# SUZUKI AANA6550

# SERVICE MANUAL



# FOREWORD

This manual contains an introductory description on the SUZUKI AN650 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.

#### 

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.

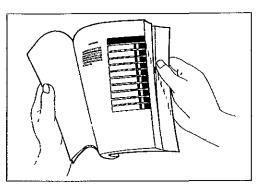
# **GROUP INDEX**

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#### SUZUKI MOTOR CORPORATION

# HOW TO USE THIS MANUAL TO LOCATE WHAT YOU ARE LOOKING FOR:

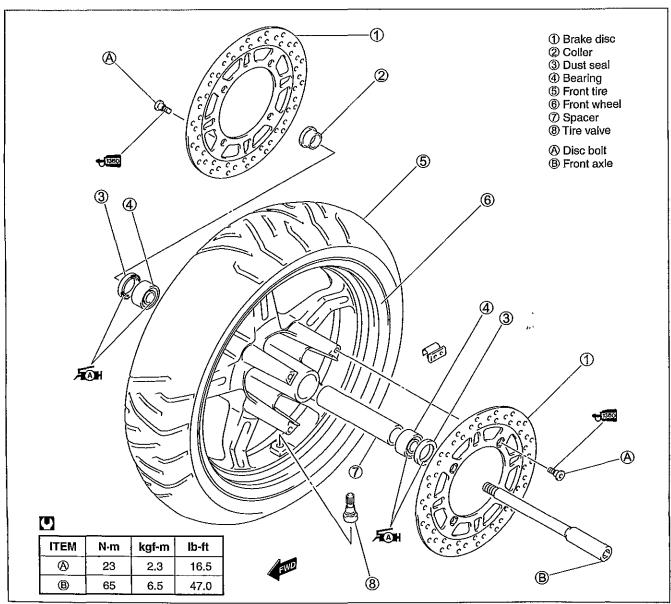
- 1. The text of this manual is divided into sections.
- 2. The section titles are listed in the GROUP INDEX.
- 3. Holding the manual as shown at the right will allow you to find the first page of the section easily.
- 4. The contents are listed on the first page of each section to help you find the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



## SYMBOL

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.

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SYMBOL	DEFINITION	SYMBOL	DEFINITION
	Torque control required. Data beside it indicates specified torque.	LLC	Use engine coolant. 99000-99032-11X
	Apply oil. Use engine oil unless other- wise specified.	FORK	Use fork oil. 99000-99044-10G
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.
	Apply SUZUKI SUPER GREASE "A". 99000-25010		Measure in voltage range.
<b>For</b>	Apply SUZUKI MOLY PASTE. 99000-25140		Measure in current range.
1207B	Apply SUZUKI BOND "1207B" 99104-31140 (USA)		Measure in resistance range.
1215	Apply SUZUKI BOND "1215". 99000-31110 (Except USA)		Measure in diode test range.
1216B	Apply SUZUKI BOND "1216B". 99000-31230	( <b>ס</b> ))	Measure in continuity test range.
1303	Apply THREAD LOCK SUPER "1303". 99000-32030	TOOL	Use special tool.
1342	Apply THREAD LOCK "1342". 99000-32050	DATA	Indication of service data.
1360	Apply THREAD LOCK SUPER "1360". 99000-32130		

# ABBREVIATIONS USED IN THIS MANUAL

# A

.

ABDC	: After Bottom Dead Center
AC	: Alternating Current
ACL	: Air Cleaner, Air Cleaner Box
API	: American Petroleum Institute
ATDC	: After Top Dead Center
ATM Pressure	e: Atmospheric Pressure
	Atmospheric Pressure Sensor
	(APS)
A/F	: Air Fuel Mixture

#### В

BBDC	: Before Bottom Dead Center
BTDC	: Before Top Dead Center
B+	: Battery Positive Voltage

# С

CKP Sensor	: Crankshaft Position Sensor (CKPS)
CKT	: Circuit
CLP Switch	: Clutch Lever Position Switch
	(Clutch Switch)
CMP Sensor	: Camshaft Position Sensor
	(CMPS)
CO	: Carbon Monoxide
CPU	: Central Processing Unit
CVT Control	
Unit	: Continuously Variable
	Transmission Control Unit

# D

DC	: Direct Current
DMC	: Dealer Mode Coupler
DOHC	: Double Over Head Camshaft
DRL	: Daytime Running Light

# Ε

ECM	: Engine Control Module
	Engine Control Unit (ECU)
	(FI Control Unit)
ECT Sensor	: Engine Coolant Temperature
	Sensor (ECTS), Water Temp.
	Sensor (WTS)
EVAP	: Evaporative Emission
EVAP Caniste	er: Evaporative Emission
	Canister (Canister)

#### F

FI	: Fuel Injection, Fuel Injector
FP	: Fuel Pump
FPR	: Fuel Pressure Regulator
FP Relay	: Fuel Pump Relay
FTPC Valve	: Fuel Tank Pressure Control Valve

#### G

GEN	: Generator
GND	: Ground
GP Switch	: Gear Position Switch

#### Η

HC	: Hydrocarbons
HO2S	: Heated Oxygen Senso

#### I

IAC Valve IAP Sensor IAT Sensor IG	: Idle Air Control Valve : Intake Air Pressure Sensor (IAPS) : Intake Air Temperature Sensor (IATS) : Ignition
L	
LCD LED	: Liquid Crystal Display : Light Emitting Diode

(Malfunction Indicator Lamp)

#### LH : Left Hand

M	
MAL-Code	: Malfunction Code (Diagnostic Code)
Max	: Maximum
MIL	: Malfunction Indicator Lamp (LED)
Min	: Minimum
N	
NOx	: Nitrogen Oxides
0	
OHC	: Over Head Camshaft
OLS	: Oil Level Switch
OPS	: Oil Pressure Switch
Р	
PCV	: Positive Crankcase Ventilation (Crankcase Breather)
R	
RH	: Right Hand
ROM	: Read Only Memory
S	
SAE	: Society of Automotive Engineers
т	
TO Sensor TP Sensor	: Tip Over Sensor (TOS) : Throttle Position Sensor (TPS)

#### **WIRE COLOR**

в	: Black	G	: Green	
BI	: Blue	Gr	: Gray	
Br	: Brown	Lbl	: Light blue	
Dg	: Dark green	Lg	: Lìght green	
Dgr	: Dark gray	0	: Orange	
B/Bl		: Black with Blue tracer		
B/G		er		
B/R				
B/Y				
	: Blue with Green trace			
BI/W	: Blue with White tracer			
Br/B				
G/B				
G/R				
G/Y				
Gr/R				
	: Gray with Yellow trace			
-	: Light green with Yello		er	
	: Orange with Blue trac			
O/R	•	ər		
O/Y	: Orange with Yellow tra	acer		
P/W	: Pink with White tracer			
	: Red with Blue tracer			
	: Red with White tracer			
W/B	: White with Black trace	ər		
W/G	: White with Green trac	er		
W/Y	: White with Yellow trac	er		
Y/BI	: Yellow with Blue tracer			
Y/R	: Yellow with Red trace	r		

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

# 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.

#### **A** 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 WARN-INGS 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**

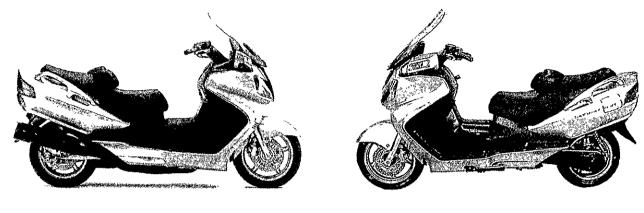
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- \* Proper service and repair procedures are important for the safety of the service mechanic and the safety and reliability of the motorcycle.
- \* When 2 or more persons work together, pay attention to the safety of each other.
- \* When it is necessary 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 wellventilated 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, water, exhaust or brake systems, check all 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 and orientation.
- \* 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 lubricant, bond, or sealant.
- \* When removing the battery, disconnect the negative cable first and then the positive cable.
- \* When reconnecting the battery, connect the positive cable first and then the negative cable, and replace the terminal cover on the positive terminal.
- \* When performing service to electrical parts, if the service procedures not require use of battery power, disconnect the negative cable the battery.
- \* When tightening the cylinder head and case bolts and nuts, tighten the larger sizes first. Always tighten the bolts and nuts diagonally from the inside toward outside and to the specified tightening torque.
- \* Whenever you remove oil seals, gaskets, packing, O-rings, locking washers, self-locking nuts, 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 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 that 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 and other fluids: batteries, and tires.
- \* To protect Earth's natural resources, properly dispose of used motorcycle and parts.

# SUZUKI AN650K3 ('03-MODEL)



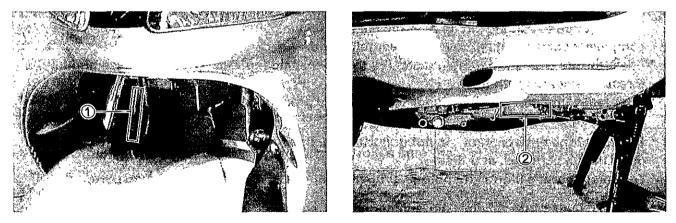
**RIGHT SIDE** 

LEFT SIDE

\* Difference between photographs and actual motorcycles 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 frame down tube. The engine serial number ② is located on the left 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)

Use only unleaded gasoline of at least 87 pump octane ( $\frac{R+M}{2}$ ) or 91 octane or higher rated by the research method.

Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.

#### **FUEL (FOR OTHER COUNTRIES)**

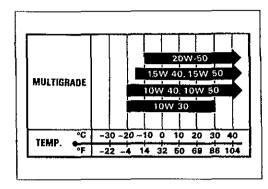
Gasoline used should be graded 91 octane (Research Method) or higher. Unleaded gasoline is recommended.

#### ENGINE OIL AND TRANSMISSION 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 Pertoleum Institute) service classification. The recommended viscosity is SAE 10W-40. If an SAE 10W-40 oil is not available, select and alternative according to the right chart.

# ENGINE OIL AND TRANSMISSION OIL (FOR 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 following chart.



#### **FINAL GEAR OIL**

Use hypoid gear oil that meets the API service classification GL-5 and is rated SAE #90. Use a hypoid gear oil with a rating of SAE #80 if the motorcycle is operated where the ambient temperature is below 0 °C (32 °F).

#### **BRAKE FLUID**

**Specification and classification: DOT 4** 

#### **A** WARNING

Since the brake system of this motorcycle 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.

#### FRONT FORK OIL

Use fork oil #10 or an equivalent fork oil.

#### **ENGINE COOLANT**

Use an anti-freeze/engine coolant compatible with an aluminum radiator, mixed with distilled water only.

#### WATER FOR MIXING

Use distilled water only. Water other than distilled water can corrode and clog the aluminum radiator.

#### ANTI-FREEZE/ENGINE COOLANT

The engine coolant perform as a corrosion and rust inhibitor as well as anti-freeze. Therefore, the engine coolant should be used at all times even though the atmospheric temperature in your area does not go down to freezing point.

Suzuki recommends the use of SUZUKI COOLANT anti-freeze/engine coolant. If this is not available, use an equivalent which is compatible with an aluminum radiator.

#### LIQUID AMOUNT OF WATER/ENGINE COOLANT

Solution capacity (total): 1 300 ml (1.4/1.1 US/Imp qt)

For engine coolant mixture information, refer to cooling system section, page 8-3.

#### CAUTION

Mixing of anti-freeze/engine coolant should be limited to 60%. Mixing beyond it would reduce its efficiency. If the anti-freeze/engine coolant mixing ratio is below 50%, rust inhabiting performance is greatly reduced. Be sure to mix it above 50% even though the atmospheric temperature does not go down to the freezing point.

in 1

# **BREAK-IN PROCEDURES**

During manufacture only the best possible materials are used and all machined parts are finished to a very high standard but 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. The general rules are as follows.

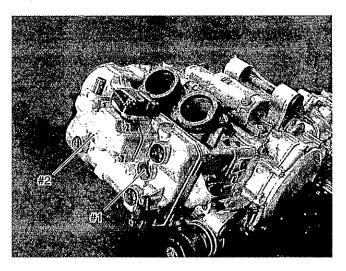
- Keep to these break-in engine speed limits:
- Initial 800 km (500 miles): Below 4 000 r/min
- Up to 1 600 km (1 000 miles): Below 6 000 r/min

#### Over 1 600 km (1 000 miles): Below 8 500 r/min

• Upon reaching an odometer reading of 1 600 km (1 000 miles) you can subject the motorcycle to full throttle operation. However, do not exceed 8 500 r/min at any time.

# **CYLINDER IDENTIFICATION**

The two cylinders of this engine are identified as No.1 and No.2 cylinder, as counted from left to right (as viewed by the rider on the seat).

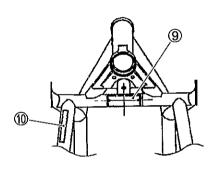


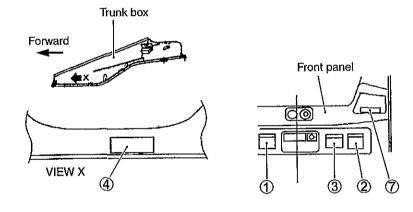
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# **INFORMATION LABELS**

<ol> <li>Warning safety label (For E-02, 19, 24)</li> </ol>
2 Engine starting label (For E-02, 19, 24)
③ Screen warning label (For E-02, 19, 24)
④ Tire pressure label (For E-02, 19, 24)
5 Fuel caution label (For E-02, 24)
Fuel information label (For E-02, 19, 24)
⑦ Front box loading capacity label (For E-02, 19, 24)
8 Trunk box loading capacity label (For E-02, 19, 24)
ID label (For E-02, 19, 24)
1 Noise label (For E-24)

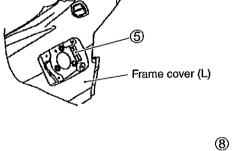
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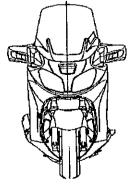


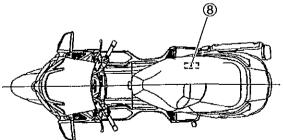




Stick the label behind the fuel lid.







# SPECIFICATIONS DIMENSIONS AND DRY MASS

Overall length	2 260 mm (89.0 in)
Overall width	
Overall height	1 430 mm (56.3 in)
Wheelbase	
Ground clearance	125 mm ( 4.9 in)
Seat height	750 mm (29.5 in)
Dry mass	

# ENGINE

Туре	. Four-stroke, Liquid-cooled, DOHC
Number of cylinders	
Bore	
Stroke	71.3 mm (2.807 in)
Piston displacement	638 cm³ (38.9 cu. in)
Compression ratio	11.2 : 1
Fuel system	Fuel injection system
Air cleaner	Non-woven fabric element
Starter system	Electric starter
Lubrication system	Wet sump

#### **DRIVE TRAIN**

Clutch	. Wet multi-plate automatic, centrifugal type
Gearshift pattern	. Automatic & Manual shift
Automatic transmission ratio	. Variable change (1.800 – 0.465)
Final reduction ratio	. 1.580 (32/31 × 31/32 × 34/31 × 49/34)
Drive system	. Gear drive

# CHASSIS

Front suspension	. Telescopic, coil spring, oil damped
Rear suspension	. Swingarm type, coil spring, oil damped
Steering angle	. 41° (right & left)
Caster	. 26°
Trail	. 102 mm (4.0 in)
Turning radius	. 2.7 m (8.9 ft)
Front brake	. Disc brake, twin
Rear brake	. Disc brake
Front tire size	. 120/70 R15M/C 56H, tubeless
Rear tire size	. 160/60 R14M/C 65H, tubeless
Front fork stroke	. 105 mm (4.1 in)
Rear wheel travel	. 100 mm (3.9 in)

# ELECTRICAL

Ignition type	Electronic ignition (ECM, Transistorized)
Ignition timing	10° B. T. D. C at 1 200 r/min
Spark plug	
Battery	12 V 43.2 kC (12 Ah)/10 HR
Generator	Three-phase A.C. Generator
Main fuse	40 A
CVT fuse	40 A
Fuse	15/15/15/15/10/10/10 A
Headlight	12 V 60/55 W + 55 W (H4 + H7) E-02, 19
	12 V 60/55W × 2 (H4)E-03, 24, 28, 33
Position light	12 V 5 W × 2 E-02, 19
Turn signal light	12 V 21 W
License light	12 V 5 W
Brake light/Taillight	12 V 21/5 W × 2
Speedometer light	12 V 1.4 W × 2
Power mode indicator light	12 V 1.4 W
Drive indicator light	12 V 1.4 W
High beam indicator light	12 V 1.4 W
Turn signal indicator light	12 V 1.4 W
Brake lock indicator light	12 V 1.4 W
Fuel injector indicator light	12 V 1.4 W
Engine coolant temperature indicator light	12 V 1.4 W
Oil pressure indicator light	12 V 1.4 W
Gear position indicator light	12 V 1.4 W × 5

## CAPACITIES

Fuel tank, including reserve1	5.0 L (4.0/3.3 US/Imp gal)
Engine oil, oil change2	600 ml (2.7/2.3 US/Imp qt)
with filter change2	900 ml (3.1/2.6 US/Imp qt)
overhaul3	400 ml (3.6/3.0 US/Imp qt)
Transmission oil, oil change	360 ml (12.2/12.7 US/Imp oz)
overhaul	400 ml (13.5/14.1 US/Imp oz)
Final gear oil, oil change	300 mi (10.1/10.6 US/Imp oz)
overhaul	430 ml (14.5/15.1 US/Imp oz)
Engine coolant, including reserve1	300 ml (1.4/1.1 US/Imp qt)
Front fork oil (each leg)	482 ml (16.3/17.0 US/Imp oz)

These specifications are subject to change without notice.

Thank you very much for your reading. Please click here and go back to the website. Then, you can download the complete manual instantly. No waiting.