

SUZUKI

DR-Z400S

SERVICE MANUAL

FOREWORD

This manual contains an introductory description on the SUZUKI DR-Z400S 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 as a guide for proper inspection and service.

This manual will help you know the motorcycle better so that you can assure your customers of fast and reliable service.

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

▲ WARNING

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

IMPORTANT

All street-legal SUZUKI motorcycles with engine displacement of 50cc or greater are subject to Environmental Protection Agency (EPA) 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 the DR-Z400S in accordance with all EPA regulations. It is strongly recommended that the chapter on Emission Control, Periodic Servicing and Carburetion be thoroughly reviewed before any type of service work is performed.

Further information concerning the EPA emission regulations and U.S. SUZUKI's emission control program can be found in the U.S. SUZUKI EMISSION CONTROL PROGRAM MANUAL /SERVICE BULLETIN.

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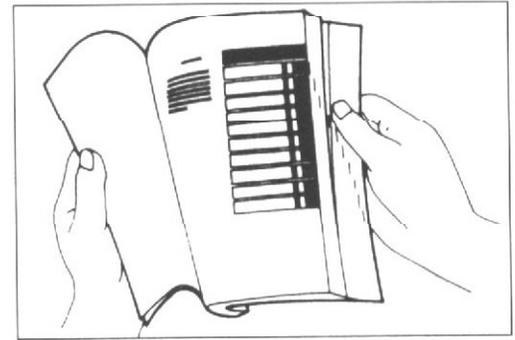
SUZUKI MOTOR CORPORATION

Motorcycle Service Department

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

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



COMPONENT PARTS AND WORK TO BE DONE

Under the name of each system or unit there is an exploded view which provides work instructions and other service information (e.g., tightening torque, lubricating points, and locking agent points).

Example: Front wheel

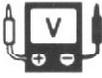
① Front axle
 ② Odometer gearbox
 ③ Bearing (R)
 ④ Front wheel
 ⑤ Spacer
 ⑥ Bearing (L)
 ⑦ Dust seal
 ⑧ Brake disc
 ⑨ Spacer
 ⑩ Washer

(A) Front axle nut
 (B) Brake disc mounting bolt

ITEM	N·m	kgf-m	lb-ft
(A)	42	4.2	30.5
(B)	10	1.0	7.0

SYMBOLS

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

SYMBOL	DEFINITION	SYMBOL	DEFINITION
	Torque control required. Data beside it indicates specified torque.		Apply THREAD LOCK "1342". 99000-32050
	Indicates service data.		Apply or use brake fluid.
	Apply oil. Use engine oil unless otherwise specified.		Measure in voltage range.
	Apply molybdenum oil solution. (mixture of engine oil and SUZUKI MOLY PASTE in a ratio of 1:1)		Measure in resistance range.
	Apply SUZUKI SUPER GREASE "A". 99000-25030 (For USA) 99000-25010 (For the other countries)		Measure in current range.
	Apply SUZUKI SILICONE GREASE. 99000-25100		Measure in diode test range.
	Apply SUZUKI MOLY PASTE. 99000-25140		Measure in continuity test range.
	Apply SUZUKI BOND "1207B". 99104-31140 (For USA) 99000-31140 (For the other countries)		Use special tool.
	Apply SUZUKI BOND "1215". 99000-31110 (Except USA)		Use engine coolant. 99000-99032-11X (Except USA)
	Apply THREAD LOCK SUPER "1303". 99000-32030		Use fork oil. 99000-99001-SS5
	Apply THREAD LOCK SUPER "1322". 99000-32110 (Except USA)		

GENERAL INFORMATION

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WARNING/CAUTION/NOTE

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

▲ WARNING

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

▲ CAUTION

Indicates a potential hazard that could result in motorcycle damage.

NOTE:

Indicates special information to make maintenance easier or instructions clearer.

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

GENERAL PRECAUTIONS

▲ WARNING

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

⚠ CAUTION

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

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

SUZUKI DR-Z400SY (2000-MODEL)



RIGHT SIDE

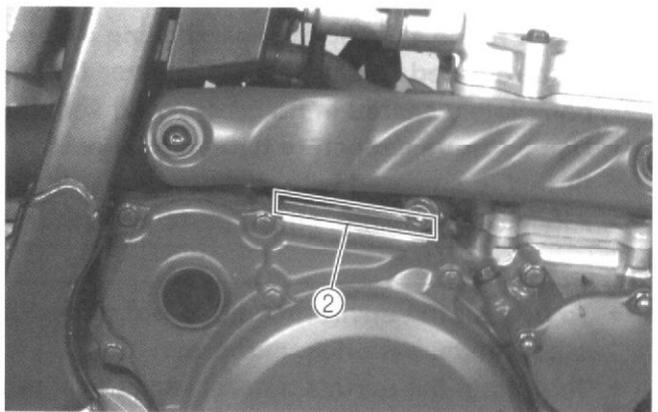
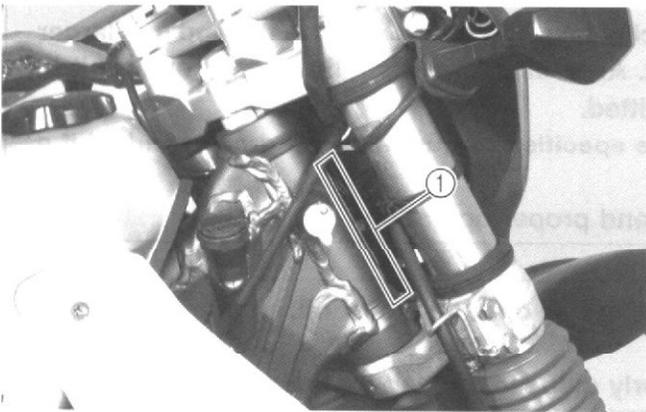


LEFT SIDE

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

SERIAL NUMBER LOCATION

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



FUEL, OIL, AND ENGINE COOLANT RECOMMENDATIONS

FUEL (FOR USA AND CANADA)

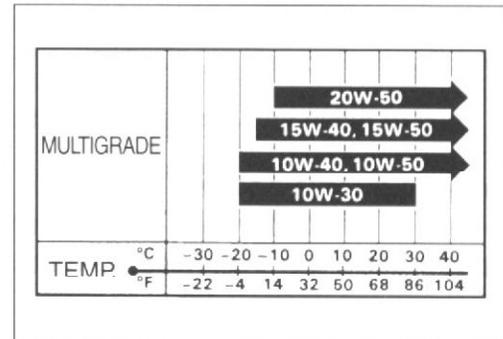
- Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$) method or 91 octane or higher rated by the Research Method.
- SUZUKI recommends that customers use alcohol-free unleaded gasoline whenever possible.
- Use of blended gasoline containing MTBE (Methyl Tertiary Butyl Ether) is permitted.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

FUEL (FOR THE OTHER COUNTRIES)

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

ENGINE OIL

SUZUKI recommends the use of SUZUKI PERFORMANCE 4 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.



BRAKE FLUID

BF Specification and classification: DOT 4

⚠ WARNING

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

FRONT FORK OIL

Use SUZUKI FORK OIL SS-05 or an equivalent fork oil.

ENGINE COOLANT

Since antifreeze also has corrosion- and rust-inhibiting properties, always use engine coolant containing antifreeze, even if the atmospheric temperature does not go below the freezing point.

Use an antifreeze designed for aluminum radiators. SUZUKI recommends the use of SUZUKI COOLANT antifreeze. If this is not available, use an equivalent antifreeze for aluminum radiators.

Mix only distilled water with the antifreeze. Other types of water can corrode and clog the aluminum radiator.

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

For more information, refer to page 5-4 in the Cooling System section.

⚠ CAUTION

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

BREAK-IN PROCEDURES

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

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

Break-in throttle position

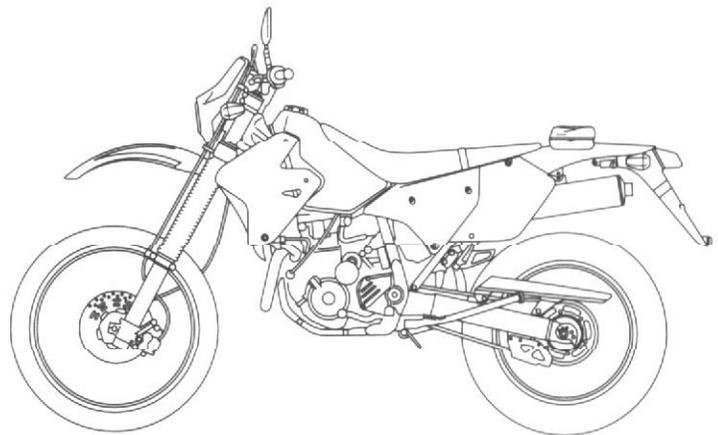
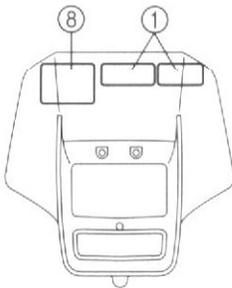
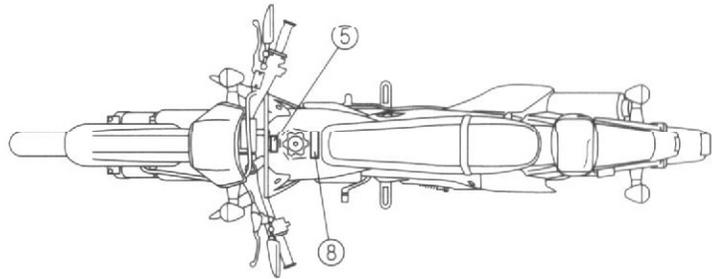
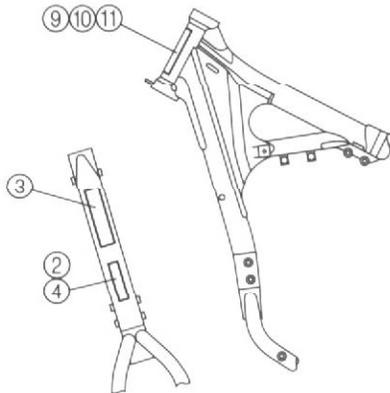
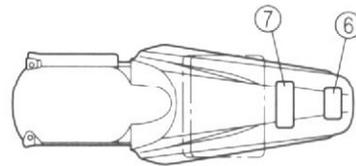
Initial 800 km (500 miles): Less than 1/2 throttle

Up to 1 600 km (1 000 miles): Less than 3/4 throttle

- Upon reaching an odometer reading of 1 600 km (1 000 miles) you can subject the motorcycle to full throttle operation for short periods of time.

INFORMATION LABELS

NO	LABEL or PLATE NAME	APPLIED SPECIFICATION					
		E-02	E-03	E-19	E-28	E-33	E-54
①	Engine starting label	○	○	○	○	○	○
②	Noise label	—	○	—	—	○	—
③	Information label	—	○	—	—	○	—
④	ICES Canada label	—	—	—	○	—	—
⑤	Fuel caution label	○	—	—	—	—	—
⑥	Manual notice label	—	○	—	—	○	—
⑦	Tire air pressure label	○	○	○	○	○	○
⑧	Warning safety label	○	○	○	○	○	○
⑨	ID plate	○	—	○	—	—	○
⑩	Safety plate	—	○	—	—	○	—
⑪	Compliance label	—	—	—	○	—	—



SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length	2 310 mm (90.9 in)
Overall width	875 mm (34.4 in)
Overall height	1 240 mm (48.8 in)
Wheelbase	1 485 mm (58.5 in)
Ground clearance	300 mm (11.8 in)
Seat height	935 mm (36.8 in)
Dry mass	132 kg (291 lbs)

ENGINE

Type	Four-stroke, liquid-cooled, DOHC
Number of cylinders	1
Bore	90.0 mm (3.543 in)
Stroke	62.6 mm (2.465 in)
Piston displacement	398 cm ³ (24.3 cu. in)
Compression ratio	11.3 : 1
Carburetor	MIKUNI BSR36
Air cleaner	Polyurethane foam element
Starter system	Electric
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	5-speed constant mesh
Gearshift pattern	1-down, 4-up
Primary reduction ratio	2.960 (74/25)
Final reduction ratio	2.933 (44/15)
Gear ratios, Low	2.285 (32/14)
2nd	1.733 (26/15)
3rd	1.375 (22/16)
4th	1.090 (24/22)
Top	0.863 (19/22)
Drive chain	RK520KZO, 112 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, spring preload fully adjustable, compression damping force 11-way adjustable
Rear suspension	Link type, coil spring, oil damped, spring preload fully adjustable, compression damping force 26-way adjustable
Front fork stroke	288 mm (11.3 in)
Rear wheel travel	295 mm (11.6 in)
Caster	27° 10'
Trail	107 mm (4.21 in)
Steering angle	45° (right & left)
Turning radius	2.2 m (7.2 ft)
Front brake	Disc brake
Rear brake	Disc brake
Front tire size	80/100-21 51P
Rear tire size	120/90-18 65P

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	7° BTDC at 1 500 r/min
Spark plug	NGK: CR8E DENSO: U24ESR-N
Generator	Three-phase A.C. generator
Fuse	20 A
Battery	12 V 23.4 kC (6.5 Ah)/10 HR
Headlight	12 V 60/55 W
Position light	12 V 4 W For E-02, 19, 54
Brake light/taillight	12 V 21/5 W
Turn signal light	12 V 21 W

CAPACITIES

Fuel tank, including reserve	9.5 L (2.5 US gal, 2.1 Imp gal) For E-33
	10.0 L (2.6 US gal, 2.2 Imp gal) For the other countries
reserve	2.3 L (0.6 US gal, 0.5 Imp gal)
Engine oil, oil change	1 700 ml (1.8 US qt, 1.5 Imp qt)
oil and filter change	1 800 ml (1.9 US qt, 1.6 Imp qt)
engine overhaul	1 900 ml (2.0 US qt, 1.7 Imp qt)
Front fork oil	709 ml (24.0 US oz, 25.0 Imp oz)
Engine coolant	1 250 ml (1.3 US qt, 1.1 Imp qt)

NOTE:

These specifications are subject to change without notice.

COUNTRY AND AREA CODES

The following are codes and their applicable country or area.

CODE	COUNTRY OR AREA
E-02	UK
E-03	USA
E-19	EU
E-28	Canada
E-33	California (USA)
E-54	Israel