•		(10-4)
Brake fluid level – check *	month	•	•	•	•	•	•	•		10-5, 7
Brake fluid – change	2 years					•				(10-4)
Brake hoses, connections – check *			•	•	•	•	•	•		---
Brake hose – replace	4 years									---
Master cylinder cup and dust seal – replace	2 years									---
Caliper piston seal and dust seal – replace	2 years									---
Brake light switch – check *		•	•	•	•	•	•	•		(10-11)
Steering – check *		•	•	•	•	•	•	•		(11-6)
Steering stem bearing – lubricate	2 years					•				(11-7)
Front fork oil – change								•		11-6
Tire wear – check *			•	•	•	•	•	•		(8-5)
Spoke tightness and rim runout – check *		•	•	•	•	•	•	•		(8-6)
Swing arm pivot, uni-trak linkage – lubricate				•		•		•		(11-14)
Battery electrolyte level – check *	month	•	•	•	•	•	•	•		(14-4)
General lubrication – perform			•	•	•	•	•	•		15-2
Nut, bolt, and fastener tightness – check *		•		•		•		•		15-2

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

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

© : Californian Model

Ⓚ : U.S. Model

© : Canadian Model

(Page) : See Base Manual

.....
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.

LG : Apply liquid gasket to the threads.

LS : Apply liquid gasket (silicone sealant) to the threads.

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

S : Tighten the fasteners following the specified sequence.

Fastener	Torque			Remarks
	N-m	kg-m	ft-lb	
Engine Top End:				
Cylinder head cover bolts	7.8	0.80	69 in-lb	
Camshaft cap bolts	12	1.2	104 in-lb	
Camshaft sprocket bolts	49	5.0	36	L
Oil pipe banjo bolts	20	2.0	14.5	
Cylinder head bolts: 10 mm	65	6.6	48	M, S
8 mm	18	1.8	13.0	S
6 mm	9.8	1.0	87 in-lb	S
Cylinder head nuts	25	2.5	18.0	S
Cylinder bolt	9.8	1.0	87 in-lb	S
Cylinder nuts	25	2.5	18.0	S
Engine Right Side/Left Side:				
Cover damper mounting bolts	9.8	1.0	87 in-lb	L
Clutch spring bolts	9.8	1.0	87 in-lb	
Clutch hub nut	130	13.5	98	
Primary gear nut	120	12.0	87	
Oil pressure relief valve	15	1.5	11.0	L
Balancer shaft (front) right end nut	44	4.5	33	
Balancer chain guide (inner) bolts				
8 mm	25	2.5	18.0	L
6 mm	12	1.2	104 in-lb	L
Shift return spring pin	—	—	—	L
Engine drain plug	23	2.3	16.5	
Oil pipe banjo bolts	20	2.0	14.5	
Cooling System:				
Radiator fan switch	7.4	0.75	65 in-lb	
Water temperature sender	15	1.5	11.0	LS
Impeller nut	9.8	1.0	87 in-lb	

1-8 GENERAL INFORMATION

Fastener	Torque			Remarks
	N-m	kg-m	ft-lb	
Engine Removal/Installation:				
Engine mounting bolts and nuts				
10 mm	44	4.5	33	S
8 mm	25	2.5	18.0	S
Engine mounting bracket bolts and nuts				
(8 mm)	25	2.5	18.0	
Swing arm pivot bolt and nut				
(14 mm)	98	10.0	72	S
Engine Bottom End/Transmission:				
Crankshaft bearing retainer screws	—	—	—	L
Shift drum pin plate bolt	12	1.2	104 in-lb	L
Wheels/Tires:				
Front axle nut	78	8.0	58	
Rear axle nut	93	9.5	69	
Spoke nipples	2.0 – 3.9	0.2 – 0.4	17 – 35 in-lb	
Final Drive:				
Engine sprocket bolts	9.8	1.0	87 in-lb	
Rear sprocket studs	—	—	—	L
Rear sprocket nuts	32	3.3	24	
Brakes:				
Front master cylinder clamp bolts	8.8	0.90	78 in-lb	
Rear master cylinder mounting bolts	23	2.3	16.5	
Caliper mounting bolts	25	2.5	18.0	
Disc mounting bolts	23	2.3	16.5	
Brake hose banjo bolts	25	2.5	18.0	
Air bleed valves	7.8	0.80	69 in-lb	
Brake lever pivot nut	5.9	0.60	52 in-lb	
Suspension/Steering:				
Front fork clamp bolts and nuts	25	2.5	18.0	
Air valves	12	1.2	104 in-lb	L
Fork top bolts	29	3.0	22	
Fork bottom Allen bolts	39	4.0	29	L
Fork drain screws	—	—	—	LG
Rear shock absorber mounting				
bolts and nuts: Upper (12 mm)	59	6.0	43	
Lower (14 mm)	98	10.0	72	
Swing arm pivot bolt and nut (14 mm)	98	10.0	72	
Rocker arm pivot bolt and nut (14 mm)	98	10.0	72	
Tie-rod bolts and nuts (14 mm)	98	10.0	72	
Steering stem head nut	39	4.0	29	

Fastener	Torque			Remarks
	N-m	kg-m	ft-lb	
Controls/Instruments:				
Handlebar clamp bolts	24	2.4	17.5	
Frame:				
Rear frame mounting bolts	25	2.5	18.0	
Electrical System:				
Spark plug	14	1.4	10.0	
Magneto flywheel bolt	175	18.0	130	
Starter motor mounting bolts	9.8	1.0	87 in-lb	
Starter clutch bolts	34	3.5	25	L

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.

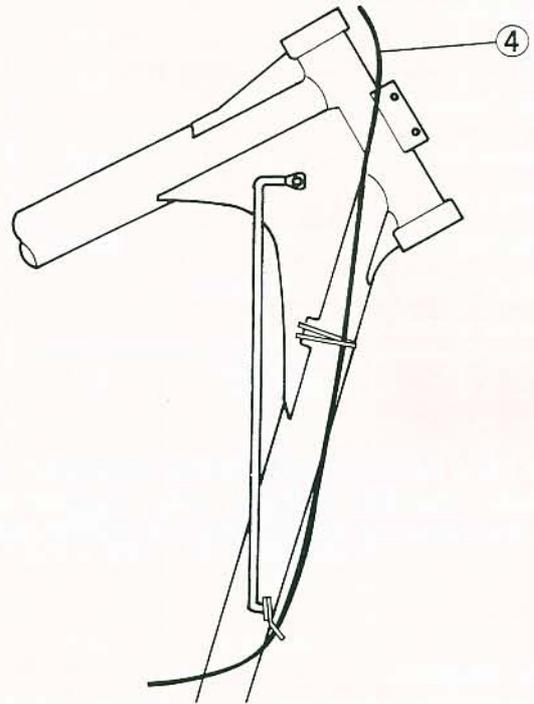
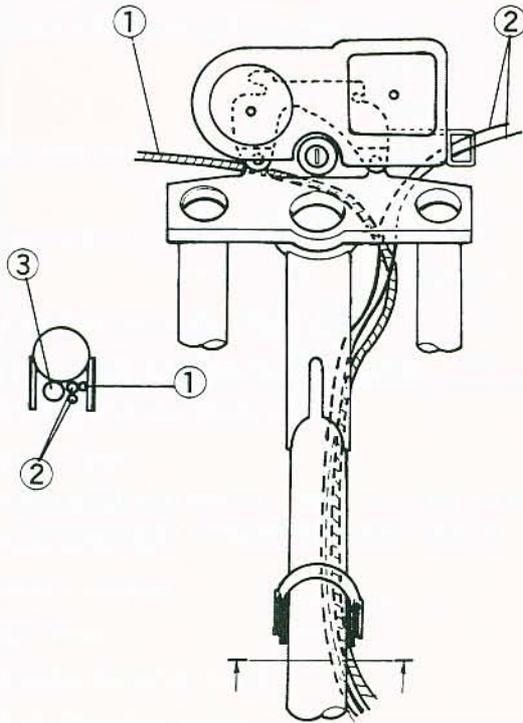
General Fasteners:

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	0.60 – 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

1-10 GENERAL INFORMATION

Cable, Wire, and Hose Routing

Control Cables

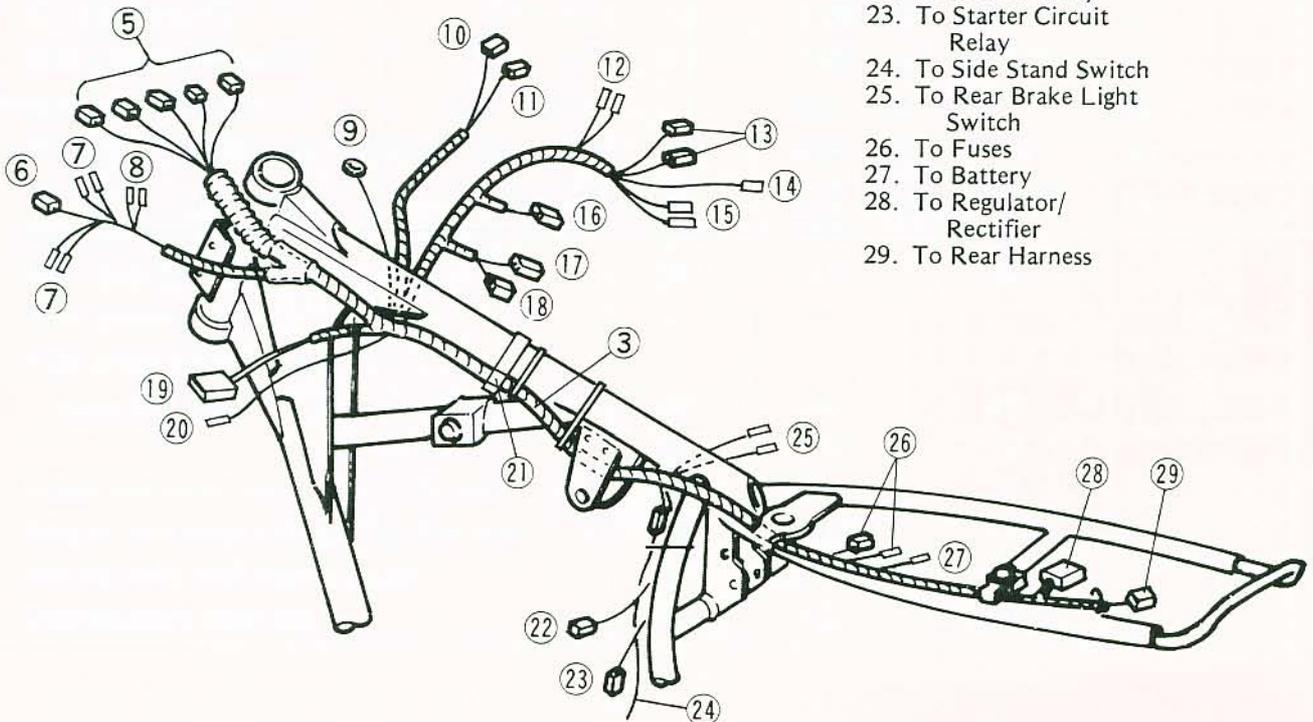


- 1. Choke Cable
- 2. Throttle Cable
- 3. Main Harness
- 4. Clutch Cable
- 5. To Meter Bracket
- 6. To Headlight
- 7. To Turn Signal Light
- 8. To City Light

- 9. Ground Lead
- 10. To Diode Assembly
- 11. To Turn Signal Relay
- 12. To Horn
- 13. To CDI Unit
- 14. To Water Temperature Sender
- 15. To Ignition Coil

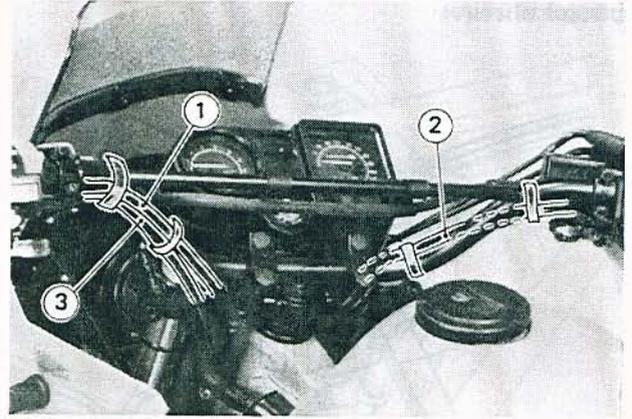
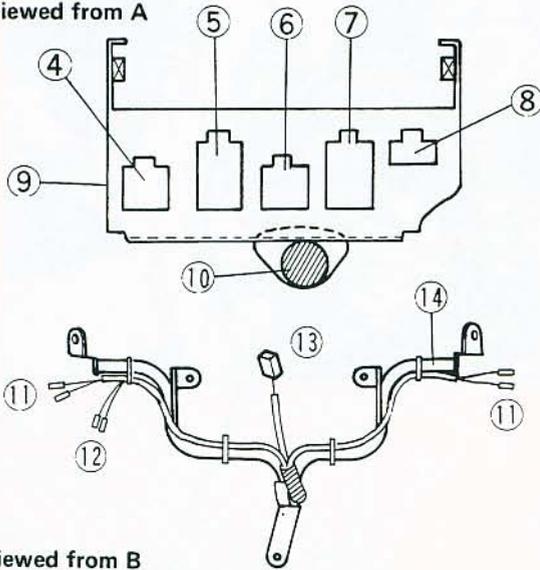
- 16. To Magneto
- 17. To Neutral Switch and Pickup Coil
- 18. To Radiator Fan Relay
- 19. To Radiator Fan
- 20. To Radiator Fan Switch
- 21. Harness Position Mark
- 22. To Starter Relay
- 23. To Starter Circuit Relay
- 24. To Side Stand Switch
- 25. To Rear Brake Light Switch
- 26. To Fuses
- 27. To Battery
- 28. To Regulator/Rectifier
- 29. To Rear Harness

Electrical Wires



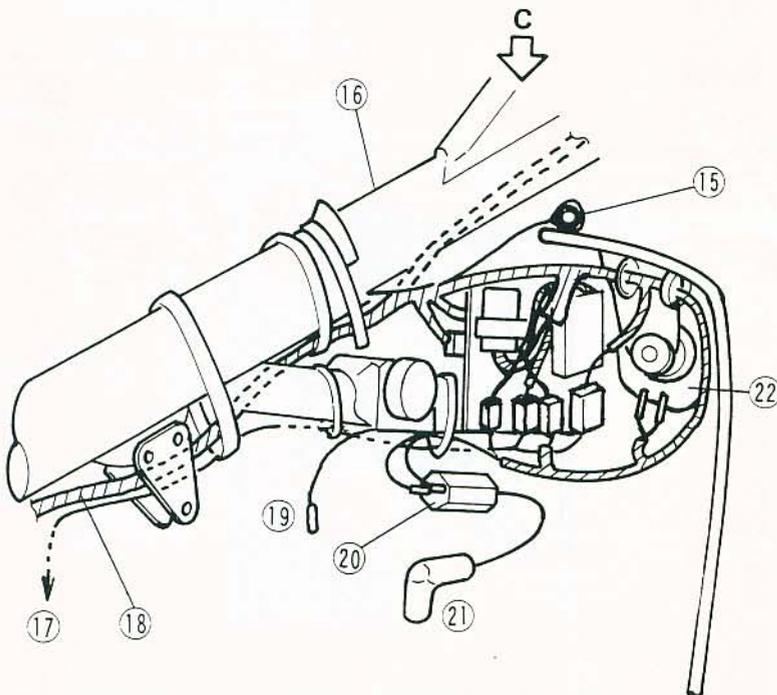
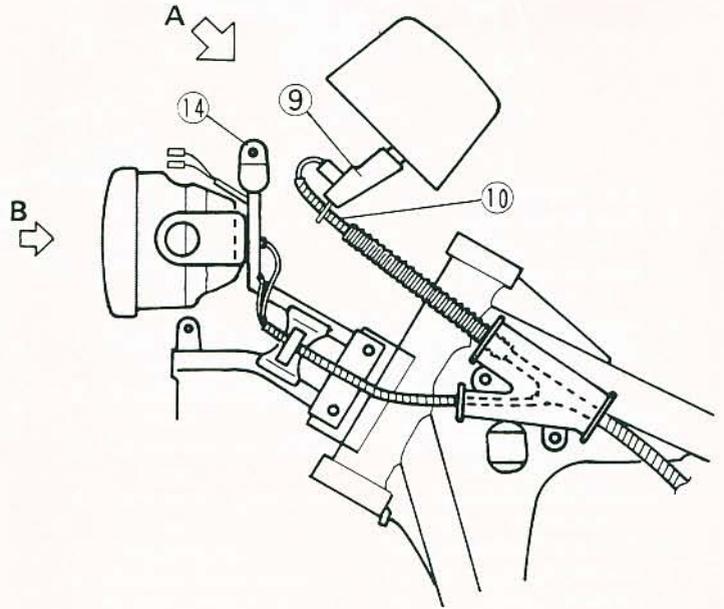
Electrical Wires

Viewed from A



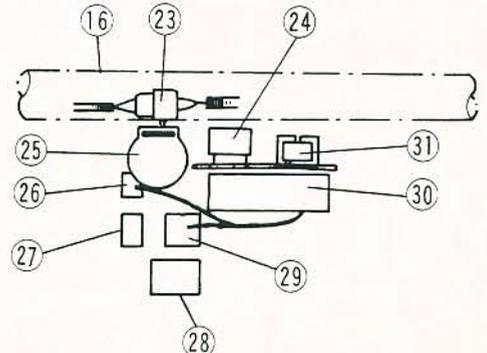
Viewed from B

- | | |
|---|---------------------------------------|
| 1. LH Switch Leads | 13. To Headlight |
| 2. RH Switch Leads | 14. Headlight Bracket |
| 3. Starter Lockout Switch Leads | 15. Ground Lead |
| 4. RH Switch 6P Connector (Red) | 16. Frame Top Tube |
| 5. Meter 9P Connector | 17. To Neutral Switch and Pickup Coil |
| 6. Ignition Switch 6P Connector (Black) | 18. Main Harness |
| 7. LH Switch 9P Connector (Red) | 19. To Water Temperature Sender |
| 8. Starter Lockout Switch 3P Connector | 20. Ignition Coil |
| 9. Meter Bracket | 21. Spark Plug Cap |
| 10. Main Harness | 22. Horn |
| 11. To Turn Signal Light | 23. Radiator Fan Connector |
| 12. To City Light | 24. Turn Signal Relay |
| | 25. Radiator Fan Relay |
| | 26. CDI Unit 2P Connector |



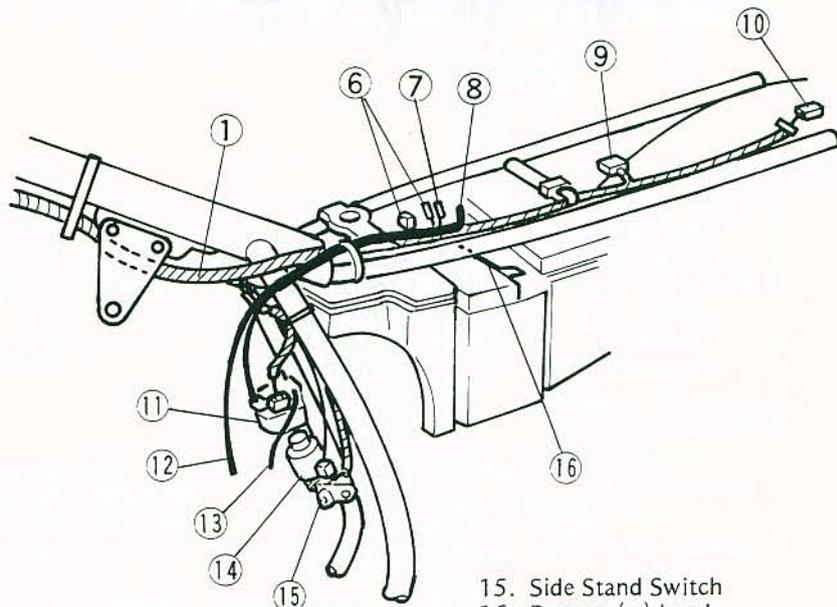
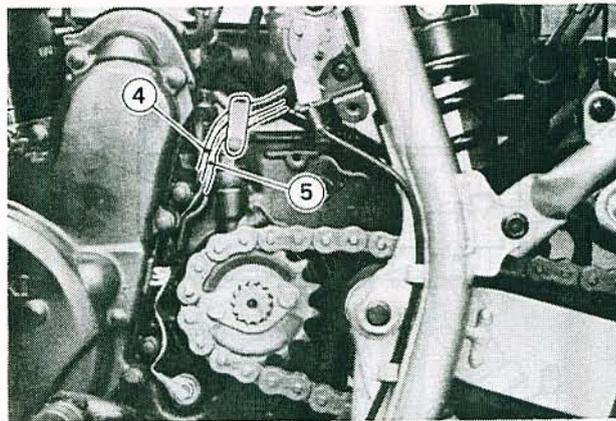
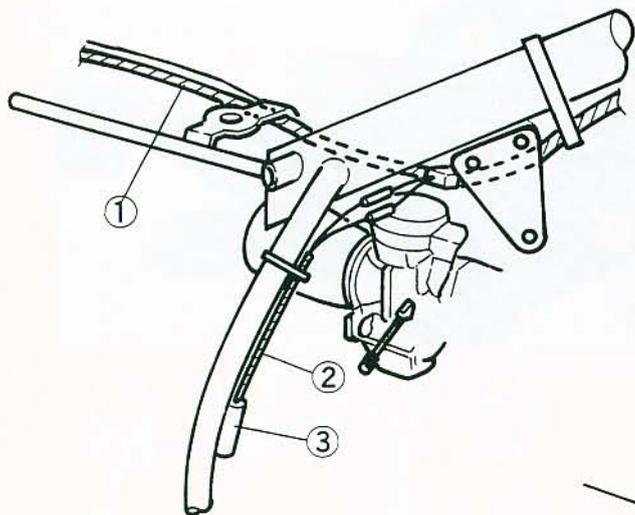
- | |
|---|
| 27. Neutral Switch and Pickup Coil 3P Connector |
| 28. Magneto 6P Connector |
| 29. CDI Unit 6P Connector |
| 30. CDI Unit |
| 31. Diode Assembly |

Viewed from C



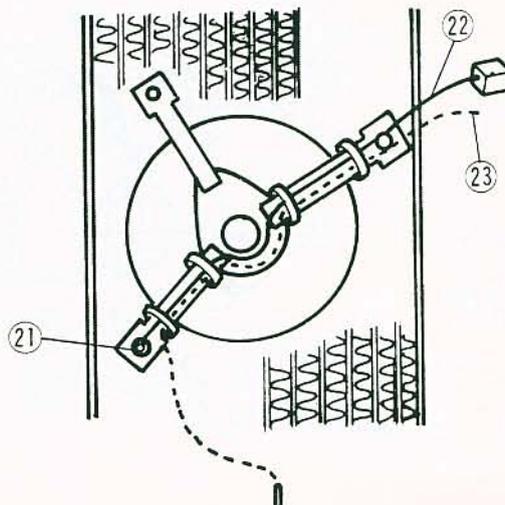
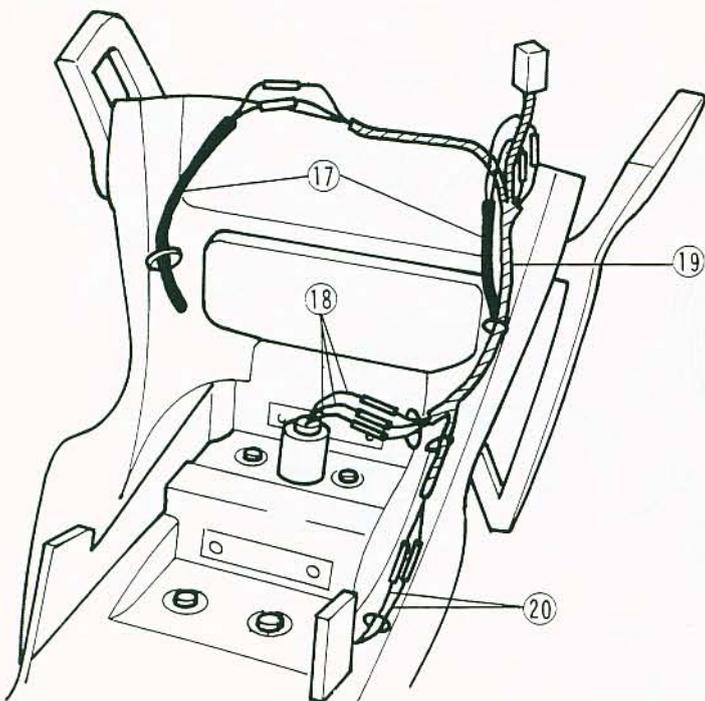
1-12 GENERAL INFORMATION

Electrical Wires

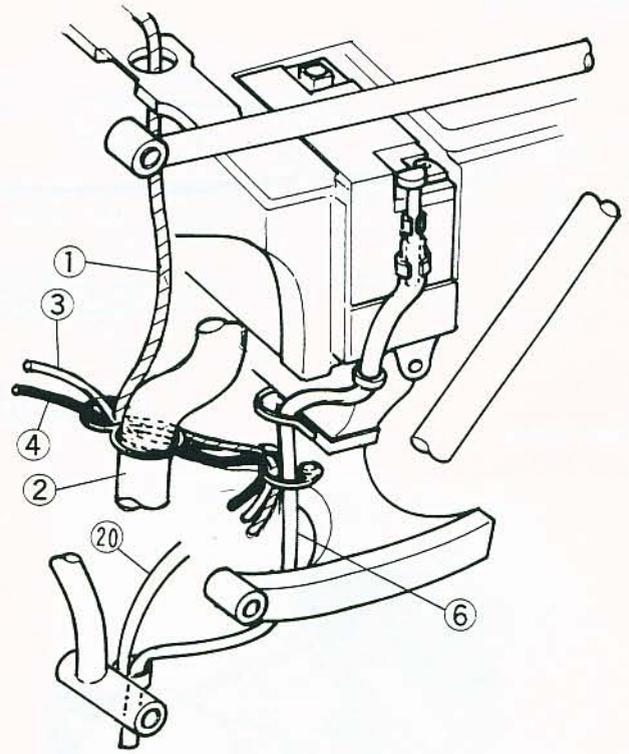
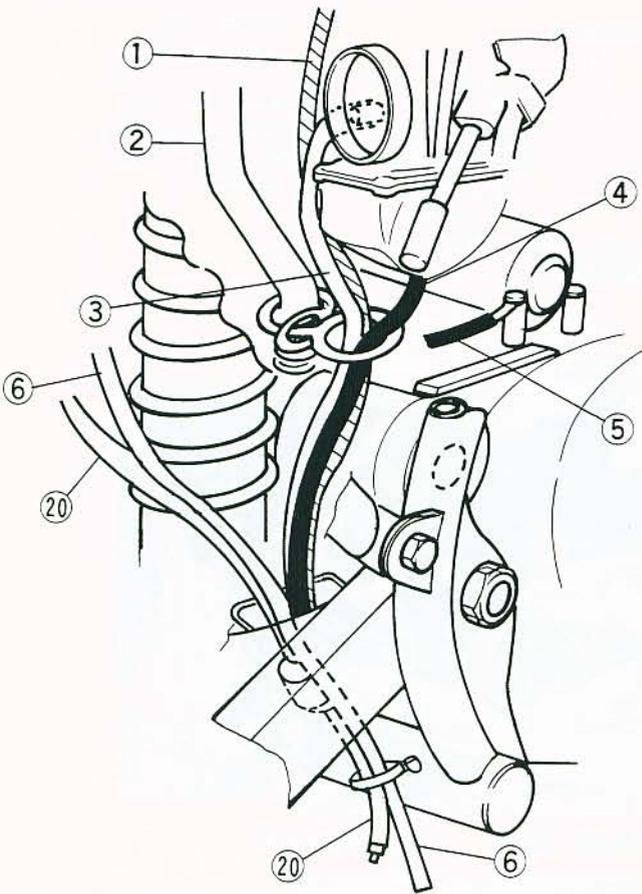


- 1. Main Harness
- 2. Rear Brake Light Switch Leads
- 3. Rear Brake Light Switch
- 4. Magneto Leads
- 5. Neutral Switch and Pickup Coil Leads
- 6. To Fuses
- 7. To Battery
- 8. Battery (+) Lead
- 9. To Regulator/Rectifier
- 10. To Rear Harness
- 11. Starter Relay
- 12. Ground Lead
- 13. Starter Motor Lead
- 14. Starter Circuit Relay

- 15. Side Stand Switch
- 16. Battery (-) Lead
- 17. Turn Signal Light Leads
- 18. Tail/Brake Light Leads
- 19. Rear Harness
- 20. License Plate Light Leads
- 21. Ground Lead
- 22. Radiator Fan Leads
- 23. Radiator Fan Switch Lead

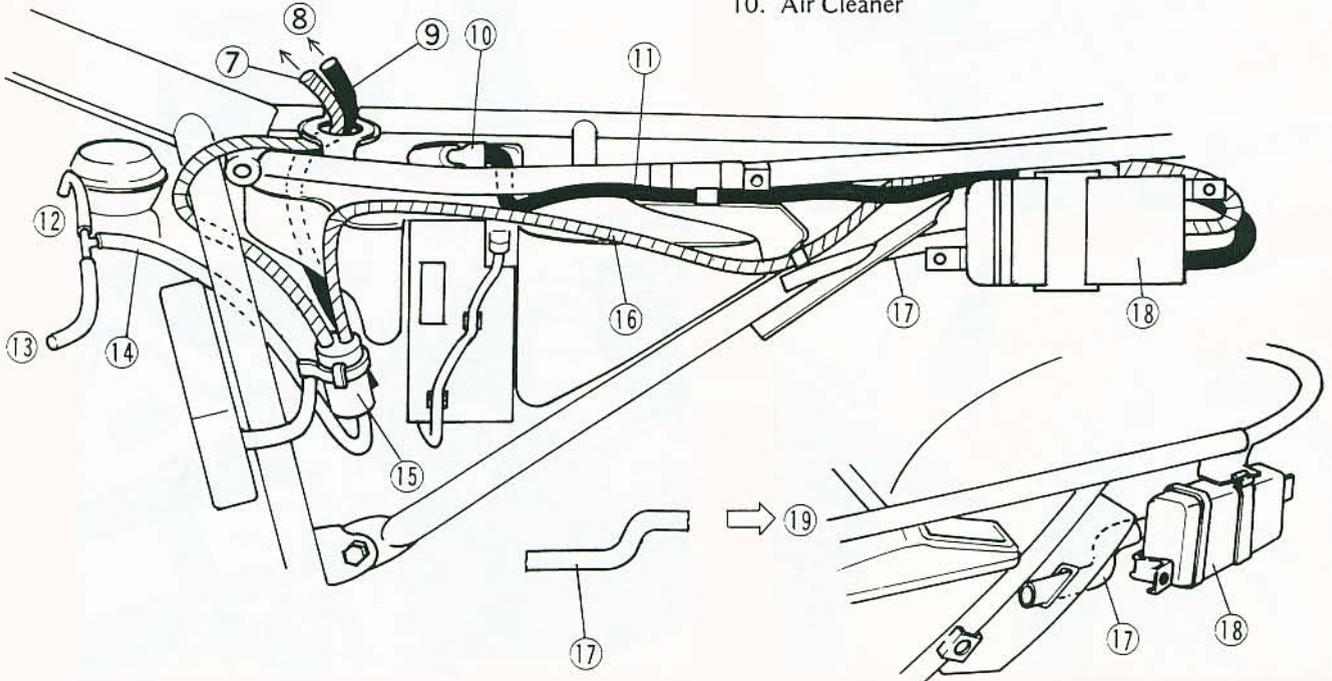


Fuel Hoses and Battery Vent Hose



- | | |
|-----------------------------|-----------------------------------|
| 1. Fuel Tank Breather Hose | 11. Purge Hose (Green) |
| 2. Crankcase Breather Hose | 12. To Carburetor |
| 3. Carburetor Air Vent Hose | 13. To Fuel Tap |
| 4. Carburetor Overflow Hose | 14. Vacuum Hose (White) |
| 5. Ground Lead | 15. Liquid/Vapor Separator |
| 6. Battery Vent Hose | 16. Breather Hose (Blue) |
| 7. Breather Hose (Blue) | 17. Hose |
| 8. To Fuel Tank | 18. Canister |
| 9. Fuel Return Hose (Red) | 19. To Canister |
| 10. Air Cleaner | 20. Air Cleaner Drain Hose (A3 ~) |

Vacuum Hoses and Breather Hoses (Californian Model)



Fuel System

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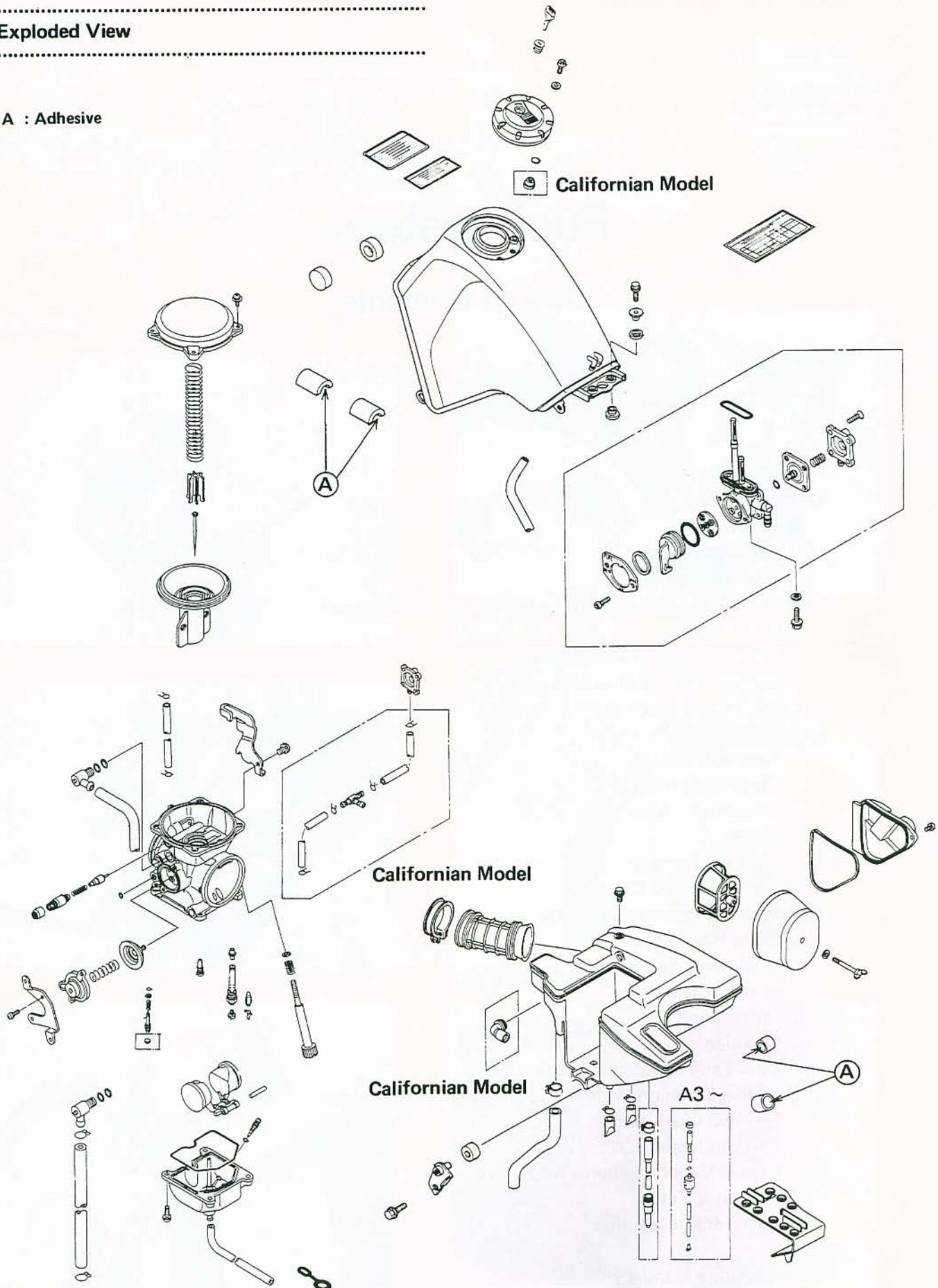
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*Refer to Base Manual

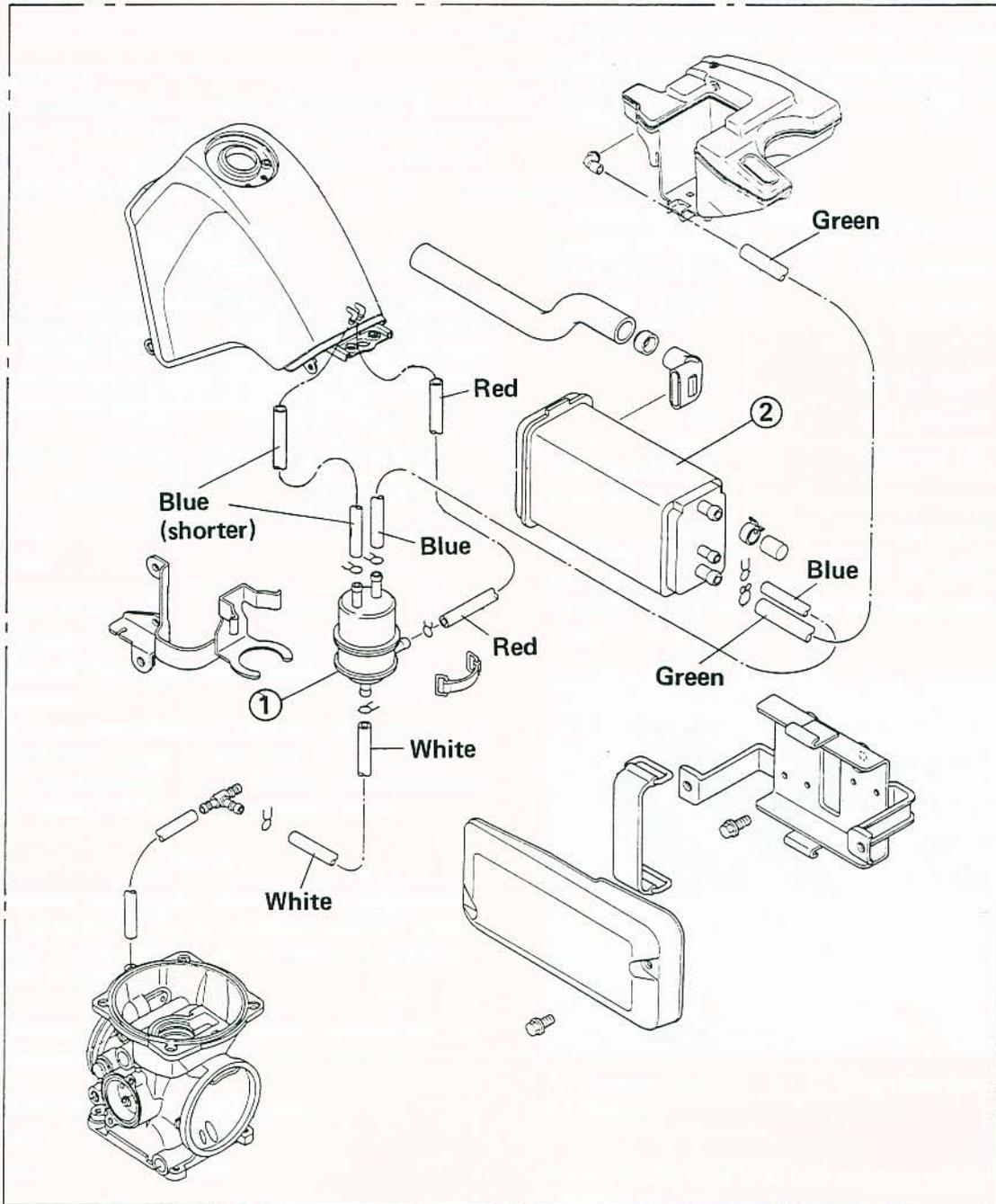
2-2 FUEL SYSTEM

Exploded View

A : Adhesive



Californian Model



- 1. Liquid/Vapor Separator
- 2. Canister

2-4 FUEL SYSTEM

Specifications

Item	KL500-A1, A2	KL650-A1, A2	KL650-A3 ~
Carburetor:			
Idle speed	1300 ± 100 r/min (rpm)	←	←
Standard specifications:			
Make, type	Keihin, CVK40	←	←
Main jet	#148	#150, (U) #148, (W) #155	#145, (U) (W) #148
Main air jet	#50	←	←
Needle jet	#6	←, (W) #7	#6
Jet needle	N31W	N31T, (U) N31R, (W) N60B	N74C, (U) N31R, (W) N60N
Pilot jet	#40	←	←
Pilot air jet	#80	#70	←
Pilot screw	1 ³ / ₄ turns out	1 ³ / ₈ turns out, (U) - (G) (W) 1 ¹ / ₂	1 ⁷ / ₈ turns out, (U) -, (W) 1 ³ / ₄
Starter jet	#52	←	←
Service fuel level	-0.5 ± 1 mm	←	←
Float height	17.5 mm	←	←
Height altitude adjustment (US model):			
Main jet		#145	←
Pilot jet		#38	←
Air Cleaner:			
Element oil: Grade	SE class	←	←
Viscosity	SAE30	←	←

(G) : West German Model

(U) : U.S. Model

(W) : Swiss Model

Fuel Tank

Removal Point

- Before removing the fuel tank or disconnecting the fuel hose from the fuel tap, turn the fuel tap lever to the OFF position to prevent fuel leaking out while the tank is removed or the hose is disconnected.

WARNING

- Gasoline is extremely flammable and can be explosive under certain conditions. Turn the ignition switch OFF. Do not smoke. Make sure the area is well ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.

Carburetor Disassembly:

Carburetor Installation

Refer to the Base Manual, noting the following.

- Refer to Cable, Wire, and Hose Routing in the chapter 1 for the carburetor overflow tube and air vent tube routing.

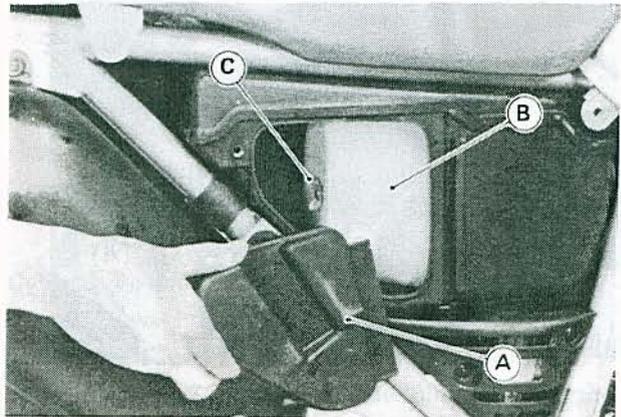
Adjustment after Installation

- Adjust the following.
 - Throttle Grip
 - Choke Lever
 - Idle Speed

Air Cleaner

Element Removal

- Remove the right side cover.
- Remove the screws and take off the air cleaner element cap.



A. Element Cap C. Wing Head Bolt
B. Element

- Remove the wing head bolt and take off the air cleaner element.
- Push a clean, lint-free towel into the air cleaner housing to keep dirt or other foreign material from entering.

CAUTION

- If dirt gets through into the engine, excessive engine wear and possibly engine damage will occur.

Element Installation Points

- Coat the element lip with a layer of all purpose grease to assure a complete seal against the cleaner case.
- Be sure the foam gasket is in place in the groove in the element cap.

Carburetor

Adjustment:

High Altitude Performance Adjustment (US model)

To improve the Emission Control Performance of vehicle operated above 4 000 feet (1 219 meters), Kawasaki recommends the following Environmental protection Agency (EPA) approved modification.

NOTE

○ When properly performed, these specified adjustments are not considered to be emission control system "tampering" and vehicle performance is generally unchanged as a result.

- High altitude adjustments require replacement of certain carburetor jets.

High Altitude Carburetor Specifications

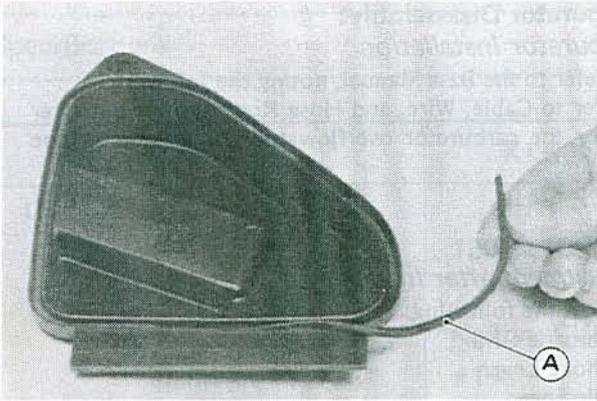
Main Jet: #145
Pilot Jet: #38

- After high altitude adjustments are performed, provide the customer with the Vehicle Emission Control Information Update Label and label installation instructions (P/N 99969-0614).
- Advise the customer that by law, the Vehicle Emission Control Information Update Label must be affixed to any vehicle modified with the high altitude adjustments.

NOTE

○ If a vehicle with the high altitude adjustments is used below 4 000 feet (1 219 meters), the update label must be removed and the original carburetor parts must be reinstalled.

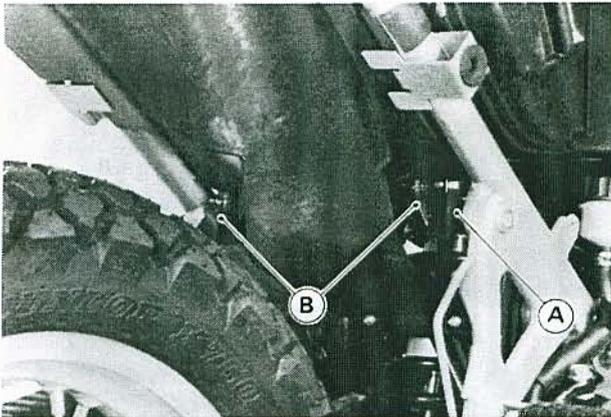
2-6 FUEL SYSTEM



A. Foam Gasket

Body Installation Point

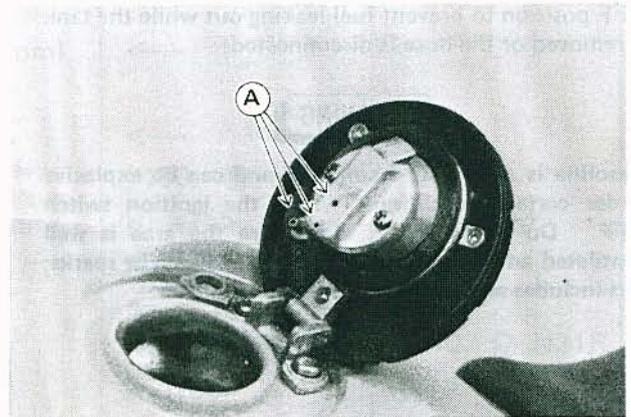
- If the air cleaner body drain tubes were removed, install them in place on the bottom of the housing. The longer drain tube including the air filter must be installed the rear side fitting (dirty side fitting).



A. Long Drain Tube B. Short Drain Tubes

CAUTION

- Do not apply compressed air to the air vent holes on the tank cap. This could cause damage and clogging of the labyrinth in the cap.



A. Air Vent Holes

Fuel System Cleanliness

Fuel Tank and Cap Inspection

- Visually inspect the gasket on the tank cap for any damage.
- ★ Replace the gasket if it is damaged.
- Remove the hose(s) from the fuel tank, and open the tank cap.
- Check to see if the breather and water drain pipes (also the fuel return pipe for the US California vehicle) in the tank are not clogged. Check the tank cap breather too.
- ★ If the tank pipes are clogged, remove the tank and drain it and then blow the pipes free with compressed air.
- ★ If the tank cap breather is clogged, replace it.

Engine Top End

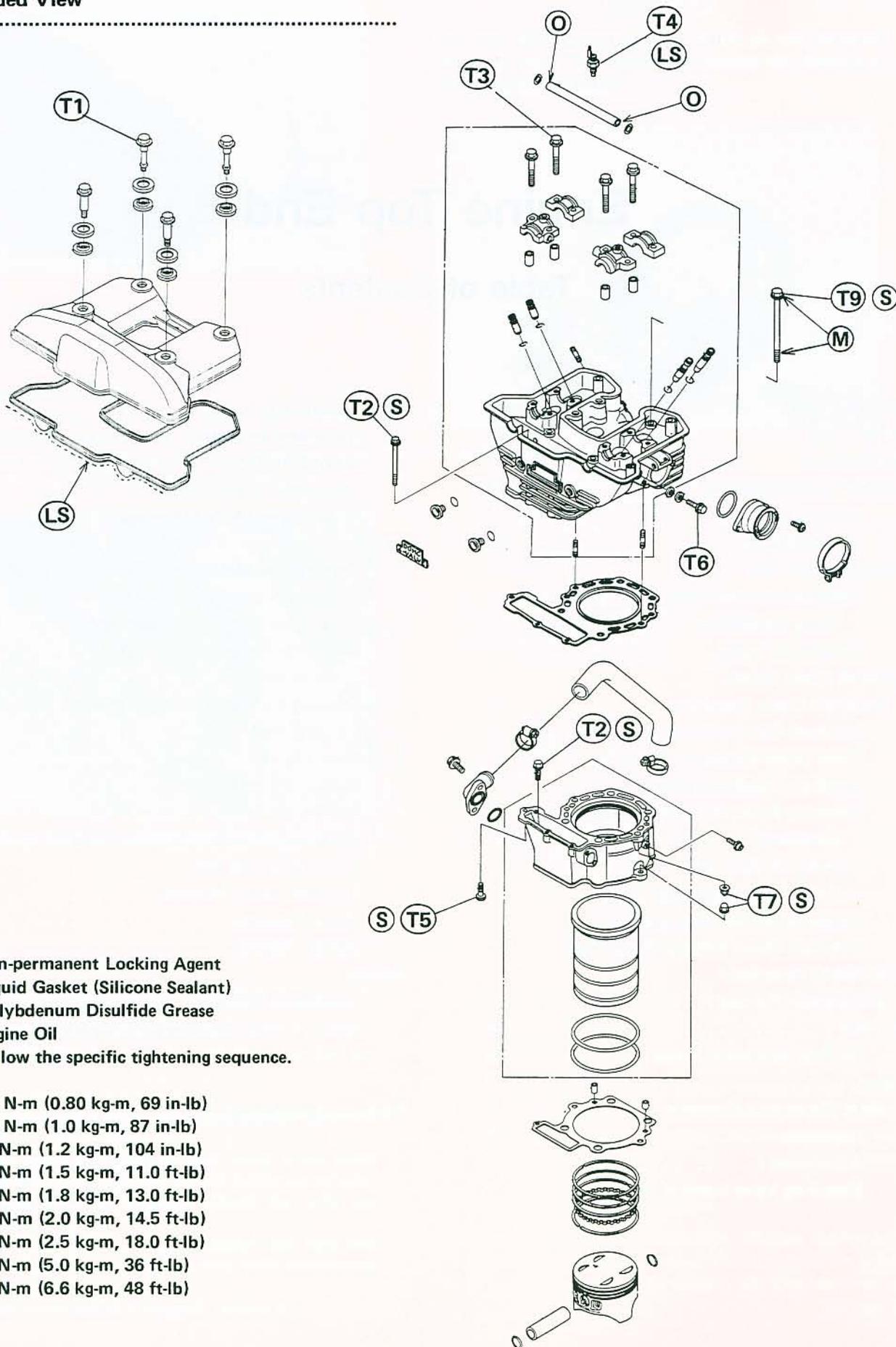
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*Refer to Base Manual

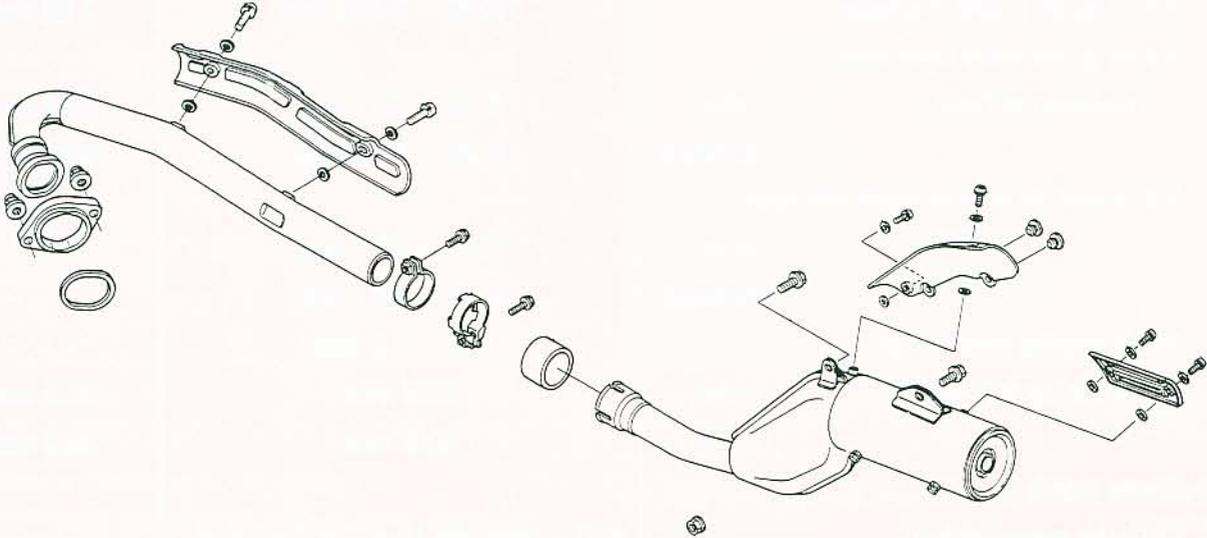
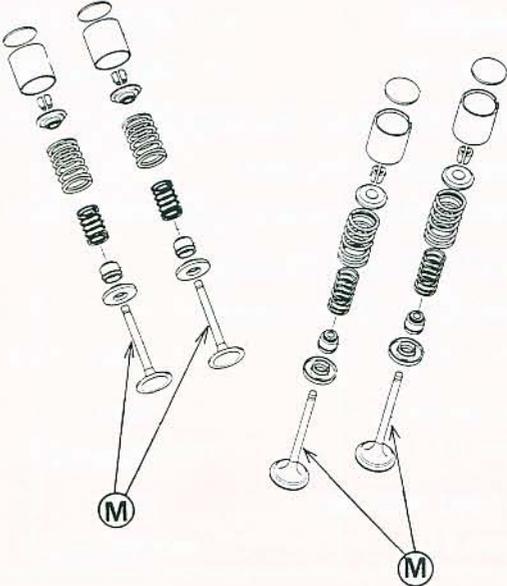
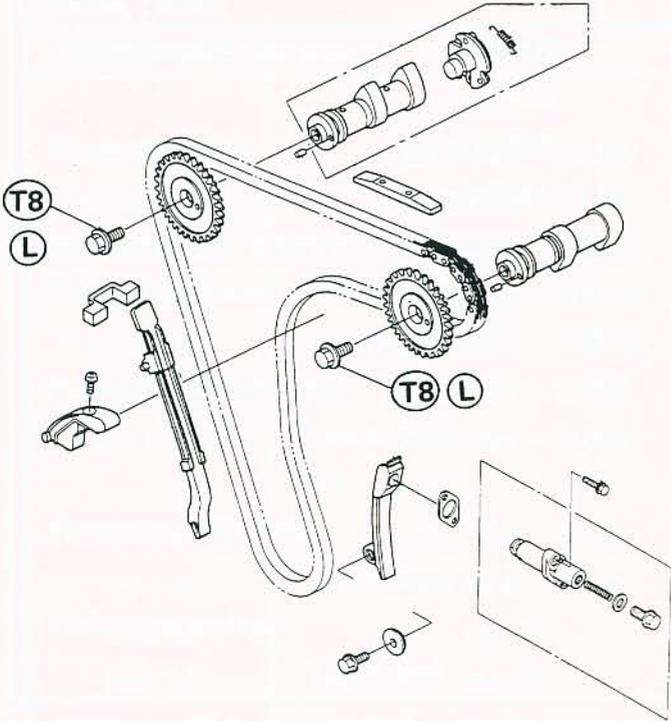
3-2 ENGINE TOP END

Exploded View



- L : Non-permanent Locking Agent
- LS: Liquid Gasket (Silicone Sealant)
- M : Molybdenum Disulfide Grease
- O : Engine Oil
- S : Follow the specific tightening sequence.

- T1: 7.8 N-m (0.80 kg-m, 69 in-lb)
- T2: 9.8 N-m (1.0 kg-m, 87 in-lb)
- T3: 12 N-m (1.2 kg-m, 104 in-lb)
- T4: 15 N-m (1.5 kg-m, 11.0 ft-lb)
- T5: 18 N-m (1.8 kg-m, 13.0 ft-lb)
- T6: 20 N-m (2.0 kg-m, 14.5 ft-lb)
- T7: 25 N-m (2.5 kg-m, 18.0 ft-lb)
- T8: 49 N-m (5.0 kg-m, 36 ft-lb)
- T9: 65 N-m (6.6 kg-m, 48 ft-lb)



3-4 ENGINE TOP END

Product: 1997-2002 Kawasaki KLR650/KLR500 Motorcycle Service Repair Workshop Manual Supplement

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Item		Standard	Service Limit
Camshafts, Chain:			
Cam height:	Inlet	36.75 – 36.85 mm	36.65 mm
	Exhaust	36.25 – 36.35 mm	36.15 mm
Camshaft bearing oil clearance		0.030 – 0.064 mm	0.15 mm
Camshaft journal diameter		22.949 – 22.970 mm	22.92 mm
Camshaft bearing inside diameter		23.000 – 23.013 mm	23.07 mm
Camshaft chain 20-link length		127.0 – 127.4 mm	128.9 mm
Balancer chain 20-link length		190.5 – 190.9 mm	193.4 mm
Valves:			
Valve clearance:	Inlet	0.10 – 0.20 mm	— — —
	Exhaust	0.15 – 0.25 mm	— — —
Valve head thickness:	Inlet	1.0 mm	0.5 mm
	Exhaust	1.0 mm	0.7 mm
Valve stem bend		Less than 0.01 mm TIR	0.05 mm TIR
Valve stem diameter:	Inlet	6.965 – 6.980 mm	6.95 mm
	Exhaust	6.955 – 6.970 mm	6.94 mm
Valve guide inside diameter		7.000 – 7.015 mm	7.08 mm
Valve guide/valve clearance (wobble method):			
	Inlet	0.04 – 0.11 mm	0.24 mm
	Exhaust	0.05 – 0.12 mm	0.24 mm
Valve seating area outside diameter			
	Inlet	36.9 – 37.1 mm	— — —
	Exhaust	31.9 – 32.1 mm	— — —
Valve seating area width		0.8 – 1.2 mm	— — —
Valve spring free length:	Inner	37.6 mm	36.2 mm
	Outer	40.5 mm	39.0 mm
Cylinder Head:			
Cylinder compression		530 – 855 kPa (5.4 – 8.7 kg/cm ² , 77 – 124 psi)	— — —
Cylinder head warp		— — —	0.05 mm

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