

## Hyosung - Hyosung\_Rapier\_450\_Manual\_de\_reparatie

### SERVICE MANUAL

SERVICE MANUAL HYOSUNG MOTORS & MACHINERY INC.  
99000HP8910

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### FOREWORD

This manual contains an introductory description on HYOSUNG and procedures for its inspection/service and overhaul of its main components. Other information considered as generally known is not included. Read GENERAL INFORMATION section to familiarize yourself with outline of the vehicle and MAINTENANCE and other sections to use as a guide for proper inspection and service. This manual will help you know the vehicle better so that you can assure your customers of your optimum and quick service.

### WARNING

This manual is intended for those who have enough knowledge and skills for servicing HYOSUNG vehicles. Without such knowledge and skills, you should not attempt servicing by relying on this manual only. Instead, please contact your nearby authorized HYOSUNG motorcycle dealer.

This manual has been prepared on the basis of the latest specification at the time of publication. If modification has been made since then, difference may exist between the content of this manual and the actual vehicle.

Illustrations in this manual are used to show the basic principles of operation and work procedures. They may not represent the actual vehicle exactly in detail.

### HOW TO USE THIS MANUAL

#### TO LOCATE WHAT YOU ARE LOOKING FOR :

1. The text of this manual is divided into sections.
2. As the title of these sections is listed on the previous page as GROUP INDEX, select the section where you are looking for.
3. Holding the manual as shown at the right will allow you to find the first page of the section easily.
4. On the first page of each section, its contents are listed. Find the item and page you need.

### COMPONENT PARTS

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Example : Front wheel

## SYMBOL

Listed in the table below are the symbols indicating instructions and other information necessary for servicing and meaning associated with them respectively.

### DEFINITION SYMBOL DEFINITION SYMBOL

Apply THREAD LOCK 1324.

Apply or use brake fluid.

Measure in voltage range.

Measure in resistance range.

Measure in current range.

Use special tool.

Use engine coolant.

Torque control required.

Data beside it indicates specified torque.

Apply oil.

Use engine oil unless otherwise specified.

Apply SUPER GREASE A.

Apply SILICONE GREASE.

Apply MOLY PASTE.

Apply BOND 1215.

Use fork oil.

Apply SUPER GREASE C.

## NOTE

Difference between photographs and actual vehicles depends on the markets.

## GENERAL INFORMATION

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## 1-1 GENERAL INFORMATION

Please note, however, that the warning and cautions contained in this manual cannot possibly cover all potential hazards relating to the servicing, or lack of servicing, of the vehicle. In addition to the WARNING and CAUTION 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.

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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.

#### CAUTION

Indicates a potential hazard that could result in vehicle damage.

#### WARNING

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

#### NOTE

Indicates special information to make maintenance easier or instructions clearer.

### GENERAL INFORMATION 1-2

### GENERAL PRECAUTIONS

#### WARNING

Proper service and repair procedures are important for the safety of the service mechanic and the safety and reliability of the vehicle.

When 2 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 off the material manufacturer s instructions.

Never use gasoline as a cleaning solvent.

To avoid getting burned, do not touch the engine, engine oil, exhaust system or radiator during or for a while after engine operation.

After servicing fuel, oil, engine coolant, exhaust or brake systems, check all lines and fittings related to the system for leaks.

#### WARNING

If parts replacement is necessary, replace the parts with HYOSUNG 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 and orientation.

Be sure to use special tools when instructed.

Make sure that all parts used in reassembly are clean, and also lubricated when specified.

When use of a certain type of lubricant, bond, or sealant is specified, be sure to use the specified type.

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 and then the - battery lead wire. Finally, cover the + battery terminal with the terminal cover.

When performing service to electrical parts, if the service procedures do not require use of battery power, disconnect the - battery lead wire at the battery.

Tighten cylinder head and case bolts and nuts, beginning with larger diameter and ending with smaller diameter, from inside to outside diagonally, to the specified tightening torque.

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Whenever you remove oil seals, gaskets, packing, O-rings, locking washers, cotter pins, circlips, and certain other parts as specified, be sure to replace them with new ones. Also, before installing these new parts, be sure to remove any material left over 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 that it is completely seated in its groove and securely fitted. Do not use self-locking nuts a few times over.

Use a torque wrench to tighten fasteners to the torque values when specified. Wipe off grease or oil if a thread is smeared with them.

After reassembly, check parts for tightness and operation.

### WARNING

To protect environment, do not unlawfully dispose of used motor oil and other fluids: batteries, and tires.

To protect Earth's natural resources, properly dispose of used vehicles and parts.

### 1-3 GENERAL INFORMATION

#### SERIAL NUMBER LOCATION

The frame serial number or V.I.N. (Vehicle Identification Number) is stamped on the right side of the frame pipe.

The engine serial number is stamped on the left downside of the crankcase assembly. These numbers are required especially for registering the machine and ordering spare parts.

#### FRAME SERIAL NUMBER

#### ENGINE SERIAL NUMBER

### GENERAL INFORMATION 1-4

#### BRAKE FLUID

Specification and classification (Front brake) : DOT4

(Rear brake) : DOT4

### FUEL, OIL AND ENGINE COOLANT RECOMMENDATIONS

#### FUEL

Gasoline used should be graded 91 octane (Research Method) or higher. An unleaded gasoline type is recommended.

#### ENGINE OIL

#### ENGINE OIL SPECIFICATION

Grade

Over SL

10W/40

Temperature °C (°F)

-30 (-22) -20 (-4) -10 (14) 0 (32) 10 (50) 20 (68) 30 (86) 40 (104)

5W30

10W30

10W40

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10W50

15W40

15W50

20W50

Classification system

API

SAE

## NOTE

If an SAE 10W/40 motor oil is not available, select an alternative according to the following chart.

Use a premium quality 4-stroke motor oil to ensure longer service life of your vehicle.

## WARNING

Dont mix the unrecommended oil. It could damage the engine.

When refilling the oil tank, don t allow the dust to get inside.

Wipe the spilled oil up immediately.

Dont put the patch on the cap. It could disturb the oil to be provided and damage the engine.

## WARNING

Since the brake system of this vehicle is filled with a glycol-based brake fluid by the manufacturer, do not use or mix different types of fluid such as silicone-based and petroleum-based fluid for refilling the system, otherwise serious damage will result. Do not use any brake fluid taken from old or used or unsealed containers. Never re-use brake fluid left over from a previous servicing, which has been stored for a long period.