

SUZUKI

TU250X

SERVICE MANUAL



9 9 5 0 0 - 3 2 1 6 0 - 0 3 E

IMPORTANT

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 information required to properly inspect and service TU250X in accordance with all EPA regulations. It is strongly recommended that the chapter on Emission Control, Periodic Servicing, FI System and Fuel System 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.

FOREWORD

This manual contains an introductory description on the SUZUKI TU250X 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.

SUZUKI MOTOR CORPORATION

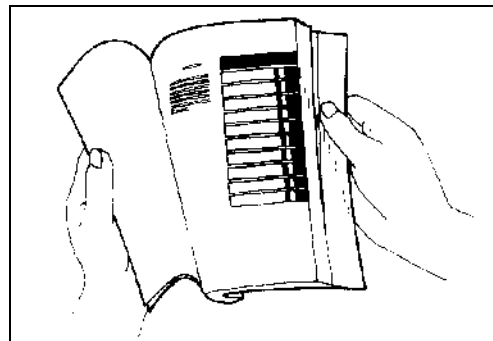
© COPYRIGHT SUZUKI MOTOR CORPORATION 2009

GROUP INDEX

| | |
|---------------------------------------|-----------|
| GENERAL INFORMATION | 1 |
| PERIODIC MAINTENANCE | 2 |
| ENGINE | 3 |
| FI SYSTEM DIAGNOSIS | 4 |
| FUEL SYSTEM AND THROTTLE BODY | 5 |
| EXHAUST SYSTEM | 6 |
| COOLING AND LUBRICATION SYSTEM | 7 |
| CHASSIS | 8 |
| ELECTRICAL SYSTEM | 9 |
| SERVICING INFORMATION | 10 |
| EMISSION CONTROL INFORMATION | 11 |
| WIRING DIAGRAM | 12 |

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 you find the item and page you need.



COMPONENT PARTS AND WORK TO BE DONE

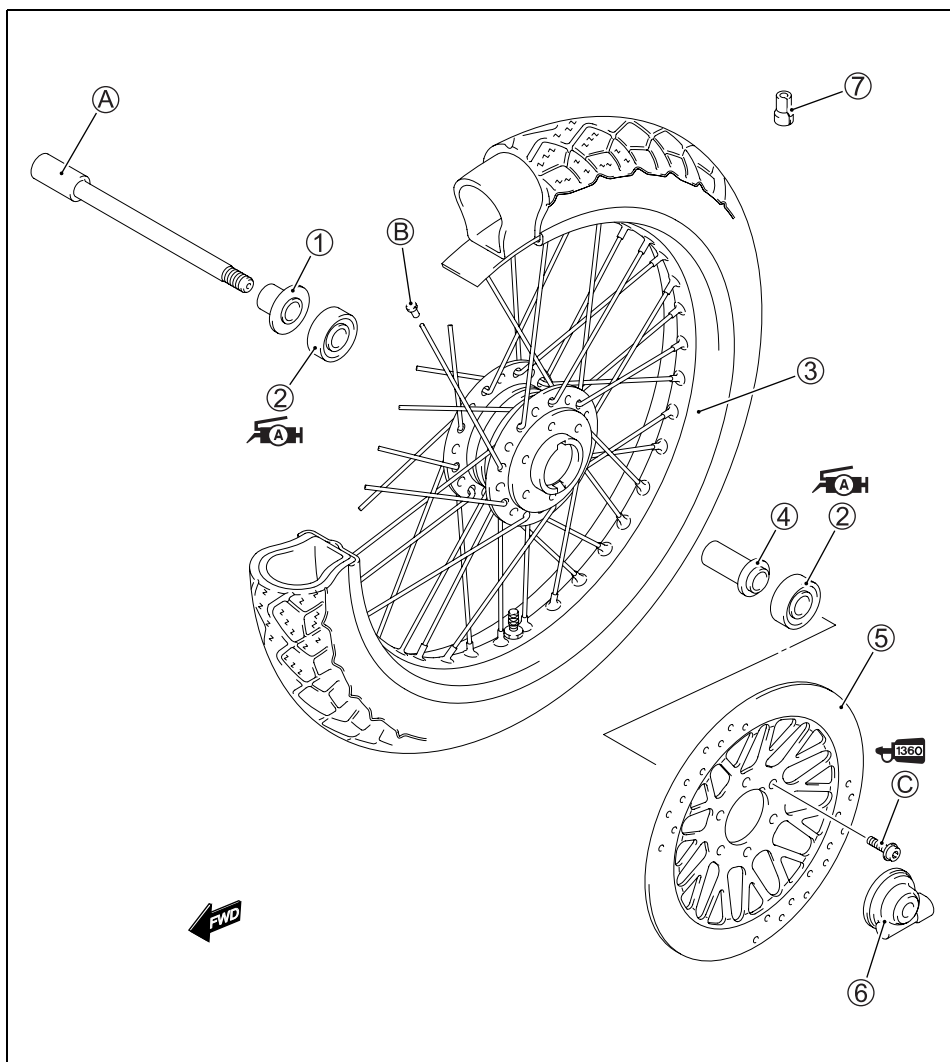
Under the name of each system or unit, is its exploded view. Work instructions and other service information such as the tightening torque, lubricating points and locking agent points, are provided.

Example: Front wheel

| | |
|---|---------------------|
| ① | Collar |
| ② | Bearing |
| ③ | Front wheel |
| ④ | Spacer |
| ⑤ | Brake disc |
| ⑥ | Speedometer gearbox |
| ⑦ | Balancer weight |
| A | Front axle |
| B | Spoke nipple |
| C | Brake disc bolt |








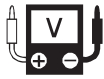

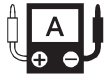



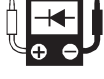









| ITEM | N·m | kgf·m | lbf·ft |
|------|-----|-------|--------|
| A | 65 | 6.5 | 47.0 |
| B | 3 | 0.3 | 2.0 |
| C | 23 | 2.3 | 16.5 |



SYMBOL MARKS AND MATERIALS

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

| SYMBOL | DEFINITION | SYMBOL | DEFINITION |
|---|---|---|--|
|  | Torque control required. Data beside it indicates specified torque. |  | Apply THREAD LOCK SUPER “1360” or equivalent. 99000-32130 |
|  | Apply oil. Use engine oil or transmission oil unless otherwise specified. |  | Use SUZUKI FORK OIL SS-08 or equivalent. 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. (DOT 4) |
|  | Apply SUZUKI SUPER GREASE “A” or equivalent. 99000-25010 |  | Measure in voltage range. |
|  | Apply SUZUKI SILICONE GREASE or equivalent. 99000-25100 |  | Measure in current range. |
|  | Apply SUZUKI WATER RESISTANCE GREASE or equivalent. 99000-25160 |  | Measure in resistance range. |
|  | Apply SUZUKI MOLY PASTE or equivalent. 99000-25140 |  | Measure in diode test range. |
|  | Apply SUZUKI BOND “1215” or equivalent. 99000-31110 |  | Measure in continuity test range. |
|  | Apply THREAD LOCK SUPER “1303” or equivalent. 99000-32030 |  | Use special tool. |
|  | Apply THREAD LOCK SUPER “1322” or equivalent. 99000-32110 |  | Indication of service data. |
|  | Apply THREAD SUPER “1342” or equivalent. 99000-32050 | | |

ABBREVIATIONS USED IN THIS MANUAL

| | | | |
|------------|---|------------|--|
| A | | H | |
| ABDC | : After Bottom Dead Center | HC | : Hydrocarbons |
| AC | : Alternating Current | HO2 Sensor | : Heated Oxygen Sensor (HO2S) |
| ACL | : Air Cleaner, Air Cleaner Box | | |
| API | : American Petroleum Institute | I | |
| ATDC | : After Top Dead Center | IAP Sensor | : Intake Air Pressure Sensor (IAPS) (MAP Sensor) |
| A/F | : Air Fuel Mixture | IAT Sensor | : Intake Air Temperature Sensor (IATS) |
| B | | IG | : Ignition |
| BBDC | : Before Bottom Dead Center | L | |
| BTDC | : Before Top Dead Center | LED | : Light Emitting Diode (Malfunction Indicator Lamp) |
| B+ | : Battery Positive Voltage | LH | : Left Hand |
| C | | M | |
| CKP Sensor | : Crankshaft Position Sensor (CKPS) | MAL-Code | : Malfunction Code (Diagnostic Code) |
| CKT | : Circuit | Max | : Maximum |
| CLP Switch | : Clutch Lever Position Switch (Clutch Switch) | MIL | : Malfunction Indicator Lamp (LED) |
| CO | : Carbon Monoxide | Min | : Minimum |
| CPU | : Central Processing Unit | N | |
| D | | NOX | : Nitrogen Oxides |
| DC | : Direct Current | O | |
| DMC | : Dealer Mode Coupler | OHC | : Over Head Camshaft |
| DRL | : Daytime Running Light | P | |
| DTC | : Diagnostic Trouble Code | PAIR | : Pulsed Secondary Air Injection |
| E | | PCV | : Positive Crankcase Ventilation (Crankcase Breather) |
| ECM | : Engine Control Module Engine Control Unit (ECU) (FI Control Unit) | R | |
| ET Sensor | : Engine Temperature Sensor (ETS) | RH | : Right Hand |
| F | | ROM | : Read Only Memory |
| FI | : Fuel Injection, Fuel Injector | G | |
| FP | : Fuel Pump | GEN | : Generator |
| FPR | : Fuel Pressure Regulator | GND | : Ground |

S

SAE : Society of Automotive Engineers
SDS : Suzuki Diagnosis System
STC System : Secondary Throttle Control System
(STCS)
STP Sensor : Secondary Throttle Position Sensor
(STPS)
ST Valve : Secondary Throttle Valve (STV)
STV Actuator : Secondary Throttle Valve Actuator
(STVA)

T

TO Sensor : Tip-Over Sensor (TOS)
TP Sensor : Throttle Position Sensor (TPS)

SAE-TO-FORMER SUZUKI TERM

This table lists SAE (Society of Automotive Engineers) J1930 terms and abbreviations which may be used in this manual in compliance with SAE recommendations, as well as their former SUZUKI names.

| SAE TERM | | FORMER SUZUKI TERM |
|----------------------------|--------------|---|
| FULL TERM | ABBREVIATION | |
| A | | |
| Air Cleaner | ACL | Air Cleaner, Air Cleaner Box |
| B | | |
| Barometric Pressure | BARO | Barometric Pressure, Atmospheric Pressure (APS, AP Sensor) |
| Battery Positive Voltage | B+ | Battery Voltage, +B |
| C | | |
| Crankshaft Position Sensor | CKP Sensor | Crankshaft Position Sensor (CKPS), Crank Angle |
| D | | |
| Data Link Connector | DLC | Dealer Mode Coupler |
| Diagnostic Test Mode | DTM | — |
| Diagnostic Trouble Code | DTC | Diagnostic Code, Malfunction Code |
| E | | |
| Electronic Ignition | EI | — |
| Engine Control Module | ECM | Engine Control Module (ECM) FI Control Unit, Engine Control Unit (ECU) |
| Engine Temperature | ET | Engine Temperature |
| Engine Speed | RPM | Engine Speed (RPM) |
| F | | |
| Fuel Level Sensor | — | Fuel Level Sensor, Fuel Level Gauge |
| Fuel Pump | FP | Fuel Pump (FP) |
| G | | |
| Generator | GEN | Generator |
| Ground | GND | Ground (GND, GRD) |
| I | | |
| Ignition Control | IC | Electronic Spark Advance (ESA) |
| Ignition Control Module | ICM | — |
| Intake Air Temperature | IAT | Intake Air Temperature (IAT), Air Temperature |

| SAE TERM | | FORMER SUZUKI TERM |
|-----------------------------------|--------------|--|
| FULL TERM | ABBREVIATION | |
| M | | |
| Malfunction Indicator Lamp | MIL | LED Lamp Malfunction Indicator Lamp (MIL) |
| Manifold Absolute Pressure | MAP | Intake Air Pressure (IAP), Intake Vacuum |
| Mass Air Flow | MAF | Air Flow |
| O | | |
| On-Board Diagnostic | OBD | Self-Diagnosis Function Diagnostic |
| Open Loop | OL | — |
| P | | |
| Programmable Read Only Memory | PROM | — |
| Pulsed Secondary Air Injection | PAIR | Pulse Air Control (PAIR) |
| R | | |
| Random Access Memory | RAM | — |
| Read Only Memory | ROM | ROM |
| S | | |
| Secondary Air Injection | AIR | — |
| Secondary Throttle Control System | STCS | STC System (STCS) |
| Secondary Throttle Valve | STV | ST Valve (STV) |
| Secondary Throttle Valve Actuator | STVA | STV Actuator (STVA) |
| T | | |
| Throttle Body | TB | Throttle Body (TB) |
| Throttle Body Fuel Injection | TBI | Throttle Body Fuel Injection (TBI) |
| Throttle Position Sensor | TP Sensor | TP Sensor (TPS) |
| Tank Pressure Control Valve | TPC Valve | TPC Valve (TPCV) |
| V | | |
| Voltage Regulator | VR | Voltage Regulator |
| Volume Air Flow | VAF | Air Flow |

WIRE COLOR

| | | | | | |
|------|---------------------------------|------|-----------------------------|---|----------|
| B | : Black | Gr | : Gray | R | : Red |
| Bl | : Blue | Lbl | : Light blue | V | : Violet |
| Br | : Brown | Lg | : Light green | W | : White |
| Dg | : Dark green | O | : Orange | Y | : Yellow |
| G | : Green | P | : Pink | | |
| | | | | | |
| B/Bl | : Black with Blue tracer | O/R | : Orange with Red tracer | | |
| B/Br | : Black with Brown tracer | O/W | : Orange with White tracer | | |
| B/G | : Black with Green tracer | O/Y | : Orange with Yellow tracer | | |
| B/R | : Black with Red tracer | R/W | : Red with White tracer | | |
| B/W | : Black with White tracer | R/Y | : Red with Yellow tracer | | |
| B/Y | : Black with Yellow tracer | W/B | : White with Black tracer | | |
| Bl/B | : Blue with Black tracer | W/Bl | : White with Blue tracer | | |
| Bl/R | : Blue with Red tracer | W/R | : White with Red tracer | | |
| Bl/W | : Blue with White tracer | Y/B | : Yellow with Black tracer | | |
| Bl/Y | : Blue with Yellow tracer | Y/Bl | : Yellow with Blue tracer | | |
| Lg/W | : Light green with White tracer | Y/G | : Yellow with Green tracer | | |
| O/B | : Orange with Black tracer | Y/R | : Yellow with Red tracer | | |
| O/Bl | : Orange with Blue tracer | Y/W | : Yellow with White tracer | | |
| O/G | : Orange with Green tracer | | | | |

GENERAL INFORMATION

1

CONTENTS

| | |
|--|-------------|
| WARNING/CAUTION/NOTE..... | 1- 2 |
| GENERAL PRECAUTIONS..... | 1- 2 |
| SUZUKI TU250X ('09-MODEL)..... | 1- 4 |
| SERIAL NUMBER LOCATION..... | 1- 4 |
| FUEL AND OIL RECOMMENDATION | 1- 5 |
| FUEL..... | 1- 5 |
| ENGINE OIL | 1- 5 |
| BRAKE FLUID..... | 1- 5 |
| FRONT FORK OIL..... | 1- 5 |
| BREAK-IN PROCEDURES..... | 1- 5 |
| INFORMATION LABELS..... | 1- 6 |
| SPECIFICATIONS..... | 1- 7 |
| DIMENSIONS AND CURB MASS..... | 1- 7 |
| ENGINE | 1- 7 |
| DRIVE TRAIN | 1- 7 |
| CHASSIS | 1- 8 |
| ELECTRICAL | 1- 8 |
| CAPACITIES | 1- 8 |

COUNTRY AND AREA CODE

The following code stand for the applicable country and area.

| CODE | COUNTRY or AREA | EFFECTIVE FRAME NO. |
|------|--------------------------------|---------------------|
| E-03 | U.S.A. (Except for California) | JS1NJ4CA 92100001 – |