SUZUKI

VL800

SERVICE MANUAL

99500-38041-01E

FOREWORD

This manual contains an introductory description on the SUZUKI VL800 and procedures for its inspection/service and overhaul of its main components. Other information considered as generally known is not included.
Read the GENERAL INFORMATION section to familiarize yourself with the motorcycle and its maintenance. Use this section as well as other sections to use as a guide for proper inspection and service.
This manual will help you know the motorcycle better so that you can assure your customers of fast and reliable service.

- ** This manual has been prepared on the basis of the latest specifications at the time of publication. If modifications have been made since then, differences may exist between the content of this manual and the actual motorcycle.*
- ** Illustrations in this manual are used to show the basic principles of operation and work procedures. They may not represent the actual motorcycle exactly in detail.*
- ** This manual is written for persons who have enough knowledge, skills and tools, including special tools, for servicing SUZUKI motorcycles. If you do not have the proper knowledge and tools, ask your authorized SUZUKI motorcycle dealer to help you.*

⚠ WARNING

Inexperienced mechanics or mechanics without the proper tools and equipment may not be able to properly perform the services described in this manual. Improper repair may result in injury to the mechanic and may render the motorcycle unsafe for the rider and passenger.

IMPORTANT *(For USA)*

All street-legal Suzuki motorcycles with engine displacement of 50 cc or greater are subject to Environmental Protection agency emission regulations. These regulations set specific standards for exhaust emission output levels as well as particular servicing requirements. This manual includes specific imformation required to properly inspect and service VL800 in accordance with all EPA regulations. It is strongly recommended that the chapter on Emission Control, Periodic Servicing and Carburetion be thoroughly reviewed before any type of service work is performed.
Further information concerning the EPA emission regulations and U.S. Suzuki's emission control program can be found in the U.S. SUZUKI EMISSION CONTROL PROGRAM MANUAL/SERVICE BULLETIN.

SUZUKI MOTOR CORPORATION
Overseas Service Department

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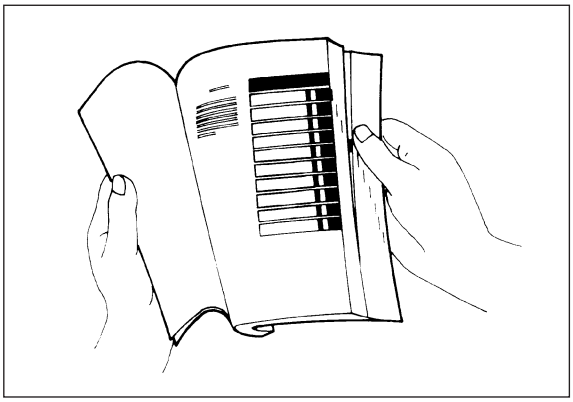
HOW TO USE THIS MANUAL

TO LOCATE WHAT YOU ARE LOOKING FOR:

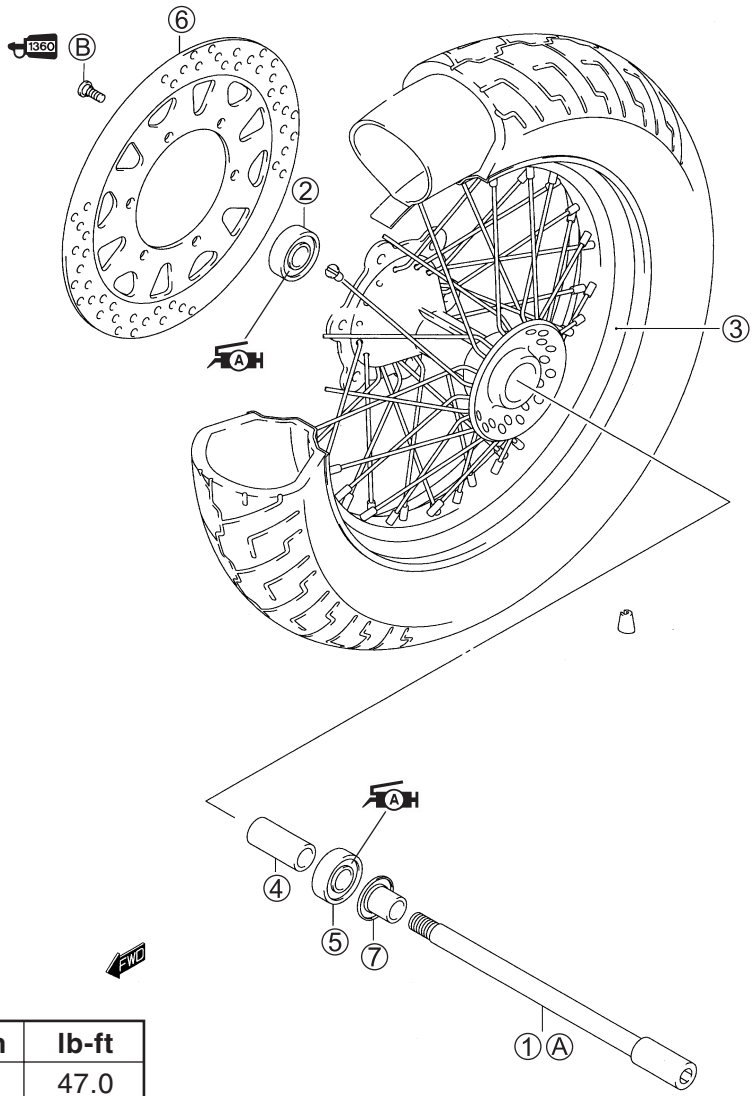
1. The text of this manual is divided into sections.
2. The section titles are listed in the GROUP INDEX.
3. Holding the manual as shown at the right will allow you to find the first page of the section easily.
4. The contents are listed on the first page of each section to help find the item and page you need.



COMPONENT PARTS AND WORK TO BE DONE

Under the name of each system or unit, is its exploded view. Work instructions and other service information such as the tightening torque, lubricating points and locking agent points, are provided.

Example: Front wheel



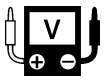
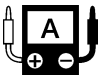
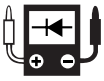
① Front axle
② Bearing (R)
③ Front wheel
④ Spacer
⑤ Bearing (L)
⑥ Brake disc
⑦ Spacer

Ⓐ Front axle
Ⓑ Brake disc mounting bolt

ITEM	N·m	kgf·m	lb-ft
Ⓐ	65	6.5	47.0
Ⓑ	23	2.3	16.5

SYMBOL (For USA)

Listed in the table below are the symbols indicating instructions and other information necessary for servicing. The meaning of each symbol is also included in the table.

SYMBOL	DEFINITION	SYMBOL	DEFINITION
	Torque control required. Data beside it indicates specified torque.		Use engine coolant. 99000-99032-11X
	Apply oil. Use engine oil unless otherwise specified.		Use fork oil. 99000-99001-SS8
	Apply molybdenum oil solution. (Mixture of engine oil and SUZUKI MOLY PASTE in a ratio of 1:1)		Apply or use brake fluid.
	Apply SUZUKI SUPER GREASE “A”. 99000-25030		Measure in voltage range.
	Apply SUZUKI MOLY PASTE. 99000-25140		Measure in resistance range.
	Apply SUZUKI BOND “1207B”. 99104-31140		Measure in current range.
	Apply SUZUKI BOND “1216”. 99104-31160		Measure in diode test range.
	Apply THREAD LOCK SUPER “1303”. 99000-32030		Measure in continuity test range.
	Apply THREAD LOCK “1342”. 99000-32050		Use special tool.
	Apply THREAD LOCK SUPER “1360”. 99000-32130		Indication of service data.

SYMBOL (For the other countries)

Listed in the table below are the symbols indicating instructions and other information necessary for servicing. The meaning of each symbol is also included in the table.

SYMBOL	DEFINITION	SYMBOL	DEFINITION
	Torque control required. Data beside it indicates specified torque.	LLC	Use engine coolant. 99000-99032-11X
OIL	Apply oil. Use engine oil unless otherwise specified.	FORK	Use fork oil. 99000-99001-SS8
M/O	Apply molybdenum oil solution. (Mixture of engine oil and SUZUKI MOLY PASTE in a ratio of 1:1)	BF	Apply or use brake fluid.
A	Apply SUZUKI SUPER GREASE “A”. 99000-25010	V	Measure in voltage range.
M	Apply SUZUKI MOLY PASTE. 99000-25140	Ω	Measure in resistance range.
1207B	Apply SUZUKI BOND “1207B”. 99000-31140	A	Measure in current range.
1216	Apply SUZUKI BOND “1216”. 99104-31160		Measure in diode test range.
1303	Apply THREAD LOCK SUPER “1303”. 99000-32030		Measure in continuity test range.
1342	Apply THREAD LOCK “1342”. 99000-32050	TOOL	Use special tool.
1360	Apply THREAD LOCK SUPER “1360”. 99000-32130	DATA	Indication of service data.

GENERAL INFORMATION

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WARNING/CAUTION/NOTE

Please read this manual and follow its instructions carefully. To emphasize special information, the symbol and the words WARNING, CAUTION and NOTE have special meanings. Pay special attention to the messages highlighted by these signal words.

⚠ WARNING

Indicates a potential hazard that could result in death or injury.

⚠ CAUTION

Indicates a potential hazard that could result in motorcycle damage.

NOTE:
Indicates special information to make maintenance easier or instructions clearer.

Please note, however, that the warnings and cautions contained in this manual cannot possibly cover all potential hazards relating to the servicing, or lack of servicing, of the motorcycle. In addition to the WARNINGS and CAUTIONS stated, you must use good judgement and basic mechanical safety principles. If you are unsure about how to perform a particular service operation, ask a more experienced mechanic for advice.

GENERAL PRECAUTIONS

⚠ WARNING

- **Proper service and repair procedures are important for the safety of the service mechanic and the safety and reliability of the motorcycle.**
- **When two or more persons work together, pay attention to the safety of each other.**
- **When it is necessary to run the engine indoors, make sure that exhaust gas is forced outdoors.**
- **When working with toxic or flammable materials, make sure that the area you work in is well-ventilated and that you follow all of the material manufacturer's instructions.**
- **Never use gasoline as a cleaning solvent.**
- **To avoid getting burned, do not touch the engine, engine oil, radiator and exhaust system until they have cooled.**
- **After servicing the fuel, oil, engine coolant, exhaust or brake systems, check all of the lines and fittings related to the system for leaks.**

⚠ CAUTION

*** If parts replacement is necessary, replace the parts with Suzuki Genuine Parts or their equivalent.**
*** When removing parts that are to be reused, keep them arranged in an orderly manner so that they may be reinstalled in the proper order.**
*** Be sure to use special tools when instructed.**
*** Make sure that all parts used in reassembly are clean. Lubricate them when specified.**
*** Use the specified lubricants, bonds, or sealants.**
*** When removing the battery, disconnect the ⊖ battery lead wire first and then the ⊕ battery lead wire.**
*** When reconnecting the battery, connect the ⊕ battery lead wire first, then the ⊖ battery lead wire. Finally, cover the ⊕ battery terminal with the terminal cover.**
*** When performing service to electrical parts, disconnect the ⊖ battery lead wire, unless the service procedure requires the battery power.**
*** When tightening cylinder head and crankcase nuts and bolts, tighten the larger sizes first. Always tighten the nuts and bolts from the inside working out, diagonally and to the specified torque.**
*** Whenever you remove oil seals, gaskets, packing, O-rings, self-locking nuts, locking washers, cotter pins, circlips, and other specified parts, be sure to replace them with new ones. Also, before installing these new parts, be sure to remove any left over material from the mating surfaces.**
*** Never reuse a circlip. When installing a new circlip, take care not to expand the end gap larger than required to slip the circlip over the shaft. After installing a circlip, always ensure it is completely seated in its groove and securely fitted.**
*** Use a torque wrench to tighten fasteners to the specified torque. Wipe off grease and oil if a thread is smeared with them.**
*** After reassembling, check parts for tightness and proper operation.**

*** To protect the environment, do not unlawfully dispose of used motor oil, engine coolant, all other fluids, batteries, and tires.**
*** To protect the earth's natural resources, properly dispose of used motorcycles and parts.**

SUZUKI VL800K1 (2001-MODEL)

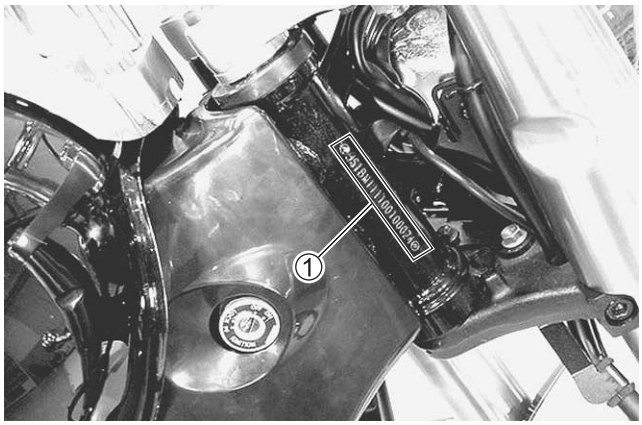
RIGHT SIDE

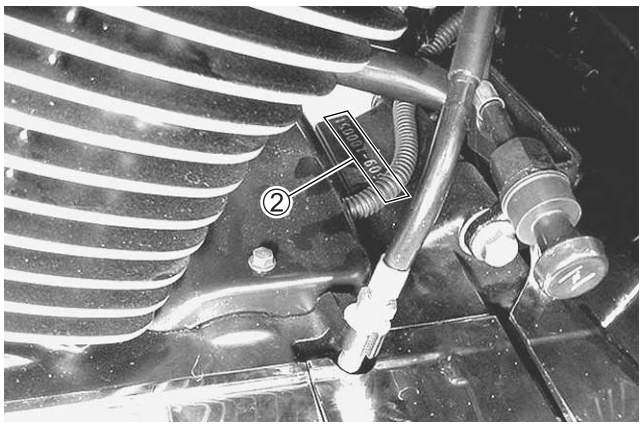
LEFT SIDE

* Difference between photograph and actual motorcycle depends on the markets.

SERIAL NUMBER LOCATION

The frame serial number or V.I.N. (Vehicle Identification Number) ① is stamped on the right side of the steering head pipe. The engine serial number ② is located on the right side of the crankcase. These numbers are required especially for registering the machine and ordering spare parts.





FUEL, OIL AND ENGINE COOLANT RECOMMENDATION

FUEL (For USA and CANADA)

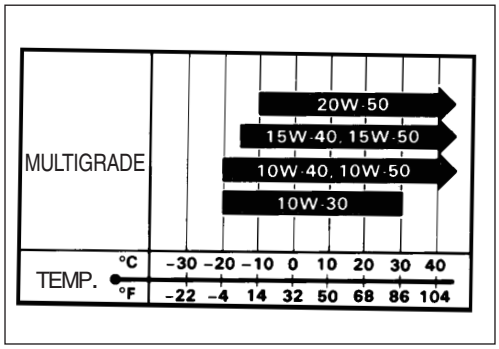
1. Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$) method or 91 octane or higher rated by the Research Method.
2. Suzuki recommends that customers use alcohol-free unleaded gasoline whenever possible.
3. Use of blended gasoline containing MTBE (Methyl Tertiary Butyl Ether) is permitted.
4. Use of blended gasoline/alcohol fuel is permitted, provided that the fuel contains not more than 10% ethanol. Gasoline/alcohol fuel may contain up to 5% methanol if appropriate cosolvents and corrosion inhibitors are present in it.
5. If the performance of the vehicle is unsatisfactory while using blended gasoline/alcohol fuel, you should switch to alcohol-free unleaded gasoline.
6. Failure to follow these guidelines could possibly void applicable warranty coverage. Check with your fuel supplier to make sure that the fuel you intend to use meets the requirements listed above.

FUEL (For the other countries)

Use unleaded gasoline that is graded 91 octane or higher by the Research Method.

ENGINE OIL (For USA)

SUZUKI recommends the use of SUZUKI PERFORMANCE 4 MOTOR OIL or an oil which is rated SF or SG under the API (American Petroleum Institute) service classification. The recommended viscosity is SAE 10W/40. If an SAE 10W/40 oil is not available, select an alternative according to the right chart.



ENGINE OIL (For the other countries)

Use a premium quality 4-stroke motor oil to ensure longer service life of your motorcycle. Use only oils which are rated SF or SG under the API service classification. The recommended viscosity is SAE 10W-40. If an SAE 10W-40 motor oil is not available, select an alternative according to the right chart.

GEAR OIL (FINAL DRIVE GEAR OIL)

Use SAE 90 hypoid gear oil which is reted GL-5 under API classification system. If you operate the motorcycle where ambient temperature is below 0°C (32°F), use SAE 80 hypoid gear oil.

BRAKE FLUID

Specification and classification: DOT 4

⚠ WARNING

- *** This motorcycle uses a glycol-based brake fluid. Do not use or mix other types of brake fluid such as silicone-based and petroleum-based fluids for refilling the system, otherwise serious damage will result to the brake system.**
- *** Do not use any brake fluid taken from old, used, or unsealed containers.**
- *** Do not re-use brake fluid left over from last servicing or which has been stored for a long period of time.**

FRONT FORK OIL

Use SUZUKI FORK OIL SS-08 (#10) or an equivalent fork oil.

ENGINE COOLANT

Since antifreeze also has corrosion- and rust-inhibiting properties, always use engine coolant containing antifreeze, even if the atmospheric temperature does not go below the freezing point.
Use an antifreeze designed for aluminum radiators. Suzuki recommends the use of SUZUKI COOLANT antifreeze. If this is not available, use an equivalent antifreeze for aluminum radiators.
Mix only distilled water with the antifreeze. Other types of water can corrode and clog the aluminum radiator.

Mix distilled water and antifreeze at a ratio of 50 : 50 – 40 : 60.

For more information, refer to cooling system section. (☞ 6-2)

⚠ CAUTION

The percentage of antifreeze in the coolant should be between 50 to 60%. If the percentage of antifreeze is above or below this range the coolant's frost protection and rust-inhabiting capacities will be reduced. Always keep the antifreeze content above 50% even if the atmospheric temperature does not go below the freezing point.

BREAK-IN PROCEDURES

During manufacturing only the best possible materials are used and all machined parts are finished to a very high standard. It is still necessary to allow the moving parts to “BREAK-IN” before subjecting the engine to maximum stresses. The future performance and reliability of the engine depends on the care and restraint exercised during its early life. Refer to the following break-in engine speed recommendations.

• Keep to these break-in throttle positions during the break-in period.

Break-in throttle operation
Initial 800 km (500 miles): Less than ½ throttle
Up to 1 600 km (1 000 miles): Less than ¾ throttle

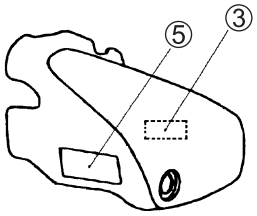
• Upon reaching an odometer reading of 1 600 km (1 000 miles) you can subject the motorcycle to full throttle operation.

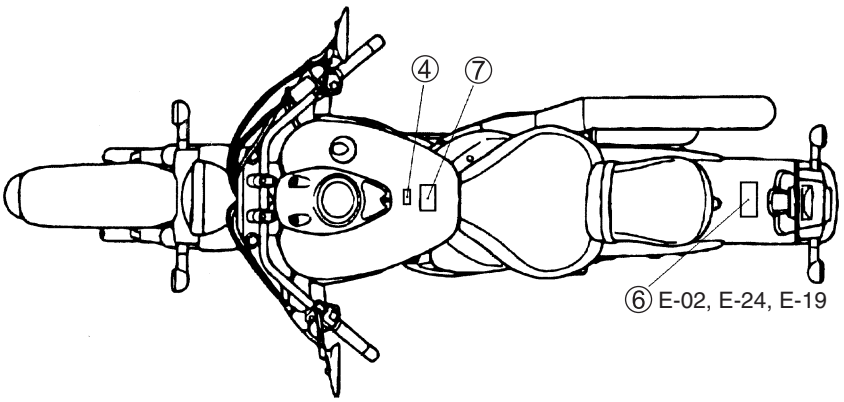
CYLINDER IDENTIFICATION

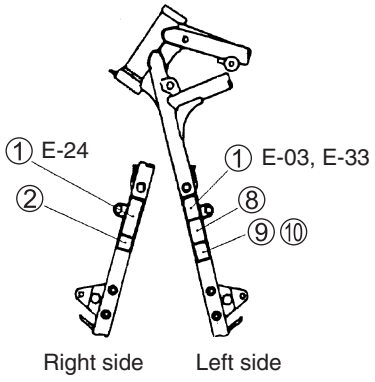
The engine cylinders are identified as #1 and #2, as counted from rear to front (as viewed by the rider on the seat).

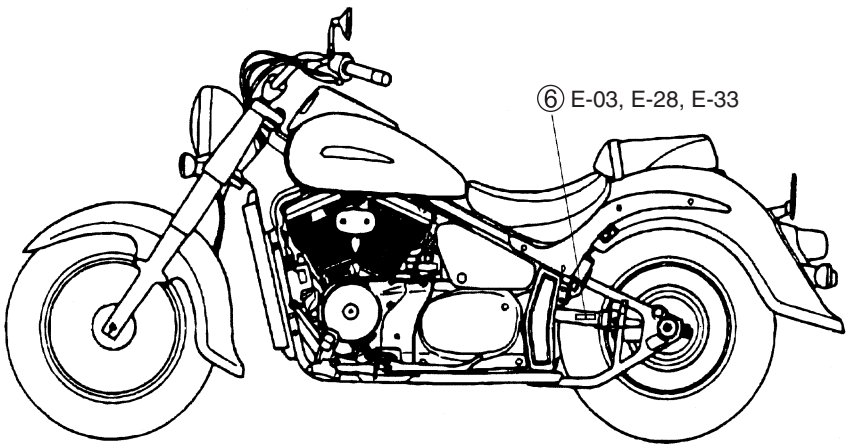
INFORMATION LABELS

NO.	LABEL or PLATE NAME	APPLIED SPECIFICATION					
		E-02	E-03	E-19	E-24	E-28	E-33
①	Noise label	–	○	–	○	–	○
②	Information label	–	○	–	–	○	○
③	Vacuum hose routing label	–	–	–	–	–	○
④	Fuel caution label	○	–	–	○	–	–
⑤	Manual notice label	–	○	–	–	–	○
⑥	Tire air pressure label	○	○	○	○	○	○
⑦	Warning safety label	○	○	○	○	○	○
⑧	ICES Canada label	–	–	–	–	○	–
⑨	ID plate	○	–	○	○	–	–
⑩	Safety plate	–	○	–	–	○	○









SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length	2 510 mm (98.818 in)
Overall width	985 mm (38.779 in)
Overall height	1 110 mm (43.700 in)
Wheelbase	1 650 mm (64.960 in)
Ground clearnce	140 mm (5.511 in)
Seat height	700 mm (27.559 in)
Dry mass	239 kg (53.727 lbs)

ENGINE

Type	Four-stroke, Liquid-cooled, OHC
Number of cylinders	2
Bore	83 mm (3.268 in)
Stroke	74.4 mm (2.929 in)
Displacement	805 cm^3 (49.1 cu. in)
Compression ratio	9.4 : 1
Carburetor	BDSR34
Air cleaner	Non-woven fabric element
Starter system	Electric
Lubrication system	Wet sump
Idle speed	1 100 ± 100 r/min

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	5-speed, constant mesh
Gearshift pattern	1-down, 4-up
Primary reduction ratio	1.690 (71/42)
Secondary reduction ratio	1.133 (17/15)
Final reduction ratio	3.090 (34/11)
Gear ratios, Low	2.461 (32/13)
2nd	1.631 (31/19)
3rd	1.227 (27/22)
4th	1.000 (25/25)
Top	0.814 (22/27)
Drive system	Shaft drive

CHASSIS

Front suspension	Telescopic, coil spring, oil damped
Rear suspension	Link type, coil spring, oil damped, spring pre-load 7-way adjustable
Steering angle	38° (right & left)
Caster	33° 20’
Trail	141 mm (3.55 in)
Turning radius	3.0 m (9.8 ft)
Front brake	Disc brake
Rear brake	Drum brake
Front tire size	130/90-16 67H, tube or 130/90-16M/C 67H, tube
Rear tire size	170/80-15M/C 77H, tube
Front fork stroke	140 mm (5.5 in)
Rear wheel travel	105 mm (4.1 in)

ELECTRICAL

Ignition type	Electronic ignition (Transistorized)
Ignition timing	5° B.T.D.C. at 1 110 r/min
Spark plug	NGK: DPR8EA-9 or DENSO: X24EPR-U9
Battery	12 V 36 kC (10 Ah)/10HR
Generator	Three-phase A.C. Generator
Main fuse	30 A
Fuse	15/15/10/10/10/10 A
Headlight	12 V 60/55 W
Position/parking light	12 V 4 W ..... Except for E-03, 24, 28, 33
Front turn signal light	12 V 21 W ..... E-02, 19, 24 12 V 21/5 W E-03, 28, 33
Rear turn signal light	12 V 21 W
Brake light/Taillight	12 V 21/5 W
Speedometer light	LED
Neutral indicator light	LED
High beam indicator light	LED
Turn signal indicator light	LED
Oil pressure light	LED

CAPACITIES

Fuel tank	17.0 L (4.5/3.7 US/Imp gal)
Engine oil, oil change	3 000 ml (3.2/2.6 US/Imp qt)
with filter change	3 400 ml (3.6/3.0 US/Imp qt)
overhaul	3 700 ml (3.9/3.3 US/Imp qt)
Final gear oil	200 – 220 ml (6.8/7.0 – 7.4/7.7 US/Imp qt)
Engine coolant	1 500 ml (1.5/1.3 US/Imp qt)
Front fork oil (each leg)	412 ml (13.9/14.5 US/Imp oz)

These specifications are subject to change without notice.

COUNTRY AND AREA CODES

The following codes stand for the applicable country(-ies) and area(-s).

CODE	COUNTRY or AREA
E-02	England (UK)
E-03	USA
E-19	EU
E-24	Australia
E-28	Canada
E-33	California