SUZUKI

GSX-R1000R

GSX-R1000R FEATURES & SPECIFICATIONS



2025

OVERVIEW

The 2025 GSX-R1000R's versatile engine provides class-leading power smoothly and controllably across a broad rpm range. The compact chassis delivers nimble handling with excellent suspension feel, ready to conquer a racetrack or cruise a country road. Advanced electronic rider aids such as traction control, launch control, and a bi-directional quick shifter enhance the riding experience while the distinctive, aerodynamic GSX-R bodywork slices through the wind.

The Showa® BFF and BFRC-Lite suspension components provide an unmatched combination of reliability and performance. Up front, fed by stainless steel brake lines, radially mounted Brembo® Monobloc brake calipers grasp a pair of 320mm Brembo® T-drive floating brake rotors. The GSX-R1000R continues as the best liter-class supersport with an unmatched combination of reliability, durability, usability, and overall performance with excellent track potential.



GSX-R1000RZ model shown

Pearl Brilliant White/
Metallic Triton Blue



Candy Daring Red /
Glass Sparkle Black



Mechanical Matte Sword Silver

2025

KEY FEATURES

- The 2025 GSX-R1000R is available in a new Candy Daring Red / Glass Black paint scheme with red wheels or a stunning Metallic Matte Sword Silver scheme with bright blue graphics on the fairing and black wheels.
- The aerodynamic bodywork has a compelling appearance and shape that aids performance by improving handling and speed on the racetrack. The reasonable sport riding position comes from a carefully crafted relationship between the clip-ons, footrests, and a seat height of just 32.48 inches (825mm).
- The compact, liquid-cooled, DOHC, 999.8cc, inline-four-cylinder engine has the exclusive Suzuki Racing Variable Valve Timing System (SR-VVT) using a centrifugal actuated mechanism on the intake cam-shaft sprocket to increase high RPM power without losing low- to mid-range torque.
- The Suzuki Clutch Assist System (SCAS) multi-plate, wet clutch functions like a slipper clutch during downshifts while increasing plate pressure during acceleration. The Suzuki Bi-directional Quick Shift System enables smooth, clutchless upshifts and downshifts of the cassette-style, six-speed transmission.
- Light and compact, the twin-spar aluminum frame has adjustable swingarm pivots to help racers tune the chassis. The gold-anodized Showa® BFF fork and rear suspension components deliver extraordinary damping control while the lean-sensitive, ABS** system monitors the Brembo® four-piston, front brake calipers that are fed by stainless steel hoses.
- An Inertial Measurement Unit (IMU) provides six-direction, three-axis, motion, and position information to the ECM so instantaneous electronic adjustments are made to the Traction Control* and the lean-sensitive Motion Track Anti-Lock Brake System (ABS)**.
- The black background LCD multifunction instrument panel was inspired by the GSX-RR MotoGP dash, and the aerodynamic fairing houses a bright, stacked LED headlight assembly and eyebrow position lights above the Suzuki Ram Air Direct intake ducts.

ENGINE

- The compact, liquid-cooled, DOHC, 999.8cc, inline-four-cylinder engine is designed with an elevated level of top-end performance plus strong low- to mid-range power.
- The exclusive Suzuki Racing Variable Valve Timing System (SR-VVT) uses a centrifugal actuated mechanism on the intake camshaft sprocket that increases high engine rpm power without losing low- to mid-range power.
- The Suzuki Racing Finger Follower valve train weighs less than a tappet-style valve train reducing friction and increasing valve response at higher engine speeds.
- Titanium valves with two 31.5mm intake, and two 24mm exhaust valves are used for each cylinder. The lighter valves respond well to the finger follower's arms, permitting a 14,500 rpm redline that helps produce extremely high peak horsepower.
- The crankshaft retains Suzuki's Even Firing Order Engine legacy. Uneven firing order engines used in other motorcycles vibrate more, while the GSX-R1000R makes good, smooth, and reliable power at all engine speeds while emitting a high-performance exhaust note.
- The short-stroke engine has a 76.0mm bore versus a 55.1mm stroke yet is narrower than the prior-generation GSX-R1000 engine, thanks to its effective design.
- Aluminum pistons are 76.0 mm in diameter and are engineered with the use of Finite Element Method (FEM) analysis and are cast for optimal rigidity and weight.
- Suzuki Composite Electrochemical Material (SCEM)–coated cylinders are integrated into the upper crankcase reducing friction, improving heat transfer and durability.
- The high 13.2:1 compression ratio helps produce high horsepower. The cylinder head's shallow combustion chambers minimize heat produced during operation.
- The engine is rotated back and positioned in the frame to create optimal chassis dimensions for precise handling and to balance the motorcycle's weight distribution.
- The EFI system uses Suzuki's Ride-by-Wire Electronic Throttle Bodies, with throttle valves controlled by a servo motor for fast response to rider throttle input while delivering precise and smooth power.
- The automatic Idle Speed Control (ISC) improves cold starting and stabilizes the engine idle regardless of engine temperature.
- Complementing the four primary fuel injectors in the throttle bodies are four Suzuki Top Feed Injectors (S-TFI) that spray fuel from the top of the airbox directly into the intake funnels. This results in higher peak power, more efficient combustion, and a higher level of fueling control.
- To increase top-end power without losing lower rpm performance, the airbox is equipped with stacked air intake funnels for the two outer cylinders. This uncomplicated design allows good air flow at all intake speeds without requiring a complex mechanism that adds weight.
- Dual Suzuki Ram Air Direct (SRAD) intake ducts exponentially increase the amount of volumetric air flow entering the airbox as road speed increases.
- The 4-2-1 exhaust system helps the engine deliver a wide range of performance with an exciting rush up to redline. The black finish titanium muffler, with brushed stainless-steel heat shield, is tucked up high for good ground clearance at high lean angles while creating an exciting, distinctive sound.

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ENGINE CONT.

- The Suzuki Exhaust Tuning (SET) system valve in the mid-pipe helps control back-pressure and flow to the muffler widening power delivery and reducing exhaust sounds without needing a larger silencer.
- SET-Alpha exhaust valves are in the balance tubes between the two outer and two inner head pipes. Actuated by a cable from the main SET-valve, the Alpha valves open at higher engine speeds and close at lower rpm helping the engine create high peak power without losing low- and mid-range horsepower.
- The digital ignition fires iridium-type spark plugs increasing spark strength and improving combustion efficiency. These quality components also last longer than conventional spark plugs.
- The cooling system is designed using advanced analysis design, so the coolant flows through the engine and radiator more efficiently. This compact design uses 400cc less coolant than the prior-generation GSX-R1000, improving cooling efficiency and lowering weight.
- The fairing lowers efficiently guide cooling air to the high-capacity curved radiator. Twin cooling fans deliver good cooling at lower road speeds.
- Additional heat is removed from the engine via the use of an air-cooled, radiator-style oil cooler mounted directly below the main radiator.

DRIVELINE

- The Suzuki Bi-directional Quick Shift System permits clutchless upshifts and downshifts for faster lap times during competition and exceptional rider convenience on the street.
- The GSX-R1000R is equipped with the Suzuki Clutch Assist System (SCAS) multi-plate, wet clutch. SCAS works like a slipper clutch during downshifts while increasing pressure on the plates during acceleration. This smooths engine braking and lightens the clutch lever pull.
- The cassette-style, six-speed transmission lets riders precisely match gear ratios to the riding condition. A cassette-style transmission can be easily removed from the crankcase as an assembly with the engine still in the frame, making racetrack gear changes easier and simplifying service.
- Based on Suzuki's race-proven, close-ratio transmissions, the GSX-R1000R gear box features vertically staggered shafts reducing overall engine length.
- The shift linkage can be easily set up for reverse-pattern, GP-style shifting (even with the quick-shifter in use).
- A programmable shift light on the main panel provides a visual alert to the rider to shift when a certain engine rpm is reached.
- The primary gear ratio is lower compared to the prior-generation GSX-R1000 for stronger acceleration.
- To reduce moving mass, a 525-size drive chain is used with a 45/17 final sprocket ratio that complements the large rear tire.

CHASSIS

- Using lessons learning from Suzuki MotoGP chassis development, the engine angle of the GSX-R1000R was rotated backward six degrees compared with the prior-generation GSX-R1000. This rotation reduces the distance of the fork to the center of the chassis by 20 mm, and increases the swingarm length by 40 mm. This improves chassis stability and the motorcycle's aerodynamics.
- The aluminum twin-spar-style frame is designed using FEM analysis technology to place strength in the proper places; the frame is also ten percent lighter than the prior-generation GSX-R1000. The frame's spars are set 20 mm closer together, improving aerodynamics, looks and rider comfort.
- The aluminum Superbike-braced swingarm has equalized bracing to the main beams providing balanced support and movement to the shock absorber, improving racetrack handling while also conveying a consistent suspension feel to the rider.
- The GSX-R1000R's swingarm pivot features an adjustable location so the chassis can be better tuned for competition use (please use the standard position for street riding).
- Racetrack-developed links connect the single Showa® Balance Free Rear Cushion Light (BFRC-lite) shock to the braced swingarm. The BFRC-lite's innovative design controls damping force outside of the shock body to not only control how the suspension strokes but helps smooth its reaction over bumpy surfaces or when the chassis is pitched during braking. This produces a superb level of response in a racetrack environment and sets a new standard for rider feedback and comfort during street riding.
- The Showa® Balance Free Front Fork (BFF) uses race-level technology to bring excellent damping force responsiveness not seen before in a supersport motorcycle. This suspension's design controls damping force outside of the spring chamber, so the fork precisely maintains consistent damping regardless of its stroking action. With the BFF the rider enjoys an unparalleled level of surface feedback and ride compliance.
- The GSX-R1000R is also fitted with a lightweight, race-ready upper triple clamp in conjunction with the BFF.
- Brembo® Monobloc 4-piston brake calipers are radially mounted to the fork's axle holders. Exclusively on a GSX-R1000R, these front calipers are fed by stainless-steel brake lines.

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CHASSIS CONT.

- The dual front Brembo® T-drive brake rotors feature two methods of attaching the 320mm floating disc to the carrier. There are five conventional floating rotor spools maintaining the rotor's relationship to the caliper, and five T-drive fasteners enabling the rotor to absorb more braking energy than a disc with conventional spools alone.
- The front brakes are complemented by a 240mm rear disc brake with a Nissin® single-piston caliper.
- Like conventional ABS, the Motion Track Brake System provides the appropriate amount of braking force for the available traction, with additional chassis pitch input from the IMU. When the IMU detects rear wheel lift, or the motorcycle is leaned over, the ABS system will adjust the front brake to help settle the chassis and help maintain braking efficiency.
- Unique to Suzuki, the lightweight six-spoke wheels reduce unsprung mass and have been designed to help manage the braking and drive forces that a GSX-R1000R can create.
- Inspired by championship winning GSX-R livery the GSX-R1000RZ's Pearl Brilliant White and Metallic Triton Blue paint scheme features bright blue wheels. The GSX-R1000R's Candy Daring Red / Glass Sparkle Black paint scheme features dard red wheels, while the Metallic Matte Sword Silver version rides on black wheels with bright blue rim graphics.
- The GSX-R1000R comes with track-day-ready Bridgestone® Racing Street RS11 low-mass tires. The tires' tread pattern reduces wear and maximizing sport performance and contact feel.

ADVANCED ELECTRONICS

- A lightning-fast, 32-bit dual processor Engine Control Module (ECM) blends Suzuki's vast street-going EFI knowledge with the intelligence from Suzuki's championship-winning MotoGP racing program. GSX-R1000R riders get sportbike performance without peer while simultaneously receiving polished street manners.
- Using MotoGP knowledge, Suzuki has fitted an Inertial Measurement Unit (IMU) on the GSX-R1000R. The IMU provides six-direction, three-axis, motion, and position information to the ECM so instantaneous adjustments are made electronically to the engine and chassis components that influence performance.
- The LCD multifunction instrument panel is inspired by the GSX-RR MotoGP dash. This panel is laid out so the rider can easily see the tachometer bar, speedometer digits, and other essential operational information. This effective display is critical, as it is the rider's interface to the GSX-R1000R's advanced electronics. The panel on the GSX-R1000R is unique, as it features a black background.
- The ECM precisely opens the Ride-by-Wire electronic throttle bodies to match the rider's throttle grip rotation with the refinement from the IMU-influenced electronics. The result is a strong, seamless engine power delivery from idle to redline.
- The three-mode Suzuki Drive Mode Selector (S-DMS) system lets the rider select the engine's power delivery characteristic to match riding ability and conditions.
- The Suzuki Bi-directional Quick Shift System lets GSX-R1000R racers shift faster than ever. By manipulating ignition timing on upshifts and the electronic throttle bodies on downshifts, clutchless shifting helps deliver faster and more consistent lap times.
- The exclusive ten-mode Motion Track Traction Control System (MT-TCS)*, with IMU influence, increases rider confidence by adjusting the system's amount of intervention to match riding ability and surface conditions.
- Exclusive to Suzuki, the Motion Track Anti-Lock Brake System (ABS)** brings additional performance to anti-lock braking. Like a conventional ABS system, the Motion Track Brake System helps provide the appropriate amount of braking force for the available traction. When the IMU detects the rear wheel lift, the ABS control module adjusts the front brake pressure to reduce the rear wheel lift. If the IMU senses the motorcycle is leaned over when the brakes are used, the ABS unit adjusts the brake pressure to an optimal amount to help maintain braking force and tire grip.
- The Suzuki Launch Control System provides GSX-R1000R riders a competitive advantage when launching their motorcycle at the start of the race. This system modulates engine power so the rider can concentrate on clutch operation.
- The Suzuki Easy Start System simplifies startup for the GSX-R1000R rider as the ECM automatically cranks the engine for 1.5 seconds (or until started) with a momentary press of the starter button. There is no need to pull in the clutch lever if the transmission is in neutral. Once started, the ECM helps control the electronic throttle bodies to maintain a consistent engine idle speed, whether the engine is cold or warm.
- The innovative Suzuki Low RPM Assist System smooths takeoffs and reduces the chance of the rider stalling the motorcycle. If necessary, the ECM slightly raises engine rpm for a smoother start when the clutch is released helping make it easier to ride away from a stop or navigating in traffic at exceptionally low speeds.

ELECTRICAL

- The LCD multifunction instrument panel has a black background with white digits and has an adjustable intensity, a white color backlight for greater nighttime visibility. The LCD main panel is flanked by LED indicators that include the turn signals, high beam, traction control, and shift light, plus coolant temperature and oil pressure alerts.
- The LED headlight is lightweight, bright, and distinctive. This low electric-draw light has a narrow, stacked shape to allow the SRAD air ducts at the nose of the fairing access to the high-pressure air created at higher speeds.
- A pair of distinctive, arched LED position lights accent the top edge of the SRAD air ducts in the fairing nose helping increase visibility and adding to the motorcycle's unique character.
- The LED combination tail and brake light have an exceptionally low electrical draw, and the vertically stacked shape permits the tail section to be narrow for better air flow at the back of the motorcycle. The outer section of the taillight uses surface-type light-emitting diodes for a smooth glow, while the center portion uses bright, conventional LEDs for attention when the brakes are applied.
- The turn signals are lightweight and use incandescent bulbs with amber lenses, so the motorcycle's turn indication is more visible to other traffic.
- Controller Area Network wire harness (CAN Bus) allows for fast and precise communications between all the GSX-R1000R's electronic systems. With a CAN Bus system, riders experience swift and trouble-free electronic system operation while the system's size is reduced and the wiring harness less complex.
- The motorcycle's lightweight battery is a great benefit during closed-course competition or track-day use. This compact battery (YTZ10S, 12V8.6AH) has ample capacity to start the engine and to supply power to the advanced electronics.
- The polyfunctional "Start/Stop" switch combines the engine stop and start functions. The switch is a fine complement to the Suzuki Easy Start System fitted to the GSX-R1000R.

BODY

- The aerodynamic bodywork was created by Suzuki styling designers and engineers using wind tunnel testing to achieve a slippery shape and compelling appearance. Narrower than ever, the GSX-R1000R's shape directly aids performance by improving handling and top speed on the racetrack.
- The dual SRAD intake ducts are positioned close to the center of the fairing nose, where air pressure is highest. The intake ducts are also larger, thanks to the compact LED headlight.
- The GSX-R1000R with the Metallic Matte Sword Silver or Candy Daring Red / Glass Sparkle Black paint schemes have outer fork tubes and shock absorber bodies with gold-anodized finishes like the suspension components on the championship-winning Suzuki Yoshimura SERT endurance GSX-R race bike.
- The GSX-R1000RZ's Pearl Brilliant White/ Metallic Matte Triton Blue paint scheme includes fork outer tubes and a shock absorber body with blue-anodized finishes.
- The reasonable sport riding position is created by a carefully crafted relationship between the clip-ons, footrests, and seat. Compared to the prior-generation GSX-R, the fuel tank is 21mm lower making it easier for the rider to tuck in on a racetrack straightaway.
- The seat height is an appropriate 825mm (32.48 inches) and contributes to the good rider interface that aids the rider in guiding the motorcycle on the road or racetrack.
- The passenger seat can be removed and replaced with an optional color-matched solo tail cowl (available from authorized Suzuki dealers).
- The shifter and rear brake pedal are adjustable in relationship to the footrests, and the hand controls are adjustable in relation to the grips.

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ADDITIONAL

- A variety of Genuine Suzuki Accessories are available, plus a full selection of GSX-R logo apparel.
- 12-month unlimited mileage limited warranty. Longer coverage periods with other benefits available through Suzuki Extended Protection (SEP).
- For more details, please visit www.suzukicycles.com.

** The Traction Control System is not a substitute for the rider's throttle control. It cannot prevent loss of traction due to excessive speed when the rider enters a turn and/or applies the brakes. Traction control cannot prevent the front wheel from losing grip.*

*** Depending on road surface conditions, such as wet, loose, or uneven roads, braking distance for an ABS-equipped vehicle may be longer than for a vehicle not equipped with ABS. ABS cannot prevent wheel skidding caused by braking while cornering. Please drive carefully and do not overly rely on ABS.*

SPECIFICATIONS

ENGINE

Engine:	999.8cc, 4-stroke, liquid-cooled, 4-cylinder, DOHC
Bore x Stroke:	76.0 mm x 55.1 mm (2.992 in. x 2.169 in.)
Compression Ratio:	13.2:1
Fuel System:	Fuel injection with Ride-by-Wire throttle bodies
Starter:	Electric
Lubrication:	Wet sump

DRIVETRAIN

Clutch:	Wet, multi-plate type
Transmission:	6-speed constant mesh
Final Drive:	Chain, DID® 525HV3, 120 links

CHASSIS

Suspension, Front:	Inverted telescopic, coil spring, oil damped
Suspension, Rear:	Link type, single shock, coil spring, oil damped
Brake, Front:	Brembo®, 4-piston, twin disc, ABS-equipped
Brake, Rear:	Nissin®, 1-piston, single disc, ABS-equipped
Tire, Front:	120/70ZR17M/C (58W), tubeless
Tire, Rear:	190/55ZR17M/C (75W), tubeless
Fuel Tank Capacity:	16.0 L (4.2 US gal.)

ELECTRICAL

Ignition:	Electronic ignition (transistorized)
Headlight:	LED
Tail Light:	LED

DIMENSIONS

Overall Length:	2075 mm (81.7 in.)
Overall Width:	705 mm (27.8 in.)
Overall Height:	1145 mm (45.1 in.)
Wheelbase:	1420 mm (55.9 in.)
Ground Clearance:	130 mm (5.11 in.)
Seat Height:	825 mm (32.5 in.)
Curb Weight:	202 kg (445.0 lb.)

WARRANTY

Warranty: 12-month unlimited mileage limited warranty

Longer coverage periods with other benefits are available through Suzuki Extended Protection (SEP).

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SERVICE DATA

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Emission Control Devices

Item	Specification	Standard	Limit
EVAP system purge control solenoid valve power supply voltage (If equipped)		Battery voltage	—
EVAP system purge control solenoid valve resistance (If equipped)	20 °C (68 °F)	30 – 34 Ω	—
PAIR control solenoid valve power supply voltage		Battery voltage	—
PAIR control solenoid valve resistance	20 – 30 °C (68 – 86 °F)	20 – 24 Ω	—

Engine Electrical Devices

Item	Specification	Standard	Limit
AP sensor power supply voltage		4.75 – 5.25 V	—
IAP sensor power supply voltage		4.75 – 5.25 V	—
IAP sensor output voltage	Idle speed at 1 atm.	Approx. 2.7 V	—
IAT sensor power supply voltage		4.5 – 5.5 V	—
IAT sensor resistance	40 °C (104 °F)	1041 – 1231 Ω	—
ECT sensor power supply voltage		4.5 – 5.5 V	—
ECT sensor resistance	20 °C (68 °F)	2320 – 2590 Ω	—
	80 °C (176 °F)	310 – 326 Ω	
TP sensor power supply voltage		4.5 – 5.5 V	—
TP sensor 1 output voltage	Closed	3.635 – 3.785 V	—
	Opened	Approx. 0.7 V	
TP sensor 2 output voltage	Closed	4.235 – 4.385 V	—
	Opened	Approx. 1.3 V	
HO2 sensor output voltage	Idle speed	0.6 V or less	—
	5000 r/min	0.6 V or more	
HO2 sensor heater power supply voltage		Battery voltage	—
HO2 sensor heater resistance	23 °C (73.4 °F)	11.5 – 17.5 Ω	—
CKP sensor peak voltage	When cranking	0.5 V or more	—
CKP sensor resistance		148 – 222 Ω	—
CMP sensor power supply voltage		4.5 – 5.5 V	—
IMU power supply voltage		Battery voltage	—
TO sensor power supply voltage		4.5 – 5.5 V	—
TO sensor output voltage	Normal	0.4 – 1.4 V	—
	Leaning 65°	3.7 – 4.4 V	
TO sensor resistance		19313 – 19507 Ω	—
ECM power supply voltage		Battery voltage	—
Accelerator position sensor power supply voltage		4.5 – 5.5 V	—

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Item	Specification		Standard	Limit
Accelerator position sensor 1 output voltage	Closed		0.54 – 0.58 V	—
	Opened		Approx. 3.51 V	
Accelerator position sensor 2 output voltage	Closed		0.75 – 1.05 V	—
	Opened		Approx. 4.59 V	
ECM resistance			Approx. 120 Ω	—
Combination meter resistance			Approx. 120 Ω	—
Gearshift sensor power supply voltage	If equipped		4.75 – 5.25 V	—
Gearshift sensor output voltage	If equipped	Fully upped	4.48 – 4.65 V	—
		Fully downed	0.35 – 0.52 V	
		Neutral position	2.38 – 2.62 V	

Engine Mechanical

Item	Specification	Standard	Limit
Throttle body I.D. No.	For U.S.A. and Canada	17K0	—
	Except for U.S.A. and Canada	17K1	—
Throttle body bore size		46 mm (1.8 in)	—
Throttle cable play		2.0 – 4.0 mm (0.079 – 0.157 in)	—
Idle speed	When engine warmed	1250 ± 100 r/min	—
Fast idle speed		1500 – 2000 r/min	—
Compression pressure		1200 – 1600 kPa (12.2 – 16.3 kgf/cm², 174 – 232 psi)	1000 kPa (10.2 kgf/cm², 145 psi)
Compression pressure difference		—	200 kPa (2.0 kgf/cm², 29.0 psi)
Cam height	Intake	35.68 – 35.73 mm (1.405 – 1.406 in)	35.38 mm (1.393 in)
	Exhaust	35.68 – 35.73 mm (1.405 – 1.406 in)	35.38 mm (1.393 in)
Camshaft journal oil clearance	Intake	0.032 – 0.066 mm (0.0013 – 0.0025 in)	0.150 mm (0.0059 in)
	Exhaust	0.032 – 0.066 mm (0.0013 – 0.0025 in)	0.150 mm (0.0059 in)
Camshaft journal holder I.D.	Intake	24.012 – 24.025 mm (0.9454 – 0.9458 in)	—
	Exhaust	24.012 – 24.025 mm (0.9454 – 0.9458 in)	
Camshaft journal O.D.	Intake	23.959 – 23.980 mm (0.9433 – 0.9440 in)	—
	Exhaust	23.959 – 23.980 mm (0.9433 – 0.9440 in)	
Camshaft runout	Intake & Exhaust	—	0.10 mm (0.004 in)
Clearance between camshaft sprocket and camshaft sprocket ball guide		0.2 – 0.8 mm (0.008 – 0.031 in)	—
Unevenness of the clearance between camshaft sprocket and camshaft sprocket ball guide at 4 points		—	0.5 mm (0.019 in)
Rocker arm I.D.	Intake	8.000 – 8.015 mm (0.3150 – 0.3155 in)	—
	Exhaust	8.000 – 8.015 mm (0.3150 – 0.3155 in)	

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Item	Specification		Standard	Limit
Rocker arm shaft O.D.	Intake		7.978 – 7.987 mm (0.3141 – 0.3144 in)	—
	Exhaust		7.978 – 7.987 mm (0.3141 – 0.3144 in)	
Valve clearance	When engine cold	Intake	0.07 – 0.15 mm (0.0028 – 0.0059 in)	—
		Exhaust	0.16 – 0.24 mm (0.0063 – 0.0094 in)	
Valve diameter	Intake		31.5 mm (1.24 in)	—
	Exhaust		24 mm (0.94 in)	
Valve stem runout	Intake & Exhaust		—	0.05 mm (0.0019 in)
Valve head radial runout	Intake & Exhaust		—	0.03 mm (0.0011 in)
Valve stem deflection	Intake & Exhaust		—	0.25 mm (0.0098 in)
Valve stem O.D.	Intake		4.475 – 4.490 mm (0.1762 – 0.1767 in)	—
	Exhaust		4.455 – 4.470 mm (0.1754 – 0.1759 in)	—
Valve seat width	Intake		0.9 – 1.1 mm (0.036 – 0.043 in)	—
	Exhaust		0.9 – 1.1 mm (0.036 – 0.043 in)	—
Valve guide I.D.	Intake		4.500 – 4.512 mm (0.1772 – 0.1776 in)	—
	Exhaust		4.500 – 4.512 mm (0.1772 – 0.1776 in)	—
Valve guide to valve stem clearance	Intake		0.010 – 0.037 mm (0.0004 – 0.0014 in)	—
	Exhaust		0.030 – 0.057 mm (0.0012 – 0.0022 in)	—
Valve spring free length	Inner		—	35.9 mm (1.42 in)
	Outer		—	38.8 mm (1.53 in)
Inner valve spring pre-load	When compressed to 30.50 mm (1.201 in)	Intake	50.2 – 57.8 N (5.1 – 5.9 kgf, 11.3 – 13.0 lbs)	—
		Exhaust	50.2 – 57.8 N (5.1 – 5.9 kgf, 11.3 – 13.0 lbs)	—
Outer valve spring pre-load	When compressed to 34.50 mm (1.358 in)	Intake	117.2 – 134.8 N (12.0 – 13.7 kgf, 26.3 – 30.3 lbs)	—
		Exhaust	117.2 – 134.8 N (12.0 – 13.7 kgf, 26.3 – 30.3 lbs)	—
Cylinder head distortion			—	0.20 mm (0.0078 in)
Cylinder distortion			—	0.20 mm (0.0078 in)
Cylinder bore			76.000 – 76.015 mm (2.9922 – 2.9927 in)	No nicks or Scratches
Piston diameter	Measure at 8 mm (0.3 in) from the skirt end.		75.970 – 75.985 mm (2.9910 – 2.9915 in)	75.850 mm (2.9862 in)
Piston to cylinder clearance			0.025 – 0.035 mm (0.0010 – 0.0013 in)	0.120 mm (0.0047 in)
Piston ring to groove clearance	1st		—	0.180 mm (0.0070 in)
	2nd		—	0.150 mm (0.0059 in)

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SERVICE DATA

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Item	Specification	Standard	Limit
Piston ring groove width	1st	0.83 – 0.85 mm (0.0327 – 0.0334 in) 1.30 – 1.32 mm (0.0512 – 0.0519 in)	—
	2nd	0.81 – 0.83 mm (0.0319 – 0.0326 in)	—
	Oil	1.51 – 1.53 mm (0.0595 – 0.0602 in)	—
Piston ring thickness	1st	0.76 – 0.81 mm (0.0300 – 0.0318 in) 1.08 – 1.10 mm (0.0426 – 0.0433 in)	—
	2nd	0.77 – 0.79 mm (0.0304 – 0.0311 in)	—
Piston ring free end gap	1st	Approx. 7.5 mm (0.3 in)	6.0 mm (0.24 in)
	2nd	Approx. 9 mm (0.4 in)	7.2 mm (0.29 in)
Piston ring end gap	1st	0.06 – 0.18 mm (0.0024 – 0.0070 in)	0.50 mm (0.019 in)
	2nd	0.06 – 0.18 mm (0.0024 – 0.0070 in)	0.50 mm (0.019 in)
Piston pin bore I.D.		16.002 – 16.008 mm (0.6300 – 0.6302 in)	16.030 mm (0.6311 in)
Piston pin O.D.		15.993 – 16.000 mm (0.6297 – 0.6299 in)	15.980 mm (0.6292 in)
Conrod small end I.D.		16.018 – 16.026 mm (0.6307 –0.6309 in)	16.040 mm (0.6314 in)
Conrod big end side clearance		0.10 – 0.20 mm (0.0040 – 0.0078 in)	0.3 mm (0.011 in)
Conrod big end width		19.95 – 20.00 mm (0.7855 – 0.7874 in)	—
Conrod big end I.D.		38.000 – 38.016 mm (1.4961 – 1.4966 in)	—
Conrod big end oil clearance		0.040 – 0.064 mm (0.0016 – 0.0025 in)	0.080 mm (0.0031 in)
Crank pin width		20.10 – 20.15 mm (0.7914 – 0.7933 in)	—
Crank pin O.D.		34.976 – 35.000 mm (1.3770 – 1.3779 in)	—
Crank pin bearing thickness		1.476 – 1.492 mm (0.0582 – 0.0587 in)	—
Crankshaft journal O.D.		34.976 – 34.994 mm (1.3770 – 1.3777 in)	—
Crankshaft journal oil clearance		0.016 – 0.034 mm (0.0007 – 0.0013 in)	0.080 mm (0.0031 in)
Crankcase journal I.D.		38.000 – 38.018 mm (1.4961 – 1.4967 in)	—
Crankcase journal bearing thickness		1.492 – 1.507 mm (0.0588 – 0.0593 in)	—
Crankshaft thrust bearing thickness	Right side	2.42 – 2.44 mm (0.0953 – 0.0960 in)	—
	Left side	2.36 – 2.50 mm (0.0930 – 0.0984 in)	—
Crankshaft thrust clearance		0.060 – 0.110 mm (0.0024 – 0.0043 in)	—
Crankshaft runout		—	0.05 mm (0.0019 in)

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Engine Lubrication System

Item	Specification	Standard	Limit
Oil pressure	At 60 °C (140 °F), 3000 r/min	100 – 500 kPa (1.0 – 5.1 kgf/cm², 14.5 – 72.5 psi)	—
Necessary amount of engine oil	Oil change	3100 ml (3.28 US qt, 2.73 Imp qt)	—
	Oil and filter change	3300 ml (3.49 US qt, 2.90 Imp qt)	
	Engine overhaul	4100 ml (4.33 US qt, 3.61 Imp qt)	

Cooling System

Item	Specification	Standard	Limit
Engine coolant	Engine side	Approx. 2200 ml (2.32 US qt, 1.94 Imp qt)	—
	Reservoir tank side	Approx. 250 ml (0.26 US qt, 0.22 Imp qt)	
Radiator cap valve opening pressure		93.3 – 122.7 kPa (1.0 – 1.3 kgf/cm², 13.5 – 17.8 psi)	—
Cooling fan relay power supply voltage		Battery voltage	—
Cooling fan operating temperature	OFF → ON	Approx. 105 °C (221 °F)	—
	ON → OFF	Approx. 100 °C (212 °F)	
Thermostat valve opening temperature		Approx. 82 °C (179.6 °F)	—
Thermostat valve lift	95 °C (203 °F)	8 mm (0.3 in) or more	—

Fuel System

Item	Specification	Standard	Limit
Fuel injector power supply voltage		Battery voltage	
Fuel injector resistance	20 °C (68 °F)	11.5 – 12.5 Ω	—
FP relay power supply voltage		Battery voltage	—
FP discharge amount	Per 10 seconds	194 ml (6.56 US oz, 6.83 Imp oz) or more	—
Fuel pressure		338 – 348 kPa (3.45 – 3.54 kgf/cm², 49.1 – 50.4 psi)	—

Ignition System

Item	Specification		Standard	Limit
Firing order			1-2-4-3	—
Spark plug	Type		NGK: CR9EIA-9 / DENSO: IU27D	—
	Gap		0.8 – 0.9 mm (0.032 – 0.035 in)	
Spark performance	At 1 atm		8 mm (0.3 in) or more	—
Ignition coil primary peak voltage			80 V or more	—
Ignition coil resistance	Primary	10 – 30 °C (50 – 86 °F)	1.1 – 1.9 Ω	—
	Secondary	10 – 30 °C (50 – 86 °F)	6400 – 9600 Ω	
Immobilizer antenna power supply voltage (If equipped)			Battery voltage	—

Starting System

Item	Specification	Standard	Limit
Starter motor brush length		7.0 mm (0.28 in)	3.5 mm (0.14 in)
Starter relay resistance		3 – 7 Ω	—
Side-stand switch voltage	ON (Side-stand retracted)	0.4 – 0.6 V	—
	OFF (Side-stand on the ground)	1.4 V or more	

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Charging System

Item	Specification		Standard	Limit
Battery leakage current			3 mA or less	—
Regulated voltage	Charging output	At 5000 r/min	14.0 – 15.5 V	—
Generator coil resistance			0.1 – 0.2 Ω	—
Generator no-load voltage	When engine cold	At 5000 r/min	85 V (AC) or more	—
Recharging time	Standard charging		0.9 A for 5 to 10 hours	—
	Fast charging		4.5 A for 1 hour	
Generator Max. output	At 5000 r/min		Approx. 420 W	—
Battery	Type designation		YTZ10S	—
	Capacity		12 V 31.0 kC (8.6 Ah)/10 HR	

Exhaust System

Item	Specification	Standard	Limit
Front EXCV lever clearance		1.5 – 4.0 mm (0.059 – 0.157 in)	—
EXCVA position sensor power supply voltage		4.5 – 5.5 V	—
EXCVA position sensor output voltage	Closed	0.45 – 1.40 V	—
	Opened	3.60 – 4.55 V	
EXCVA position sensor resistance	At adjustment position	Approx. 4000 Ω	—

Front Suspension

Item	Specification		Standard	Limit
Front fork inner tube O.D.			43 mm (1.7 in)	—
Front fork oil level	With spring, outer tube fully compressed	L7-L8	240 mm (9.45 in)	—
		L9-	167 mm (6.57 in)	
Front fork spring free length			255.8 mm (10.07 in)	250 mm (9.85 in)
Front fork oil capacity	Each leg		215 ml (7.27 US oz, 7.57 Imp oz)	—
Front fork spring adjuster			7-3/4 turns clockwise from softest position	—
Front fork damping force adjuster	Rebound side		2-1/2 turns counterclockwise from stiffest position	—
	Compression side		3 turns counterclockwise from stiffest position	

Rear Suspension

Item	Specification		Standard	Limit
Rear shock absorber spring pre-set length	L7-L8		169.8 mm (6.685 in)	—
	L9-		171.9 mm (6.768 in)	—
Rear shock absorber damping force adjuster	Rebound side		3 turns counterclockwise from stiffest position	—
	Compression side	L7-L8	2 turns counterclockwise from stiffest position	—
		L9-	2-3/4 turns counterclockwise from stiffest position	
Swingarm pivot shaft runout			—	0.3 mm (0.011 in)

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Wheels and Tires

Item	Specification		Standard	Limit
Wheel rim runout	Front	Axial & Radial	—	2.0 mm (0.08 in)
	Rear	Axial & Radial	—	2.0 mm (0.08 in)
Wheel axle runout	Front & Rear		—	0.25 mm (0.010 in)
Tire size	Front		120/70ZR17M/C (58W)	—
	Rear		190/55ZR17M/C (75W)	
Tire type	Front	L7-L8	BRIDGESTONE/RS10F E	—
		L9-	BRIDGESTONE/RS11F E	
	Rear	L7-L8	BRIDGESTONE/RS10R E	
		L9-	BRIDGESTONE/RS11R E	
Tire tread depth	Recommend depth	Front	—	1.6 mm (0.062 in)
		Rear	—	2.0 mm (0.078 in)
Cold inflation tire pressure	Solo riding	Front	250 kPa (2.50 kgf/cm^2, 36 psi)	—
		Rear	290 kPa (2.90 kgf/cm^2, 42 psi)	
	Dual riding	Front	250 kPa (2.50 kgf/cm^2, 36 psi)	—
		Rear	290 kPa (2.90 kgf/cm^2, 42 psi)	
Wheel rim size	Front		17 M/C x MT 3.50	—
	Rear		17 M/C x MT 6.00	

Drive Chain / Drive Train / Drive Shaft

Item	Specification	Standard	Limit
Drive chain	Type	DID525HV3	—
	Links	120 links	—
Drive chain 20-pitch length		—	319.4 mm (12.57 in)
Drive chain slack	On side-stand	20 – 30 mm (0.79 – 1.18 in)	—

Brake Control System and Diagnosis

Item	Specification	Standard	Limit
Rear brake pedal height		65 – 75 mm (2.6 – 2.9 in)	—
Master cylinder bore / piston diameter	Front	Approx. 19.05 mm (0.750 in)	—
	Rear	Approx. 14.0 mm (0.551 in)	

Front Brakes

Item	Specification	Standard	Limit
Front brake disc thickness		5.0 mm (0.20 in)	4.5 mm (0.18 in)
Front brake disc runout		—	0.30 mm (0.012 in)
Front brake caliper cylinder bore / piston diameter		Approx. 32 mm (1.3 in)	—

Rear Brakes

Item	Specification	Standard	Limit
Rear brake disc thickness		5.0 mm (0.20 in)	4.5 mm (0.18 in)
Rear brake disc runout		—	0.30 mm (0.012 in)
Rear brake caliper cylinder bore / piston diameter		Approx. 30.23 mm (1.19 in)	—

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ABS

Item	Specification	Standard	Limit
Wheel speed sensor – sensor rotor clearance	Front	0.33 – 1.55 mm (0.0130 – 0.0610 in)	—
	Rear	0.98 – 1.70 mm (0.0386 – 0.0669 in)	—
IMU power supply voltage		Battery voltage	

Manual Transmission

Item	Specification	Standard	Limit
Gearshift fork to groove clearance	No.1	0.1 – 0.3 mm (0.004 – 0.011 in)	0.5 mm (0.019 in)
	No.3	0.1 – 0.3 mm (0.004 – 0.011 in)	0.5 mm (0.019 in)
Gearshift fork groove width	No.1	5.0 – 5.1 mm (0.197 – 0.200 in)	—
	No.3	5.0 – 5.1 mm (0.197 – 0.200 in)	
Gearshift fork thickness	No.1	4.8 – 4.9 mm (0.189 – 0.192 in)	—
	No.3	4.8 – 4.9 mm (0.189 – 0.192 in)	
Gearshift lever height		65 – 75 mm (2.6 – 2.9 in)	—
GP sensor power supply voltage		4.5 – 5.5 V	—
GP sensor voltage	1st	0.525 – 0.725 V	—
	Neutral	1.076 – 1.256 V	—
	2nd	1.607 – 1.807 V	—
	3rd	2.274 – 2.474 V	—
	4th	2.941 – 3.141 V	—
	5th	3.608 – 3.808 V	—
	6th	4.275 – 4.475 V	—

Clutch

Item	Specification	Standard	Limit
Clutch lever play		10 – 15 mm (0.4 – 0.6 in)	—
Clutch release screw		1 turn counterclockwise	—
Drive plate thickness		3.22 – 3.38 mm (0.127 – 0.133 in)	2.92 mm (0.115 in)
Drive plate claw width		13.7 – 13.8 mm (0.5394 – 0.5433 in)	13.2 mm (0.520 in)
Driven plate distortion		—	0.10 mm (0.0039 in)
Clutch spring free length		55.8 mm (2.20 in)	53.1 mm (2.09 in)

Steering / Handlebar

Item	Specification	Standard	Limit
Steering tension initial force		2 – 5 N (0.21 – 0.50 kgf, 0.45 – 1.12 lbf)	—
Steering damper solenoid valve resistance	20 °C (68 °F)	12.5 Ω	—

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Wiring Systems

Item	Specification		Standard	Limit
Fuse size	Headlight	HI	7.5 A	—
		LO	7.5 A	—
	Ignition		10 A	—
	Signal		10 A	—
	Fuel		10 A	—
	Fan (RH)		15 A	—
	Fan (LH)		15 A	—
	Park		10 A	—
	Main		30 A	—
	ABS		30 A	—

Lighting Systems

Item	Specification	Standard	Limit
Headlight	HI	LED	—
	LO	LED	—
Position light (If equipped)		LED	—
Brake light/Taillight		LED	—
Turn signal light		12 V 21 W x 4	—
License plate light		LED	—

Combination Meter / Fuel Meter / Horn

Item	Specification	Standard	Limit
Wheel speed sensor power supply voltage	Front	Battery voltage	—
	Rear	Battery voltage	—
Instrument panel light		LED	—
Turn signal indicator light		LED	—
High beam indicator light		LED	—
Neutral indicator light		LED	—
Engine coolant temperature indicator light/Oil pressure indicator light		LED	—
MIL		LED	—
Traction control indicator light		LED	—
ABS indicator light (If equipped)		LED	—
Immobilizer indicator light (If equipped)		LED	—
Freeze indicator light		LED	—
Engine rpm indicator light		LED	—
Ambient air temperature sensor resistance	–20 °C (–4 °F)	13779 – 19083 Ω	—
	–10 °C (14 °F)	8100 – 10609 Ω	—
	0 °C (32 °F)	4928 – 6125 Ω	—
	10 °C (50 °F)	3089 – 3656 Ω	—
	20 °C (68 °F)	1992 – 2251 Ω	—
	25 °C (77 °F)	1615 – 1785 Ω	—
	30 °C (86 °F)	1290 – 1456 Ω	—
	40 °C (104 °F)	838 – 986 Ω	—

Special Tools and Equipment

Fuel / Oil / Fluid / Coolant Recommendation

BENJ17K10308001

Fuel

NOTICE

Do not use leaded gasoline. If it is used, the engine and the emission control system will be damaged.

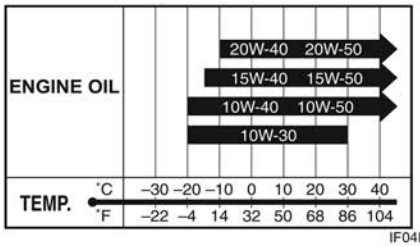
Use unleaded gasoline with an octane rating of 90 AKI or higher.
Unleaded gasoline containing up to 10% ethanol by volume may be used.

Engine Oil

Use Suzuki genuine engine oil or equivalent. If Suzuki genuine engine oil is not available, select a proper engine oil according to the following guideline.

	Engine oil
API service classification	SG, SH, SJ, SL, SM or SN
JASO T903 standard	MA
Viscosity	SAE 10W-40

If SAE 10W-40 engine oils are not available, select oils of an appropriate viscosity grade according to the following chart.



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Suzuki does not recommend the use of engine oils which have an "ENERGY CONSERVING" or "RESOURCE CONSERVING" indication in the API service symbol for any of its motorcycles / ATVs. They can affect the engine life and the clutch performance.



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Suzuki recommends the use of ECSTAR or SUZUKI PERFORMANCE 4 MOTOR OIL.

Brake Fluid

Specification and classification: DOT 4

▲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 reuse brake fluid left over from a previous servicing, which has been stored for a long period.

Engine Coolant

Suzuki recommends the use of SUZUKI LONG LIFE COOLANT or SUZUKI SUPER LONG LIFE COOLANT.

Coolant 99000–99032–12X (SUZUKI LONG LIFE COOLANT (GREEN))
Coolant 99000–99032–20X (SUZUKI SUPER LONG LIFE COOLANT (BLUE))

If SUZUKI COOLANT is not available, use an anti-freeze/engine coolant compatible with an aluminum radiator, mixed with distilled water only.

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For SUZUKI LONG LIFE COOLANT

NOTICE

- **Use a high quality ethylene glycol base anti-freeze, mixed with distilled water. Do not mix an alcohol base anti-freeze and different brands of anti-freeze.**
- **Do not put in more than 60% anti-freeze or less than 50%. (Refer to Fig. 1 and 2.)**

The 50:50 mixture of distilled water and ethylene glycol anti-freeze will provide the optimum corrosion protection and excellent heat protection, and will protect the cooling system from freezing at temperatures above –31 °C (–24 °F).
If the vehicle is to be exposed to temperatures below –31 °C (–24 °F), this mixing ratio should be increased up to 55% or 60% according to the figure.

Anti-freeze Proportioning Chart

Anti-freeze density	Freezing point
50%	–31 °C (–24 °F)
55%	–40 °C (–40 °F)
60%	–55 °C (–67 °F)

Fig.1: Engine coolant density-freezing point curve

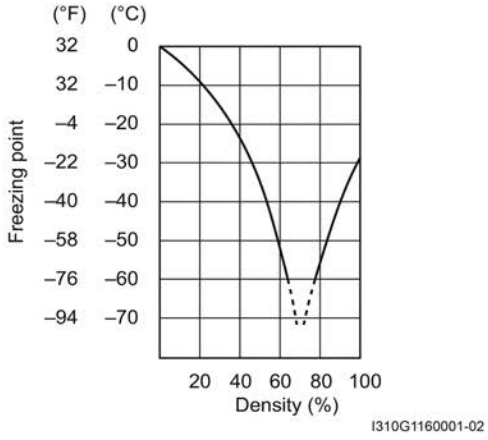
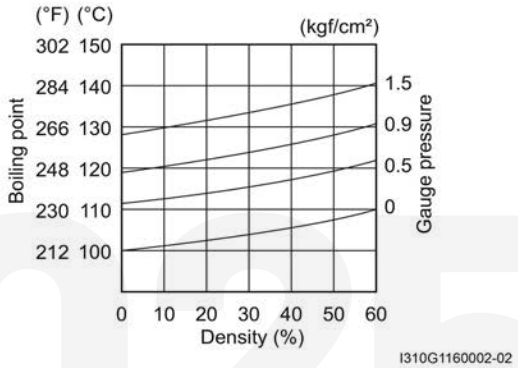


Fig.2: Engine coolant density-boiling point curve



For SUZUKI SUPER LONG LIFE COOLANT

NOTICE

- **Ethanol or methanol base coolant or water alone should not be used in cooling system at any time as damage to cooling system could occur.**
- **Do not mix the distilled water, SUZUKI LONG LIFE COOLANT (coolant color: Green) or equivalent.**

SUZUKI SUPER LONG LIFE COOLANT will provide the optimum corrosion protection and excellent heat protection, and will protect the cooling system from freezing at temperatures above –36 °C (–33 °F).

Anti-freeze concentration table

Anti-freeze density	Freezing point
50%	–36 °C (–33 °F)

Water for mixing
Use distilled water only. Water other than distilled water can corrode and clog the aluminum radiator.
For engine coolant mixture information, refer to “Engine Coolant” (Page 0C-16).

NOTICE

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.

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.

Front Fork Oil
Use SUZUKI FORK OIL SS-47.

Fork oil 99000–99001–47S (SUZUKI FORK OIL SS-47)

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