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# YAMAHA

# YJ125S

# SERVICE MANUAL

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**5YR-28197-10**

EAS00000

**YJ125S 2003  
SERVICE MANUAL**  
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LIT-11616-17-43

## NOTICE

This manual was produced by the Yamaha Motor Taiwan Company, Ltd. primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to include all the knowledge of a mechanic in one manual. Therefore, anyone who uses this book to perform maintenance and repairs on Yamaha vehicles should have a basic understanding of mechanics and the techniques to repair these types of vehicles. Repair and maintenance work attempted by anyone without this knowledge is likely to render the vehicle unsafe and unfit for use.

Yamaha Motor Taiwan Company, Ltd. is continually striving to improve all of its models. Modifications and significant changes in specifications or procedures will be forwarded to all authorized Yamaha dealers and will appear in future editions of this manual where applicable.

**NOTE:**

Designs and specifications are subject to change without notice.

## IMPORTANT MANUAL INFORMATION

Particularly important information is distinguished in this manual by the following.

The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

**WARNING**

Failure to follow WARNING instructions could result in severe injury or death to the scooter operator, a bystander or a person inspecting or repairing the scooter.

**CAUTION:**

A CAUTION indicates special precautions that must be taken to avoid damage to the scooter.

**NOTE:**

A NOTE provides key information to make procedures easier or clearer.

# HOW TO USE THIS MANUAL

This manual is intended as a handy, easy-to-read reference book for the mechanic. Comprehensive explanations of all installation, removal, disassembly, assembly, repair and check procedures are laid out with the individual steps in sequential order.

- ① The manual is divided into chapters. An abbreviation and symbol in the upper right corner of each page indicate the current chapter. Refer to "SYMBOLS".
- ② Each chapter is divided into sections. The current section title is shown at the top of each page, except in Chapter 3 ("PERIODIC CHECKS AND ADJUSTMENTS"), where the sub-section title(s) appears.
- ③ Sub-section titles appear in smaller print than the section title.
- ④ To help identify parts and clarify procedure steps, there are exploded diagrams at the start of each removal and disassembly section.
- ⑤ Numbers are given in the order of the jobs in the exploded diagram. A circled number indicates a disassembly step.
- ⑥ Symbols indicate parts to be lubricated or replaced. Refer to "SYMBOLS".
- ⑦ A job instruction chart accompanies the exploded diagram, providing the order of jobs, names of parts, notes in jobs, etc.
- ⑧ Jobs requiring more information (such as special tools and technical data) are described sequentially.

CYLINDER AND PISTON ENG

EAS0001  
CYLINDER AND PISTON

12Nm(1.2m • kg, 8.7 ft • lb)

| Order                                     | Job/Part                          | Qty | Remarks   |
|---|-----------------------------------|-----|---|
| <b>7</b> Removing the cylinder and piston |                                   |     |   |
|   | Cylinder head                     |     | Remove the parts in the order listed. Refer to "CYLINDER HEAD". |
| 1   | Clamp                             | 1   |   |
| 2   | Pipe                              | 1   |   |
| 3   | Timing chain guide (exhaust side) | 1   |   |
| 4   | Cylinder                          | 1   |   |
| 5   | O-ring                            | 1   |   |
| 6   | Dowel pin                         | 2   |   |
| 7   | Cylinder gasket                   | 1   | Refer to "INSTALLING THE PISTON AND CYLINDER"                   |
| 8   | Piston pin clip                   | 2   |   |
| 9   | Piston pin                        | 1   | Refer to "REMOVING THE CYLINDER AND PISTON"                     |
| 10  | Piston                            | 1   |   |
| 11  | Top ring                          | 1   | Refer to "INSTALLING THE PISTON AND CYLINDER"                   |
| 12  | 2nd ring                          | 1   |   |
| 13  | Oil ring                          | 2   |   |
| 14  | Expander                          | 1   | For installation, reverse the removal procedure.                |

CYLINDER AND PISTON ENG

EAS0002  
REMOVING THE CYLINDER AND PISTON

**1. Remove:**

- piston pin clip ①
- piston pin ②
- piston ③

**CAUTION:**  
Do not use a hammer to drive the piston pin out.

**NOTE:**

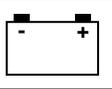
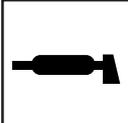
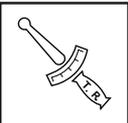
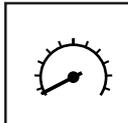
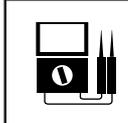
- Before removing the piston pin clip, cover the crankcase opening with a clean rag to prevent the piston pin clip from falling into the crankcase.
- Before removing the piston pin, deburr the piston pin clip's groove and the piston's pin bore area.

**2. Remove:**

- top ring
- 2nd ring
- oil ring

**NOTE:**  
When removing a piston ring, open the end gap with your fingers and lift the other side of the ring over the piston crown.

5-28
5-29

|  |  |   |
|--|--|---|
| ①<br><b>GEN<br/>INFO</b>    | ②<br><b>SPEC</b>  |   |
| ③<br><b>CHK<br/>ADJ</b>     | ④<br><b>CHAS</b>  |   |
| ⑤<br><b>ENG</b>             | ⑥<br><b>COOL</b>  |   |
| ⑦<br><b>CARB</b>            | ⑧<br><b>ELEC</b>  |   |
| ⑨<br><b>TRBL<br/>SHTG</b>  | ⑩                |   |
| ⑪                         | ⑫               |   |
| ⑬                         | ⑭               |   |
| ⑮                         | ⑯               | ⑰  |
| ⑱                         | ⑲               | ⑳  |
| ㉑                         | ㉒               | ㉓  |
| ㉔                         | ㉕ <b>New</b>   |   |

EAS00008

## SYMBOLS

The following symbols are not relevant to every vehicle.

Symbols ① to ⑨ indicate the subject of each chapter.

- ① General information
- ② Specifications
- ③ Periodic checks and adjustments
- ④ Chassis
- ⑤ Engine
- ⑥ Cooling system
- ⑦ Carburetor(s)
- ⑧ Electrical system
- ⑨ Troubleshooting

Symbols ⑩ to ⑰ indicate the following.

- ⑩ Serviceable with engine mounted
- ⑪ Filling fluid
- ⑫ Lubricant
- ⑬ Special tool
- ⑭ Tightening torque
- ⑮ Wear limit, clearance
- ⑯ Engine speed
- ⑰ Electrical data

Symbols ⑱ to ㉓ in the exploded diagrams indicate the types of lubricants and lubrication points.

- ⑱ Engine oil
- ⑲ Gear oil
- ⑳ Molybdenum-disulfide oil
- ㉑ Wheel-bearing grease
- ㉒ Lithium-soap-based grease
- ㉓ Molybdenum-disulfide grease

Symbols ㉔ to ㉕ in the exploded diagrams indicate the following.

- ㉔ Apply locking agent (LOCTITE®)
- ㉕ Replace the part

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**CHAPTER 1  
GENERAL INFORMATION**

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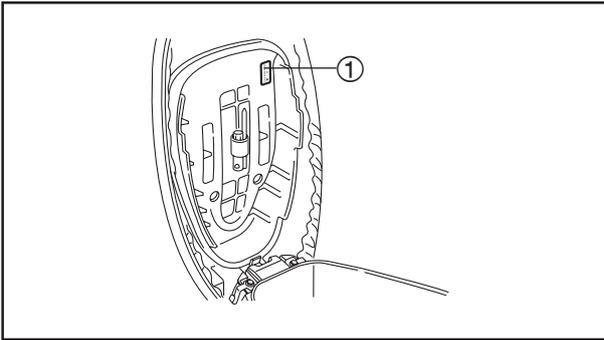
EAS00015

## GENERAL INFORMATION SCOOTER IDENTIFICATION

EAS00017

### VEHICLE IDENTIFICATION NUMBER

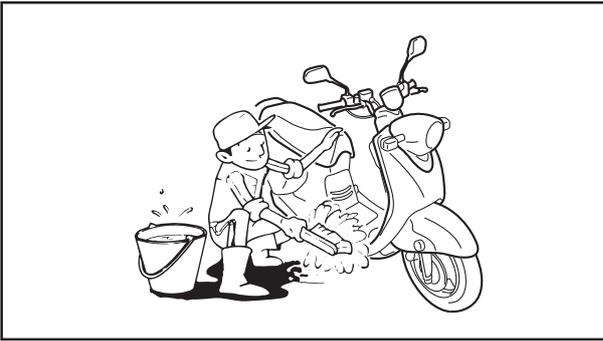
The vehicle identification number ① is stamped into the steering head pipe.



EAS00018

### MODEL LABEL

The model label ① is affixed to the seat. This information will be needed to order spare parts.

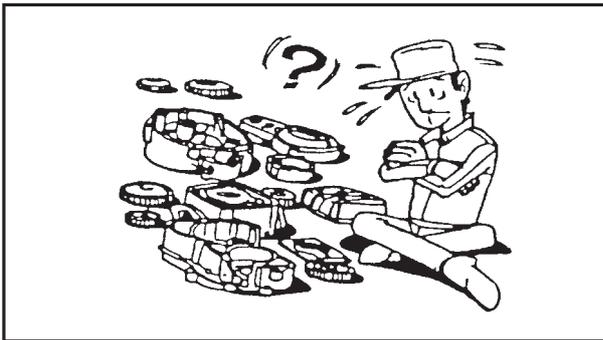


EAS00020

**IMPORTANT INFORMATION**

**PREPARATION FOR REMOVAL AND DISASSEMBLY**

1. Before removal and disassembly, remove all dirt, mud, dust and foreign material.
2. Use only the proper tools and cleaning equipment.  
Refer to the "SPECIAL TOOLS".
3. When disassembling, always keep mated parts together. This includes gears, cylinders, pistons and other parts that have been "mated" through normal wear. Mated parts must always be reused or replaced as an assembly.
4. During disassembly, clean all of the parts and place them in trays in the order of disassembly. This will speed up assembly and allow for the correct installation of all parts.
5. Keep all parts away from any source of fire.



EAS00021

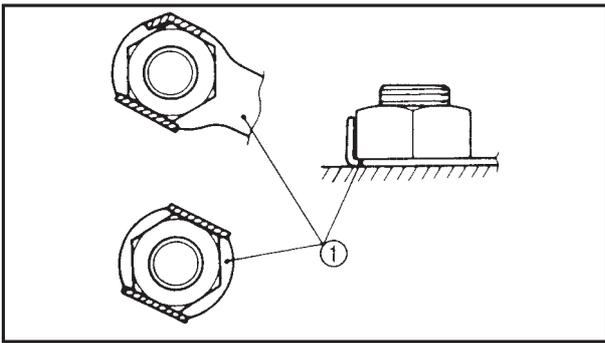
**REPLACEMENT PARTS**

Use only genuine Yamaha parts for all replacements. Use oil and grease recommended by Yamaha for all lubrication jobs. Other brands may be similar in function and appearance, but inferior in quality.

EAS00022

**GASKETS, OIL SEALS AND O-RINGS**

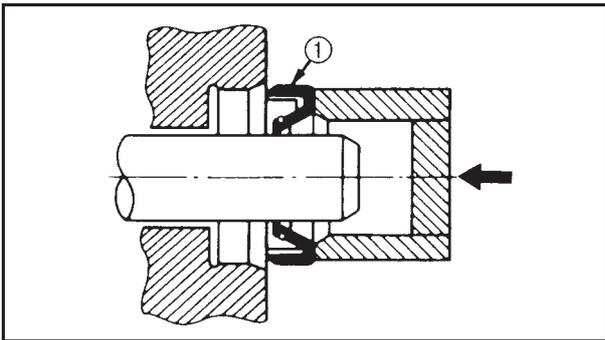
1. When overhauling the engine, replace all gaskets, seals and O-rings. All gasket surfaces, oil seal lips and O-rings must be cleaned.
2. During reassembly, properly oil all mating parts and bearings and lubricate the oil seal lips with grease.



EAS00023

**LOCK WASHERS/PLATES AND COTTER PINS**

After removal, replace all lock washers/plates ① and cotter pins. After the bolt or nut has been tightened to specification, bend the lock tabs along a flat of the bolt or nut.



EAS00024

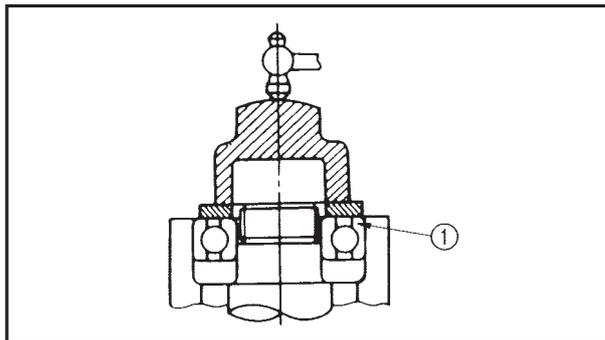
**BEARINGS AND OIL SEALS**

Install bearings and oil seals so that the manufacturer's marks or numbers are visible. When installing oil seals, lubricate the oil seal lips with a light coat of lithium-soap-based grease. Oil bearings liberally when installing, if appropriate.

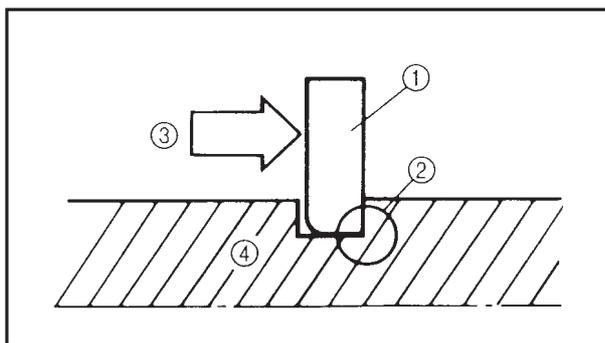
- ① Oil seal

**CAUTION:**

Do not spin the bearing with compressed air because this will damage the bearing surfaces.



- ① Bearing



EAS00025

**CIRCLIPS**

Before reassembly, check all circlips carefully and replace damaged or distorted circlips. Always replace piston pin clips after one use. When installing a circlip ①, make sure the sharp-edged corner ② is positioned opposite the thrust ③ that the circlip receives.

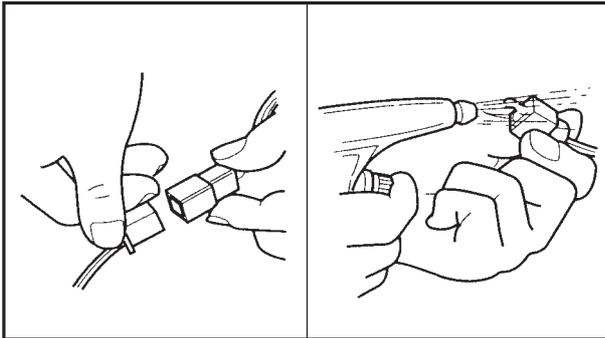
- ④ Shaft

EAS00026

## CHECKING THE CONNECTIONS

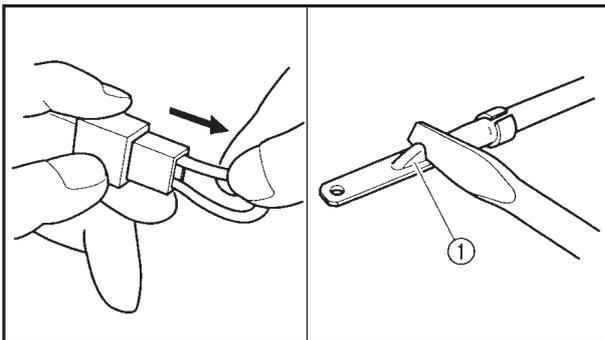
Check the leads, couplers, and connectors for stains, rust, moisture, etc.

1. Disconnect:
  - lead
  - coupler
  - connector



2. Check:
  - lead
  - coupler
  - connector

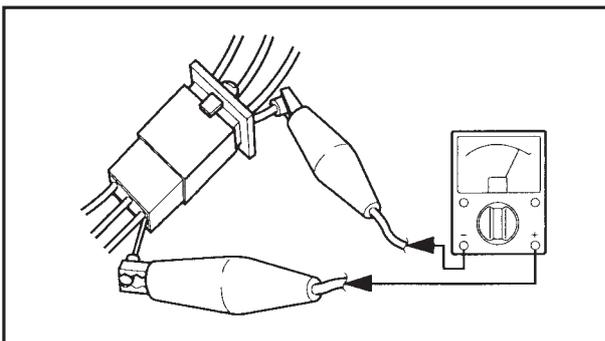
Moisture → Dry with an air blower.  
Rust/stains → Connect and disconnect several times.



3. Check:
  - all connections

Loose connection → Connect properly.

**NOTE:** \_\_\_\_\_  
If the pin ① on the terminal is flattened, bend it up.  
\_\_\_\_\_



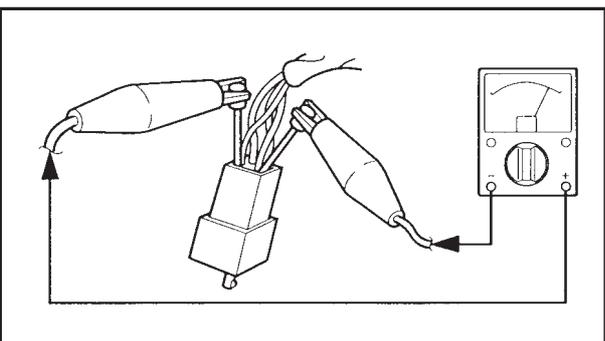
4. Connect:
  - lead
  - coupler
  - connector

**NOTE:** \_\_\_\_\_  
Make sure all connections are tight.  
\_\_\_\_\_

5. Check:
  - continuity  
(with the pocket tester)

|   |   |
|---|---|
|  | <b>Pocket tester</b><br><b>90890-03132 (YU-03112-C)</b> |
|---|---|

**NOTE:** \_\_\_\_\_  
● If there is no continuity, clean the terminals. When checking the wire harness, perform steps (1) to (3).  
● As a quick remedy, use a contact revitalizer available at most part stores.  
\_\_\_\_\_

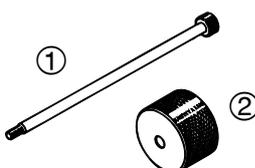
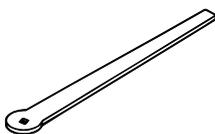
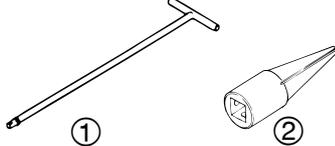
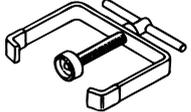
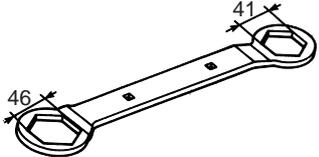
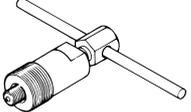


EAS00027

**SPECIAL TOOLS**

The following special tools are necessary for complete and accurate tune-up and assembly. Use only the appropriate special tools as this will help prevent damage caused by the use of inappropriate tools or improvised techniques. Special tools, part numbers or both may differ depending on the country.

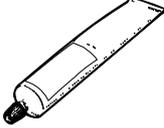
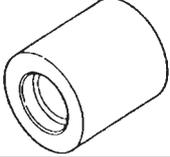
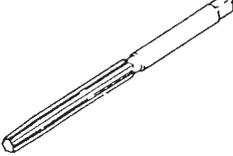
When placing an order, refer to the list provided below to avoid any mistakes.

| Tool NO.  | Tool name / Function  | Illustration  |
|---|---|---|
| 90890-01083(M6)<br>YU-01083-1<br>90890-01085(M8)<br>YU-01083-2<br>90890-01084<br>YU-01083-3 | Rocker arm shaft puller bolt①<br><br>Weight②<br>These tools are used when removing or installing the rocker arm shafts.                     |    |
| 90890-01235<br>YU-01235   | Rotor holding tool<br><br>This tool is used to remove the flywheel magneto.   |    |
| 90890-01268<br>YU-01268   | Ringnut wrench<br><br>This tool is used to loosen and tighten the exhaust and steering ring nut.  |   |
| 90890-01311<br>YM-08035-A   | Valve adjusting tool<br><br>This tool is necessary for adjusting valve clearance.   |  |
| 90890-01312<br>YM-01312-A   | Fuel level gauge<br><br>This gauge is used to measure the fuel level in the float chamber.  |  |
| 90890-01326<br>YM-01326<br>90890-01294<br>YM-01300-1  | T-handle①<br>Damper rod holder②<br>These tool are used for holding the Damper rod holder when removing or installing the damper rod holder. |  |
| 90890-01337<br>YM-33285<br>YM-33285-6   | Clutch spring holder<br><br>These tool are used for removing the nut with holding the compression spring.                                   |  |
| 90890-01348<br>YM-01348   | Lock nut wrench<br><br>This tool is used when removing or installing the secondary sheave nut.  |  |
| 90890-01189<br>YM-01189   | Flywheel puller<br><br>This tool is used for removing the A.C. magneto rotor.   |  |



| Tool NO.   | Tool name / Function   | Illustration |
|--|--|--------------|
| 90890-01367<br>YM-A9409-7<br>90890-01400<br>YM-A9409-3 | Fork seal driver weight ①<br><br>Fork seal driver attachment(Ø30mm) ②<br>This tool is used when installing the fork seal.            |              |
| 90890-01384<br>YM-33299                                | Oil seal guide<br><br>This tool is used for protecting the oil seal lip when installing the secondary sliding sheave.                |              |
| 90890-01403<br>YU-33975                                | Ring nut wrench<br><br>This tool is used to loosen and tighten the steering ring nut.  |              |
| 90890-01701<br>YS-01880-A                              | Sheave holder<br><br>This tool is used for holding the secondary sheave.   |              |
| 90890-03079<br>YM-34483                                | Thickness gauge<br><br>This tool is used to measure the valve clearance.   |              |
| 90890-03081<br>YU-33223                                | Compression gauge<br><br>These tool are used to measure the engine compression.  |              |
| 90890-03132<br>YU-03112-C                              | Pocket tester<br><br>This instrument is invaluable for checking the electrical system.   |              |
| 90890-03113<br>YU-08036-C                              | Engine tachometer<br><br>This tool is needed for detecting engine rpm.   |              |
| 90890-03141<br>YU-03141                                | Timing light<br><br>This tool is needed for detecting ignition timing.   |              |
| 90890-04019<br>YM-04019<br>90890-04108<br>YM-04108     | Valve spring compressor<br>Attachment(Ø19mm)<br><br>These tools are used when removing or installing the valve and the valve spring. |              |



| Tool NO.                       | Tool name / Function  | Illustration   |
|--------------------------------|---|--|
| 90890-06754<br>YM-34487        | Ignition checker<br><br>This instrument is necessary for checking the ignition system components. |   |
| 90890-85505<br>ACC-11001-05-01 | Yamaha bond NO.1215<br><br>This sealant (bond) is used for crankcase mating surface, etc.         |   |
| 80890-04116<br>YM-04116        | Valve guide remover (4.5 mm)<br><br>This tool is used to remove or install the valve guides.      |   |
| 90890-04117<br>YM-04117        | Valve guide installer (4.5 mm)<br><br>This tool is used to install the valve guides.              |   |
| 90890-04099<br>YM-04099        | Valve guide reamer (5.0 mm)<br><br>This tool is used to rebore the new valve guides.              |  |

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**CHAPTER 2  
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## SPECIFICATIONS

## GENERAL SPECIFICATIONS

| Item   | Standard                         | Limit      |
|--|----------------------------------|------------|
| <b>Model code</b>  | 5YR1 (for USA)<br>5YR2 (for CAN) | ...<br>... |
| <b>Dimensions</b>  |                                  |            |
| Overall length   | 1755 mm (69.1 in)                | ...        |
| Overall width  | 699 mm (27.5 in)                 | ...        |
| Overall height   | 1063 mm (41.8 in)                | ...        |
| Seat height  | 759 mm (29.8 in)                 | ...        |
| Wheelbase  | 1230 mm (48.4 in)                | ...        |
| Ground clearance   | 95 mm (3.8 in)                   | ...        |
| Minimum turning radius   | 1800mm (72 in)                   | ...        |
| <b>Weight</b>  |                                  |            |
| Wet (without oil and a full fuel tank)                           | 109 kg (240 lb)                  | ...        |
| Dry (without oil and fuel)                                       | 104kg (229 lb)                   | ...        |
| Maximun load (total of cargo, rider, passenger, and accessories) | 253kg (558 lb)                   | ...        |

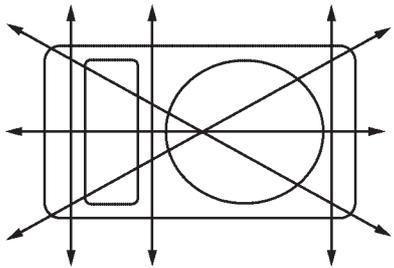


**ENGINE SPECIFICATIONS**

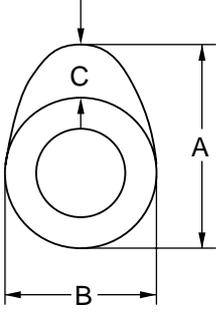
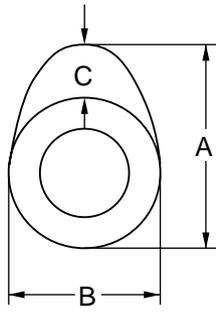
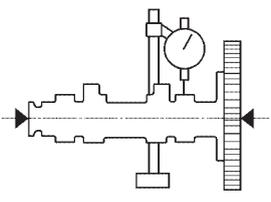
| Item   | Standard   | Limit |
|--|--|-------|
| <b>Engine</b>                                |  |       |
| Engine type                                  | Forced Air cooled 4-stroke, SOHC                   | ...   |
| Displacement                                 | 0.125L(125.0 cm <sup>3</sup> )                     | ...   |
| Cylinder arrangement                         | Forward inclined single cylinder                   | ...   |
| Bore x stroke                                | 51.5 x 60.0 mm                                     | ...   |
| Compression ratio                            | 9.8±0.4 :1   | ...   |
| Engine idle speed                            | 1600~1700 r/min                                    | ...   |
| Vacuum pressure at engine idle speed         | 30.0 kpa(238.6 mmHg)                               | ...   |
| Standard compression pressure (at sea level) | 950 kPa(9.5kg/cm <sup>2</sup> ) / 300 r/min        | ...   |
| <b>Fuel</b>                                  |  |       |
| Recommended fuel                             | Regular unleaded gasoline                          | ...   |
| Fuel tank capacity                           |  |       |
| Total (including reserve)                    | 4.5L (0.98Imp gal, 1.18 USgal)                     | ...   |
| <b>Engine oil</b>                            |  |       |
| Lubrication system                           | Wet sump   | ...   |
| Recommended oil                              | SAE20W40SE<br>Yamaha 4-cycle oil<br>EFERO X, Z, BX | ...   |
|  |  |       |
| Quantity                                     |  |       |
| Periodic oil change                          | 1.0L(0.92 Imp qt, 1.09 US qt)                      | ...   |
| With oil filter replacement                  | 1.2L(1.10 Imp qt, 1.31 US qt)                      | ...   |
| Total amount                                 | 1.2L(1.10 Imp qt, 1.31 US qt)                      | ...   |
| <b>Final gear oil</b>                        |  |       |
| Recommended oil                              | SAE85W140S Ehypoid gear oil                        | ...   |
| Periodic oil change                          | 0.13L(0.12 Imp qt, 0.14 US qt)                     | ...   |
| Total amount                                 | 0.15L(0.14 Imp qt, 0.16 US qt)                     | ...   |

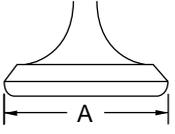
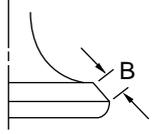
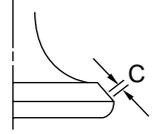
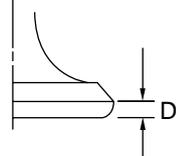
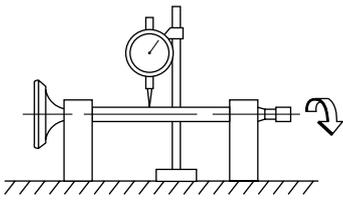
# ENGINE SPECIFICATIONS



| Item  | Standard  | Limit                              |
|---|---|------------------------------------|
| <b>Oil filter</b><br>Oil filter type  | Wire mesh   | ...                                |
| <b>Oil pump</b><br>Oil pump type<br>Inner rotor to outer rotor tip clearance<br>Outer rotor to pump housing clearance<br>Oil pump housing to inner rotor and outer rotor clearance                      | Trochoid<br>0.15 mm<br>0.013-0.036 mm<br>0.06-0.10 mm | ...<br>0.23mm<br>0.106mm<br>0.17mm |
| <b>Starting system type</b>   | Electric and kick starter                             | ...                                |
| Spark plug<br>Model (manufacturer) × quantity<br>Spark plug gap   | CR7E (NGK) × 1<br>0.7~0.8mm                           | ...<br>...                         |
| <b>Cylinder head</b><br>Volume<br>Max. warpage<br><br> <p style="text-align: right; margin-right: 50px;">11110304</p> | 12.3~12.7cm <sup>3</sup><br>...                       | ...<br>0.03 mm                     |



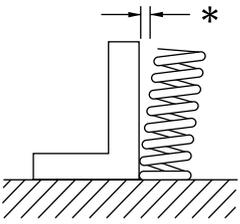
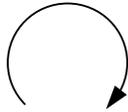
| Item   | Standard  | Limit   |
|--|---|---|
| <p><b>Camshaft</b><br/>                     Drive system<br/>                     Intake camshaft lobe dimensions</p>  <p>Measurement A<br/>                     Measurement B<br/>                     Measurement C</p> <p>Exhaust camshaft lobe dimensions</p>  <p>Measurement A<br/>                     Measurement B<br/>                     Measurement C</p> <p>Max. camshaft runout</p>  | <p>Chain drive (left)</p> <p>26.153~26.253 mm<br/>                     21.015~21.115 mm<br/>                     5.203mm</p> <p>26.153~26.253 mm<br/>                     21.056~21.156 mm<br/>                     5.203 mm</p> <p>...</p> | <p>...</p> <p>26.053 mm<br/>                     20.915 mm<br/>                     ...</p> <p>26.053 mm<br/>                     20.956 mm<br/>                     ...</p> <p>0.03 mm</p> |

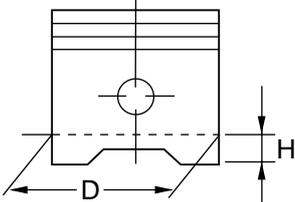
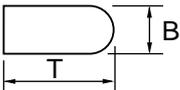
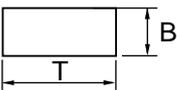
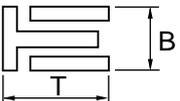
| Item  | Standard  | Limit  |
|---|---|--|
| <b>Timing chain</b>   |   |  |
| Model/number of links   | Morse 92RH2005 / 88   | ...  |
| Tensioning system   | Automatic   | ...  |
| <b>Valve, valve seats, valve guides</b>   |   |  |
| Valve clearance (cold)  |   |  |
| Intake  | 0.08~0.12 mm  | ...  |
| Exhaust   | 0.13~0.17 mm  | ...  |
| Valve dimensions  |   |  |
| <br>Head Diameter      | <br>Face Width | <br>Seat Width |
| <br>Margin Thickness |   |  |
| Valve head diameter A   |   |  |
| Intake  | 23.9~24.1 mm  | ...  |
| Exhaust   | 20.9~21.1 mm  | ...  |
| Valve face width B  |   |  |
| Intake  | 1.69~2.40 mm  | ...  |
| Exhaust   | 1.69~2.40 mm  | ...  |
| Valve seat width C  |   |  |
| Intake  | 0.9~1.1 mm  | 1.6mm  |
| Exhaust   | 0.9~1.1 mm  | 1.6mm  |
| Valve margin thickness D  |   |  |
| Intake  | 0.85~1.15 mm  | ...  |
| Exhaust   | 0.85~1.15 mm  | ...  |
| Valve stem diameter   |   |  |
| Intake  | 4.475~4.490 mm  | 4.445 mm   |
| Exhaust   | 4.460~4.475 mm  | 4.430 mm   |
| Valve guide inside diameter   |   |  |
| Intake  | 4.500~4.512 mm  | 4.550 mm   |
| Exhaust   | 4.500~4.512 mm  | 4.550 mm   |
| Valve stem to valve guide clearance   |   |  |
| Intake  | 0.010~0.037 mm  | 0.080 mm   |
| Exhaust   | 0.025~0.057 mm  | 0.100 mm   |
| Valve stem runout   | ...   | 0.010 mm   |
|                      |   |  |
| Valve seat width  |   |  |
| Intake  | 0.9~1.1 mm  | 1.6mm  |
| Exhaust   | 0.9~1.1 mm  | 1.6mm  |

# ENGINE SPECIFICATIONS

**SPEC**



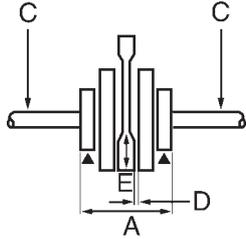
| Item  | Standard                         | Limit       |
|---|----------------------------------|-------------|
| <b>Valve springs</b>  |                                  |             |
| Free length   |                                  |             |
| Intake  | 37.30 mm                         | 35.40 mm    |
| Exhaust   | 37.30 mm                         | 35.40 mm    |
| Installed length (valve closed)   |                                  |             |
| Intake  | 25.77mm                          | ...         |
| Exhaust   | 25.77mm                          | ...         |
| Compressed spring force (installed)   |                                  |             |
| Intake  | 147±11N (15.0 ± 1.1 kgf/mm)      | ...         |
| Exhaust   | 147±11N (15.0 ± 1.1 kgf/mm)      | ...         |
| Spring tilt   |                                  |             |
|    |                                  |             |
| Intake  | ...                              | 2.5°/1.6 mm |
| Exhaust   | ...                              | 2.5°/1.6 mm |
| Winding direction (top view)  |                                  |             |
| Intake  | Clockwise                        | ...         |
| Exhaust   | Clockwise                        | ...         |
|  |                                  |             |
| Valve seat reformed   | Yes                              | ...         |
| <b>Cylinder</b>   |                                  |             |
| Cylinder arrangement  | Forward inclined single cylinder | ...         |
| Bore x stroke   | 51.5 x 60mm                      | ...         |
| Compression ratio   | 9.8 ± 0.4:1                      | ...         |
| Bore  | 51.49~51.53 mm                   | ...         |
| Max. taper  | ...                              | 0.05 mm     |
| Max. out-of-round   | ...                              | 0.05 mm     |

| Item  | Standard                           | Limit          |
|---|------------------------------------|----------------|
| <b>Piston</b>   |                                    |                |
| Piston-to-cylinder clearance<br>Diameter D  | 0.010~0.030 mm<br>51.470~51.510 mm | 0.150mm<br>... |
|    |                                    |                |
| Height H  | 3.5 mm                             | ...            |
| Piston pin bore (in the piston)   |                                    |                |
| Diameter  | 13.002~13.013 mm                   | 13.043 mm      |
| Offset  | 0.35~0.65mm                        | ...            |
| Offset direction  | Intake side                        | ...            |
| Piston pin  |                                    |                |
| Outside diameter  | 12.996~13.000 mm                   | 12.976 mm      |
| Piston rings  |                                    |                |
| Top ring  |                                    |                |
|   |                                    |                |
| Ring type   | Barrel                             | ...            |
| Dimensions (B x T)  | 1.0 x 2.1mm                        | ...            |
| End gap (installed)   | 0.10~0.20 mm                       | 0.45mm         |
| Ring side clearance   | 0.02~0.08 mm                       | 0.13 mm        |
| 2nd ring  |                                    |                |
|  |                                    |                |
| Ring type   | Plain                              | ...            |
| Dimensions (B x T)  | 1.0 x 2.1mm                        | ...            |
| End gap (installed)   | 0.20~0.30 mm                       | 0.65mm         |
| Ring side clearance   | 0.02~0.06 mm                       | 0.12mm         |
| Oil ring  |                                    |                |
|  |                                    |                |
| Dimensions (B x T)  | 2.0 x 2.2 mm                       | ...            |
| End gap (installed)   | 0.2~0.7 mm                         | ...            |
| Ring side clearance   | 0.06~0.15 mm                       | ...            |

# ENGINE SPECIFICATIONS

**SPEC**



| Item   | Standard   | Limit                          |
|--|--|--------------------------------|
| <b>Rocker arm/rocker arm shaft</b><br>Rocker arm inside diameter<br>Rocker arm shaft outside diameter<br>Arm-to-shaft clearance  | 10~10.015mm<br>9.981~9.991 mm<br>0.009~0.034 mm    | ...<br>...<br>...              |
| <b>Connecting rod</b><br>Connecting rod length<br>Small end inside diameter  | 97.95~98.05 mm<br>13.015~13.028mm                  | ...<br>...                     |
| <b>Crankshaft</b><br><br>Width A<br>Max. runout C<br>Big end side clearance D<br>Big end radial clearance E | 45.15~45.20 mm<br>...<br>0.10~0.40 mm<br>0~0.010mm | ...<br>0.03mm<br>1.00mm<br>... |

# ENGINE SPECIFICATIONS



| Item                                  | Standard              | Limit   |
|---------------------------------------|-----------------------|---------|
| <b>Clutch</b>                         |                       |         |
| Clutch type                           | Automatic centrifugal | ...     |
| Clutch shoe thickness                 | 3.4 ± 0.1 mm          | 2.0mm   |
| Clutch shoe spring free length        | 28.0 ± 0.4 mm         | ...     |
| Clutch housing inside diameter        | 120 ± 0.1 mm          | 120.3mm |
| Compression spring free length        | 113.6 mm              | ...     |
| Weight outside diameter               | 20 ± 0.1 mm           | ...     |
| Clutch-in revolution                  | 3200±300 r/min        | ...     |
| Clutch-stall revolution               | 5500±500 r/min        | ...     |
| <b>V-belt</b>                         |                       |         |
| V-belt width                          | 21.6 mm               | 19.5mm  |
| <b>Transmission</b>                   |                       |         |
| Transmission type                     | V-belt automatic      | ...     |
| Primary reduction system              | Helical gear          | ...     |
| Primary reduction ratio               | 40/15 (2.667)         | ...     |
| Secondary reduction system            | Spur gear             | ...     |
| Secondary reduction ratio             | 38/13 (2.923)         | ...     |
| Max. main axle runout                 | ...                   | 0.02 mm |
| Max. drive axle runout                | ...                   | 0.02 mm |
| <b>Carburetor</b>                     |                       |         |
| Model (manufacturer) × quantity       | BS26 (MIKUNI) × 1     | ...     |
| ID mark                               | 5YR 00                | ...     |
| Venturi tube bore                     | Ø22.3                 | ...     |
| Main jet                              | #97.5                 | ...     |
| Main air jet                          | 0.5                   | ...     |
| Jet needle                            | 4D×16-1               | ...     |
| Needle jet                            | 0-4M                  | ...     |
| Pilot air jet 1                       | 160                   | ...     |
| Pilot outlet                          | 0.81                  | ...     |
| Pilot jet                             | 22.5                  | ...     |
| Bypass 1                              | Ø0.8                  | ...     |
| Bypass 2                              | Ø1.0                  | ...     |
| Bypass 3                              | Ø1.1                  | ...     |
| Valve seat size                       | 2.0                   | ...     |
| Starter jet 1                         | 40                    | ...     |
| Starter jet 2                         | 0.8                   | ...     |
| Throttle valve size                   | 115                   | ...     |
| Fuel level ( using fuel level gauge ) | 6.5~7.5mm             | ...     |
| Engine idle speed                     | 1600~1700 r/min       | ...     |
| CO% (air induction system ON)         | 0.2~1.4 %             | ...     |
| CO% (air induction system OFF)        | 4.0~5.0 %             | ...     |
| Oil temperature (°C)                  | 70~80 °C              | ...     |

# ENGINE SPECIFICATIONS



| Item  | Standard                       | Limit |
|---|--------------------------------|-------|
| <b>Throttle bodys</b>   |                                |       |
| Model (manufacturer) x quantity                               | 5YR (SAFETY CONTROL CABLE) x 2 | ...   |
| Intake vacuum pressure  | 30.0kpa (238.6mmHg)            | ...   |
| Throttle cable free play (at the flange of the throttle grip) | 3~5mm                          | ...   |
| ID mark   | 5YR1                           | ...   |



## CHASSIS SPECIFICATIONS

| Item                      | Standard                                  | Limit  |
|---------------------------|---|--------|
| <b>Frame</b>              |   |        |
| Frame type                | Steel tube underbone                      | ...    |
| Caster angle              | 32 °                                      | ...    |
| Trail                     | 75 mm                                     | ...    |
| <b>Front wheel</b>        |   |        |
| Wheel type                | Cast wheel                                | ...    |
| Rim                       |   |        |
| Size                      | 10 × MT2.15                               | ...    |
| Material                  | Aluminum                                  | ...    |
| Wheel travel              | 59mm                                      | ...    |
| Wheel runout              |   |        |
| Max. radial wheel runout  | ...                                       | 1.0 mm |
| Max. lateral wheel runout | ...                                       | 1.0 mm |
| <b>Rear wheel</b>         |   |        |
| Wheel type                | Cast wheel                                | ...    |
| Rim                       |   |        |
| Size                      | 10 × MT2.15                               | ...    |
| Material                  | Aluminum                                  | ...    |
| Wheel travel              | 54mm                                      | ...    |
| Wheel runout              |   |        |
| Max. radial wheel runout  | ...                                       | 1.0 mm |
| Max. lateral wheel runout | ...                                       | 1.0 mm |
| <b>Front tire</b>         |   |        |
| Tire type                 | Tubeless                                  | ...    |
| Size                      | 3.50-10 51J                               | ...    |
| Model (manufacturer)      | C-922L (CHENG SHIN)                       | ...    |
| Tire pressure (cold)      |   |        |
| 0~90 kg                   | 150kpa (1.5 kg/cm <sup>2</sup> , 22 psi)  | ...    |
| 90~197 kg                 | 150kpa (1.5 kg/cm <sup>2</sup> , 22 psi)  | ...    |
| Min. tire tread depth     | ...                                       | 0.8mm  |
| <b>Rear tire</b>          |   |        |
| Tire type                 | Tubeless                                  | ...    |
| Size                      | 3.50-10 51J                               | ...    |
| Model (manufacturer)      | C-6007 (CHENG SHIN)                       | ...    |
| Tire pressure (cold)      |   |        |
| 0~90 kg                   | 200kpa (2.0 kg/cm <sup>2</sup> , 29 psi)  | ...    |
| 90~197 kg                 | 225kpa (2.25 kg/cm <sup>2</sup> , 32 psi) | ...    |
| Min. tire tread depth     | ...                                       | 0.8mm  |

# CHASSIS SPECIFICATIONS



| Item                                 | Standard             | Limit          |
|--------------------------------------|----------------------|----------------|
| <b>Front disc brake</b>              |                      |                |
| Brake type                           | Single disc brake    | ...            |
| Operation                            | Right-hand operation | ...            |
| Brake lever free play (at lever end) | 3~5mm                | ...            |
| Recommended fluid                    | DOT 4                | ...            |
| Brake disc                           |                      |                |
| Diameter x thickness                 | 180.0 x 4.0 mm       | 180.0 x 3.5 mm |
| Min. thickness                       | ...                  | 3.5mm          |
| Max. deflection                      | ...                  | 0.10 mm        |
| Brake pad lining thickness-inner     | 6.0 mm               | 0.8mm          |
| Brake pad lining thickness-outer     | 6.0 mm               | 0.8mm          |
| Master cylinder inside diameter      | 11mm                 | ...            |
| Caliper cylinder inside diameter     | 34.93mm              | ...            |

# CHASSIS SPECIFICATIONS



| Item                                 | Standard                   | Limit   |
|--------------------------------------|----------------------------|---------|
| <b>Rear drum brake</b>               |                            |         |
| Brake type                           | Drum brake                 | ...     |
| Operation                            | Left-hand operation        | ...     |
| Brake lever free play (at lever end) | 10~20mm                    | ...     |
| Brake drum inside diameter           | 110 mm                     | 111mm   |
| Lining thickness                     | 4.0mm                      | 2mm     |
| <b>Front suspension</b>              |                            |         |
| Suspension type                      | Telescopic                 | ...     |
| Front fork type                      | Coil spring/oil damper     | ...     |
| Front fork travel                    | 80 mm                      | ...     |
| Spring                               |                            |         |
| Free length                          | 257.5 mm                   | 252.4mm |
| Installed length                     | 245.5mm                    | ...     |
| Spring rate (K1)                     | 12.7N/mm (1.27 kg/mm)      | ...     |
| Spring stroke (K1)                   | 0~50mm                     | ...     |
| Spring rate (K2)                     | 19.6N/mm (1.96kg/mm)       | ...     |
| Spring stroke (K2)                   | 50~80mm                    | ...     |
| Optional spring available            | No                         | ...     |
| Fork oil                             |                            |         |
| Recommended oil                      | Fork oil G10 or equivalent | ...     |
| Quantity (each front fork leg)       | 126 ± 2.5cc                | ...     |
| Inner tube outer diameter            | 33 mm                      | ...     |
| Inner tube bending limit             | ...                        | 0.2 mm  |
| <b>Steering system</b>               |                            |         |
| Steering bearing type                | Angular bearing            | ...     |
| Lock to lock angle (left)            | 47.5 °                     | ...     |
| Lock to lock angle (Right)           | 47.5 °                     | ...     |
| <b>Rear suspension</b>               |                            |         |
| Suspension type                      | Swingarm                   | ...     |
| Rear shock absorber assembly type    | Coil spring/oil damper     | ...     |
| Rear shock absorber assembly travel  | 65mm                       | ...     |
| Spring                               |                            |         |
| Free length                          | 208mm                      | ...     |
| Installed length                     | 198mm                      | ...     |
| Spring rate (K1)                     | 43N/mm (4.3kg/mm)          | ...     |
| Spring stroke (K1)                   | 0~65mm                     | ...     |
| Optional spring available            | No                         | ...     |



## ELECTRICAL SPECIFICATIONS

| Item   | Standard                     | Limit |
|--|------------------------------|-------|
| <b>System voltage</b>                                | 12V                          | ...   |
| Ignition system                                      |                              |       |
| Ignition system type                                 | C.D.I.                       | ...   |
| Ignition timing (B.T.D.C.)                           | 5 °/1650 r/min (IDL)         | ...   |
| Advancer type  | Digital                      | ...   |
| Pickup coil resistance /color                        | 304~456 Ω / WR-WL            | ...   |
| C.D.I. unit model (manufacturer)                     | 5YR00(T-MORIC)               | ...   |
| <b>Ignition coil</b>                                 |                              |       |
| Model (manufacturer)                                 | 2JN (T-MORIC)                | ...   |
| Minimum ignition spark gap                           | 6mm                          | ...   |
| Primary coil resistance                              | 0.184~0.276 Ω at 20 ° C      | ...   |
| Secondary coil resistance                            | 6.32~9.48 kΩ at 20 ° C       | ...   |
| <b>Spark plug cap</b>                                |                              |       |
| Material   | Resin                        | ...   |
| Resistance   | 8~12 kΩ                      | ...   |
| <b>Charging system</b>                               |                              |       |
| System type  | C.D.I. magneto               | ...   |
| Model (manufacturer)                                 | 5NW 01 (T-MORIC)             | ...   |
| Nominal output                                       | 14V 120W / 5000 r/min        | ...   |
| Lighting coil resistance /color                      | 0.28~0.42 Ω/B-YR             | ...   |
| Lighting coil resistance /color                      | 0.32~0.48 Ω/B-W              | ...   |
| <b>Voltage regulator</b>                             |                              |       |
| Regulator type                                       | Semiconductor, short circuit | ...   |
| Model (manufacturer)                                 | SH671-12 (XIN DIAN YUAN)     | ...   |
| No load regulated voltage(DC)                        | 14~15 V                      | ...   |
| <b>Rectifier</b>                                     |                              |       |
| Model (manufacturer)                                 | SH671-12 (XIN DIAN YUAN)     | ...   |
| Rectifier capacity(DC)                               | 8A                           | ...   |
| Withstand voltage                                    | 200V                         | ...   |
| <b>Battery</b>                                       |                              |       |
| Battery type (manufacturer)                          | GTX7A-BS (GS)                | ...   |
| Battery voltage capacity                             | 12V 6AH                      | ...   |
| Specific gravity                                     | 1.330                        | ...   |
| Ten hour rate amperage                               | 6 AH                         | ...   |
| <b>Headlight type</b>                                | Krypton bulb                 | ...   |
| <b>Indicator light</b><br>(voltage/wattage×quantity) |                              |       |
| Turn signal indicator light                          | 12 V 1.7 W × 1               | ...   |
| High beam indicator light                            | 14 V 3W × 1                  | ...   |

## ELECTRICAL SPECIFICATIONS



| Item                                      | Standard           | Limit |
|---|--------------------|-------|
| <b>Bulbs (voltage/wattage x quantity)</b> |                    |       |
| Headlight                                 | 12 V 60 W/55 W x 1 | ...   |
| Tail/brake light                          | 12 V 8W/27 W x 1   | ...   |
| Front turn signal light                   | 12 V 10 W x 2      | ...   |
| Rear turn signal light                    | 12 V 10 W x 2      | ...   |
| Speedometer light                         | 14 V 3 W x1        | ...   |
| Fuel lever meter light                    | 14 V 3 W x1        | ...   |