

Features & Specifications

2017 GSX-R1000R



GSX-R1000RAZL7

YVB: Glass Sparkle Black

Key Features

- All new 999.8cc liquid-cooled DOHC inline-four cylinder engine produces exceptionally high top-end power without sacrificing low to mid-range power thanks to a Variable Valve Train (VVT) system, Ride-by-Wire Throttle Bodies and more.
- Advanced electronics such as an Inertia Measurement Unit (IMU), S-DMS adjustable power output, and traction control, plus other performance features, increase racetrack and street performance.
- New design, twin-spar type aluminum frame is 10% lighter and more compact, with optimized rigidity for nimble handling and a high level of grip when cornering.
- Advanced suspension uses KYB Balance Free Fork and Balance Free Rear Cushion to combine with new Motion Track ABS-equipped BREMBO T-drive 320mm dual front brake rotors and Monobloc 4-piston calipers for extraordinary handling and stopping performance.
- Aerodynamic bodywork is sleek and stylish while housing a new, bright LED headlight and Suzuki Ram Air Direct (SRAD) ducts that feed a high volume of intake air for astonishing top speed muscle.

Overview

It has been three decades, with more than a million editions sold, since the GSX-R line was born. And a decade and a half has elapsed since the first GSX-R1000 transformed the open sportbike class forever. Now, the 2017 GSX-R1000R is redefining what it means to be The King of Sportbikes.

This motorcycle's chassis forms the lightest, the most compact, the most aerodynamic and the best-handling GSX-R1000 ever. Cradled in the new aluminum frame is an all-new engine that uses an exclusive Variable Valve Train and Ride-by-Wire throttle bodies for a wide spread of power while delivering smooth and precise throttle response

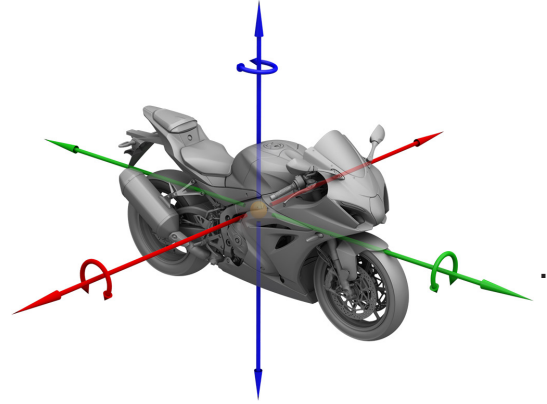
Using an Inertial Measuring Unit (IMU) the GSX-R1000R's advanced electronics package includes selectable performance modes so the motorcycle enhances and fine tunes rider inputs. The six-axis IMU lets the GSX-R1000R recognize its position on the street or race track to help the rider achieve an extraordinary level of riding performance.

Up front, new style BREMBO T-drive brake rotors grasped by Monobloc calipers connected to the exclusive Suzuki Motion Track Anti-lock Brake system provides strong, controlled braking. The precise and smooth SHOWA Balance Free suspension keeps the sticky Bridgestone RS10 tires in touch with the road. All of this forward-looking motorcycle technology is covered in all-new, wind tunnel-developed bodywork that's uniquely GSX-R.

The King of Sportbikes is back, bow to the King.

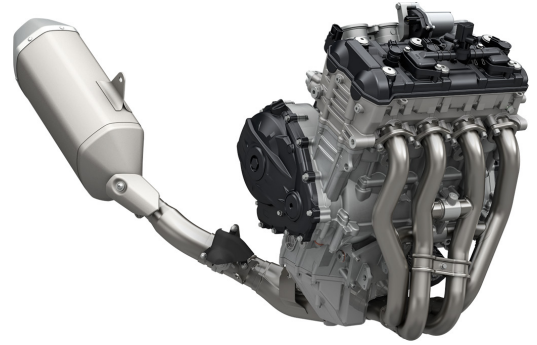
Advanced Electronics Features

- New 32-bit Dual Processor Engine Control Module (ECM) blends Suzuki's vast street-going EFI knowledge with the intelligence from Suzuki's race-winning MotoGP program. GSX-R1000R riders will get sportbike performance without peer while simultaneously receiving polished street manners.
- Using MotoGP knowledge, Suzuki has fitted an Inertial Measurement Unit (IMU) on the new GSX-R1000R. The IMU provides six direction, three axis motion and position information to the ECM so instantaneous adjustments can be made electronically to the engine and chassis components that influence performance.
- The new LCD Multi-function Instrument Panel was 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.
- New Ride-by-Wire electronic throttle bodies are precisely opened by the ECM to match the throttle grip rotation of the rider's hand and the refinement from the IMU-influenced electronics. The result is a strong, seamless engine power delivery from idle to redline.
- A new version of the three mode, Suzuki Drive Mode Selector (S-DMS) system lets the rider select the power output levels of the engine to match riding ability and conditions.
- The new and exclusive ten-mode, Motion Track Traction Control System (MT-TCS), with IMU influence, increases rider confidence by allowing adjustments to amount of intervention to match riding ability and surface conditions.
- Exclusive to Suzuki, the new Motion Track Anti-lock Brake System brings additional control to anti-lock braking (ABS). Like a conventional ABS system, the Motion Track Brake System provides the appropriate amount of braking force for the available traction. When the IMU detects the rear wheel lifting up from extreme braking forces, the ABS control module will adjust 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 will adjust the brake pressure to an optimal amount to help maintain good braking force and tire grip.
- The Suzuki Easy Start System simplifies start up for the GSX-R1000R rider as the ECM automatically cranks the engine for 1.5 seconds (or until it starts) 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 will 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 take-offs and reduces the chance of the rider stalling the motorcycle. If necessary, the ECM raises engine RPM slightly for a smoother start when the clutch is released so it's easier to ride away from a stop or navigate at very low speeds in traffic.
- The new Suzuki Launch Control System provides GSX-R1000R riders a competitive advantage when launching their motorcycle at the start of the race. This system will modulate power so the rider can concentrate on clutch operation.
- The new Suzuki Bi-directional Quick-shift System lets GSX-R1000R racers shift faster than ever before. By ignition timing manipulation on upshifts and electronic throttle body manipulation on downshifts; clutch-less shifting helps deliver faster and more consistent lap times.



Engine Features

- The all-new, four-stroke, liquid-cooled, DOHC, 999.8cc inline-four cylinder engine is designed with a high level of top end performance plus strong low to mid-range power.
- 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 power at all engine speeds, runs smoother and reliably while emitting a screamer exhaust note.
- The short stroke engine has a 76.0 mm bore versus a 55.1mm stroke, yet is narrower than the prior generation GSX-R1000 thanks to effective design.
- The fresh-design engine has been rotated back and positioned in the frame to create optimal chassis dimensions for precise handling and to balance the motorcycle's weight.
- The new and exclusive Suzuki Racing Variable Valve Timing System (SR-VVT) uses a centrifugal actuated mechanism on the intake camshaft sprocket to increase high engine RPM power without losing low-to mid-range power.
- The new design Suzuki Racing Finger Follower valve train weights less than a tappet-style valve train for reduced friction and increased valve response at higher engine speeds.
- Titanium valves, 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 and permit a 14,500 RPM redline that helps produce very high peak horsepower.
- Aluminum pistons, 76.0 mm in diameter, were engineered with use of FEM (Finite Element Method) analysis, and are cast for optimal rigidity and weight.
- Suzuki Composite Electrochemical Material (SCEM) coated cylinders are integrated into the upper crankcase to reduce friction and improve heat transfer and durability.
- The high 13.2:1 compression ratio helps produce high horsepower. The cylinder head's shallow combustion chamber minimize heat produced during operation.
- The EFI system uses Suzuki's new Ride-by-Wire Electronic Throttle Bodies where the throttle valves are controlled by a servo motor for fast response to rider throttle grip input while delivering precise and smooth power delivery.
- 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 air box 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 air box is equipped with Staked Air Intake Funnels for the #1 and #4 cylinders. This simple design allows good air flow at all intake speeds without requiring a mechanism that adds weight or complexity.
- New design Suzuki Ram Air Direct (SRAD) intake ducts are used to exponentially increase the volumetric flow of air amount coming in the air box as road speed increases.
- The digital ignition fires iridium type spark plugs that increase spark strength and combustion efficiency. These quality components also last longer than conventional spark plugs.
- The 4-2-1 exhaust system with titanium muffler is designed helps the engine deliver a wide range of performance with an exciting rush up to redline.
- The Suzuki Exhaust Tuning (SET) system valve in the mid-pipe helps control back-pressure and flow to the muffler to widen power delivery and reduce exhaust sounds without needing a larger silencer.



Engine Features (continued)

- New design SET-Alpha exhaust valves are in the balance tubes between the #1 and #4, and the #2 and #3 head pipes. Actuated by a cable from the main SET-valve, the Alpha valves open at higher engine speeds and close at lower RPM to help the engine create high peak power without losing low and mid-range horsepower.
- The titanium muffler has a pleasing appearance while creating an exciting, distinctive sound.
- The cooling system was designed using advanced analysis design so the coolant flows through the engine and radiator more efficiently. This design uses 400cc less coolant than the prior GSX-R1000, but the new system has better cooling efficiency while being more compact and lighter.
- The fairing lowers efficiently guide cooling air to the high-capacity curved radiator. Twin cooling fans ensure 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.

GSX-R1000RAL7

YSF: Metallic Triton Blue



Transmission Features

- The GSX-R1000R's new cassette-style, six-speed transmission uses ratios carefully selected for optimal acceleration and top speed. Like the Suzuki GSX-RR MotoGP bike, this transmission can be removed as a complete assembly from the side of the engine and features vertically staggered shafts to reduce overall engine length.
- The primary gear ratio is lower compared to the prior GSX-R1000 for stronger acceleration.
- A programmable shift light is on the main panel to provide a visual alert to the rider to shift when a certain engine RPM is reached.
- The Bi-directional Quick-shift system lets riders, using their motorcycle in competition, shift faster than ever before. The system's clutch less shifting delivers the rider faster and more consistent lap times.
- The shift linkage can be easily set-up for reverse pattern, GP-style shifting (even when using the quick-shift system).
- A new version of the Suzuki Clutch Assist System (SCAS) multi-plate, wet clutch is used. 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.
- To reduce weight, a new 525-size drive chain is used with a 45/17 final sprocket ratio that complement the larger, rear tire dimensions.

Chassis Features

- Using lessons learning from Suzuki MotoGP chassis development, the engine angle of the GSX-R1000R was rotated backwards 6-degrees. This had the joint effect of reducing the distance of the fork to the center of the chassis by 20mm and increase the swingarm length by 40mm. This increases chassis stability and improves aerodynamics.
- The new, aluminum twin-spar style frame was designed using FEM analysis technology to place strength in the proper places, the new frame is also 10% lighter than the prior generation GSX-R1000. The spars of the frame are set 20mm closer to help improve aerodynamics, looks and comfort.

Chassis Features (continued)

- All-new Aluminum Superbike-braced Swingarm has equalized bracing to the main beams to provide balanced support and movement to the shock absorber to improve racetrack handling while conveying a consistent suspension feel to the rider.
- Racetrack-developed links connect the single SHOWA Balance Free Rear Cushion lite (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 reaction over bumpy surface or when the chassis is pitched during braking. The result is a new level of response in a race track environment, and new standards of rider feedback and comfort during street riding.
- The SHOWA Balance Free Fork (BFF) uses race-level technology to bring a new standard of damping force responsiveness to 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 fork.
- BREMBO Radial Mount Brake Calipers provide the rider with strong braking performance combined with superb feel.
- The new BREMBO T-drive Brake Rotors feature two methods of attaching the 320mm floating disc to the carrier. There are five conventional floating rotor spools that maintain the rotor's relationship to the caliper, and there are five new-design T-drive fasteners that enable the rotor to absorb more braking energy than a disc with conventional spools alone. As a result of the larger diameter discs, and the energy they can absorb, the new GSX-R1000R has more braking force available to the rider than ever before.
- The front brakes are complemented by a 240mm rear disc brake with a NISSIN single-piston caliper to help make sure the rider can have controlled stops.
- Like conventional ABS, the Motion Track Anti-lock 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 the rear wheel lifting up from extreme braking forces, or the motorcycle is leaned over, the ABS system will adjust the front brake to help settle the chassis and maintain braking.
- Unique to Suzuki, new lightweight six-spoke wheels reduce unsprung mass and have been designed to handle the braking and drive forces that a GSX-R1000R can create.
- The wheel rims have pin stripes punctuated by "R" logos that highlight the bike's identity.
- The track-day ready Bridgestone RS10 low mass tires, with a new higher 55% profile in the back, are premium high-grip radials that achieve excellent handling and stability.
- NEW Aerodynamic Bodywork was created by Suzuki styling designers and engineers using numerous wind tunnel tests to achieve a slippery shape and compelling appearance. Narrower than ever before, the GSX-R1000R's shape directly aids performance by improved handling and top speed on the racetrack.
- The new SRAD intake ducts are positioned closer 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 reasonable sport riding position is created by a carefully crafted relationship between the clip-on's, footrests and seat. The top of the fuel tank is lowered 21mm to make it easier for the rider to tuck in on a racetrack straightaway.
- The reasonable seat height contributes to the good rider interface that aids in guiding the motorcycle on the road or race track.



Chassis Features (continued)

- The passenger seat can be removed and exchanged with an optional, color-matched solo tail cowl.
- The shifter and rear brake pedal are adjustable in relationship to the footrests, and the hand controls are adjustable in relation to the grips.
- The front brake lever has a slot machined in the end to prevent wind pressure from applying the front brake. Special GSX-R1000R logos are applied to the tail section of the motorcycle denoting its unique capabilities and status.
- The blue GSX-R1000R features a paint and graphics scheme that looks as if it was directly lifted from Suzuki's race-winning MotoGP bike.
- The black GSX-R1000R model features tri-color blue Suzuki Racing Heritage stripes on the fairing, sparkling blue wheels, and blue-anodized outer tubes on the SHOWA BFF fork.

Electrical Features

- Controller Area Network wire harness (CAN Bus) allows for fast and precise communications between all of the GSX-R1000R's Electronic Systems. With a CAN Bus system, riders will experience swift and trouble-free electronic system operation while the size and complexity of the wiring is simplified.
- The new LCD Multi-function Instrument Panel has a black background with white digits and has an adjustable intensity, white-color backlight for great nighttime visibility. The LCD main panel is flanked by LED indicators that include the turn signals, high beam, traction control, shift light, plus coolant temperature and oil pressure alerts.
- The new LED headlight is lightweight, bright and distinctive. This low-electric draw light has a narrow, stacked shape to allow the SRAD ducts at the nose of the fair access to the high pressure air created at higher speeds.
- LED Combination Tail & Brake Light has a very 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.
- A pair of distinctive, arched LED Position Lights accent the top edge of the SRAD ducts in the fairing nose to increase visibility and add to the motorcycle's unique character.
- The Turn Signals are lightweight and use incandescent bulbs with amber lenses so the motorcycle's turn indication is highly visible to other traffic.
- New poly-function 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.
- A new lightweight battery is a great benefit during closed course competition or track-day use. This compact battery has ample capacity to start the engine and supply power to the advanced electronics.

Additional Features

- Stylized Suzuki "S" 3-D emblems on the fuel tank and the fork upper bracket denotes the quality, sophistication and performance legacy of the brand.
- Optional single seat cowl can replace the passenger seat for an even more aggressive look or for use on solo rides, or track days.
- A variety of Genuine Suzuki Accessories for GSX-R owners are available including a large selection of Suzuki logo apparel.
- 12-month limited warranty
Coverage can be increased via Suzuki Extended Protection
- 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. Neither can it 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 GSX-R1000RA/RAZL7

E-03: USA, E-33: California

Dimensions and curb mass

| Item | Specification | Remark |
|------------------|--------------------|--------|
| Overall length | 2075 mm (81.69 in) | — |
| Overall width | 705 mm (27.76 in) | — |
| Overall height | 1145 mm (45.08 in) | — |
| Wheelbase | 1420 mm (55.91 in) | — |
| Ground clearance | 130 mm (5.12 in) | — |
| Seat height | 825 mm (32.5 in) | — |
| Curb mass | 203 kg (447 lbs) | — |

Engine

| Item | Specification | Remark |
|---------------------|------------------------------------|--------|
| Type | Four-stroke, liquid-cooled, DOHC | — |
| Number of cylinders | 4 | — |
| Bore | 76.0 mm (2.992 in) | — |
| Stroke | 55.1 mm (2.169 in) | — |
| Displacement | 1000 cm ³ (61.0 cu. in) | — |
| Compression ratio | 13.2 : 1 | — |
| Fuel system | Fuel injection | — |
| Air cleaner | Paper element | — |
| Starter system | Electric | — |
| Lubrication system | Wet sump | — |
| Idle speed | 1250 ± 100 r/min | — |

Drive train

| Item | Specification | Remark | |
|-------------------------|----------------------------------|---------------|---|
| Clutch | Mechanical, wet multi-plate type | — | |
| Transmission | 6-speed constant mesh | — | |
| Gearshift pattern | 1-down, 5-up | — | |
| Primary reduction ratio | 1.652 (76/46) | — | |
| Gear ratios | Low | 2.562 (41/16) | — |
| | 2nd | 2.052 (39/19) | — |
| | 3rd | 1.714 (36/21) | — |
| | 4th | 1.500 (36/24) | — |
| | 5th | 1.360 (34/25) | — |
| | Top | 1.269 (33/26) | — |
| Final reduction ratio | 2.647 (45/17) | — | |
| Drive chain | DID525HV3, 120 links | — | |

Specifications GSX-R1000RA/RAZL7

E-03: USA, E-33: California

Chassis

| Item | Specification | Remark |
|-------------------|--|--------|
| Front suspension | Inverted telescopic, coil spring, oil damped | — |
| Rear suspension | Swingarm, coil spring, oil damped | — |
| Front fork stroke | 120 mm (4.7 in) | — |
| Rear wheel travel | 135 mm (5.31 in) | — |
| Steering angle | 27° (right and left) | — |
| Caster | 23° 20' | — |
| Trail | 95 mm (3.7 in) | — |
| Turning radius | 3.5 m (11.5 ft) | — |
| Front brake | Double disc | — |
| Rear brake | Single disc | — |
| Front tire size | 120/70ZR17M/C (58W), tubeless | — |
| Rear tire size | 190/55ZR17M/C (75W), tubeless | — |

Electrical

| Item | Specification | Remark |
|---|--------------------------------------|--------|
| Ignition type | Electronic ignition (Transistorized) | — |
| Spark plug | NGK CR9EIA-9 or DENSO IU27D | — |
| Battery | 12 V 31.0 kC (8.6 Ah)/10 HR | — |
| Generator | Three-phase A.C. generator | — |
| Main fuse | 30 A | — |
| Fuse | 7.5/7.5/10/10/10/10/15/15 A | — |
| ABS fuse | 30 A | — |
| Headlight | LED | — |
| Position light | LED | — |
| Brake light/Tail light | LED | — |
| Turn signal light | 12 V 21 W x 4 | — |
| License plate light | LED | — |
| Instrument panel light | LED | — |
| Neutral indicator light | LED | — |
| High beam indicator light | LED | — |
| Turn signal indicator light | LED | — |
| Engine coolant temperature indicator light/Oil pressure indicator light | LED | — |
| MIL | LED | — |
| Traction control indicator light | LED | — |
| ABS indicator light | LED | — |
| Freeze indicator light | LED | — |
| Engine rpm indicator light | LED | — |

Capacities

| Item | Specification | Remark |
|----------------|----------------------------------|-----------------------------------|
| Fuel tank | 16.0 L (4.2 US gal, 3.5 Imp gal) | — |
| Engine oil | Oil change | 3100 ml (3.28 US qt, 2.73 Imp qt) |
| | With filter change | 3300 ml (3.49 US qt, 2.90 Imp qt) |
| Engine coolant | 2.45 L (2.59 US qt, 2.16 Imp qt) | — |

Service Data GSX-R1000RA/RAZL7

E-03: USA, E-33: California

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 | 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 | — |
| 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 | — |

| Item | Specification | Standard | Limit |
|---------------------------------------|------------------|---------------|-------|
| Gearshift sensor power supply voltage | | 4.75 – 5.25 V | — |
| Gearshift sensor output voltage | Full up | 4.48 – 4.65 V | — |
| | Full down | 0.35 – 0.52 V | |
| | Neutral position | 2.38 – 2.62 V | |

Engine Mechanical

| Item | Specification | Standard | Limit |
|--|--------------------|--|--|
| Throttle body I.D. No. | | 17K0 | — |
| 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/cm ² , 174 – 232 psi) | 1000 kPa (10.2 kgf/cm ² , 145 psi) |
| Compression pressure difference | | — | 200 kPa (2.0 kgf/cm ² , 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) | |
| 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) | |

| Item | Specification | | Standard | Limit |
|-------------------------------------|--|---------|---|--------------------------|
| 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) |

| 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) | — |

| Item | Specification | Standard | Limit |
|-------------------|---------------|----------|------------------------|
| Crankshaft runout | | — | 0.05 mm (0.0019 in) |

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/cm ² , 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/cm ² , 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/cm ² , 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) | — |
| | Secondary | 10 – 30 °C (50 – 86 °F) | |

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 | |

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 – 2.0 mm (0.059 – 0.078 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 | 240 mm (9.45 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 | | 169.8 mm (6.685 in) | — |
| Rear shock absorber damping force adjuster | Rebound side | 3 turns counterclockwise from stiffest position | — |
| | Compression side | 2 turns counterclockwise from stiffest position | — |
| Swingarm pivot shaft runout | | — | 0.3 mm (0.011 in) |

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 | BRIDGESTONE/RS10F E | — | |
| | Rear | BRIDGESTONE/RS10R 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) | — |

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 | — |

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 | | 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 | — | |

Tightening Torque List

Emission Control Devices

| Fastening part | Tightening torque | | |
|--|-------------------|-------|--------|
| | N·m | kgf·m | lbf·ft |
| PAIR reed valve cover bolt | 10 | 1.0 | 7.5 |
| Crankcase breather (PCV) cover bolt | 10 | 1.0 | 7.5 |
| Canister bracket bolt | 10 | 1.0 | 7.5 |
| EVAP system purge control solenoid valve nut | 6.7 | 0.68 | 4.95 |

Engine Electrical Devices

| Fastening part | Tightening torque | | |
|--|-------------------|-------|--------|
| | N·m | kgf·m | lbf·ft |
| Intake pipe clamp screw | 1.5 | 0.15 | 1.10 |
| IAT sensor screw | 1.3 | 0.13 | 0.95 |
| ECT sensor | 18 | 1.8 | 13.5 |
| HO2 sensor | 25 | 2.5 | 18.5 |
| CMP sensor bolt | 10 | 1.0 | 7.5 |
| Accelerator position sensor No. 2 bracket bolt | 10 | 1.0 | 7.5 |
| Accelerator position sensor No. 1 bracket bolt | 10 | 1.0 | 7.5 |

Engine Mechanical

| Fastening part | Tightening torque | | |
|--|--|-------|--------|
| | N·m | kgf·m | lbf·ft |
| Air cleaner cap screw | 1.8 | 0.18 | 1.35 |
| Secondary fuel delivery pipe mounting bolt | 10 | 1.0 | 7.5 |
| Funnel bolt | 4.3 | 0.44 | 3.20 |
| Air cleaner bolt | 10 | 1.0 | 7.5 |
| Intake pipe screw | 8.4 | 0.86 | 6.20 |
| Cylinder head cover bolt | 14 | 1.4 | 10.5 |
| Intake camshaft sprocket bolt | 60 | 6.1 | 44.5 |
| Exhaust camshaft sprocket bolt | 16 → 25 N·m (1.6 → 2.5 kgf·m, 12.0 → 18.5 lbf·ft) | | |
| Camshaft journal holder bolt | 10 | 1.0 | 7.5 |
| Cam chain tension adjuster bolt | 10 | 1.0 | 7.5 |
| Cylinder head plug | 10 | 1.0 | 7.5 |
| Crankshaft hole plug | 11 | 1.1 | 8.5 |
| Engine mounting thrust adjuster | 23 | 2.3 | 17.0 |
| Engine mounting thrust adjuster lock-nut | 45 | 4.6 | 33.5 |
| Engine mounting nut | 75 | 7.6 | 55.5 |
| Engine mounting bolt (Front) | 75 | 7.6 | 55.5 |
| Radiator lower bracket bolt | 10 | 1.0 | 7.5 |
| Hose guide bracket bolt | 10 | 1.0 | 7.5 |
| Cylinder head bolt (L95) | 25 → 31 N·m (2.5 → 3.2 kgf·m, 18.5 → 23.0 lbf·ft) → turn clockwise 63° | | |
| Cylinder head bolt (L65) | 10 | 1.0 | 7.5 |
| Oil gallery bolt | 10 | 1.0 | 7.5 |
| Cylinder head plug | 23 | 2.3 | 17.0 |
| Bypass hose union | 12 | 1.2 | 9.0 |
| Cam chain tensioner bolt | 23 | 2.3 | 17.0 |
| Cam chain guide No. 1 bolt | 23 | 2.3 | 17.0 |
| Conrod cap bolt | 27 N·m (2.8 kgf·m, 20.0 lbf·ft) → turn clockwise 90° | | |
| Crankcase lower bolt (M9) | 18 N·m (1.8 kgf·m, 13.5 lbf·ft) → turn clockwise 50° | | |
| Crankcase upper bolt (M8) | 15 → 26 N·m (1.5 → 2.7 kgf·m, 11.0 → 19.5 lbf·ft) | | |
| Crankcase lower bolt (M8) | 15 → 26 N·m (1.5 → 2.7 kgf·m, 11.0 → 19.5 lbf·ft) | | |
| Crankcase upper bolt (M6) | 11 | 1.1 | 8.5 |
| Crankcase lower bolt (M6) | 11 | 1.1 | 8.5 |
| Cylinder water inlet connector bolt | 10 | 1.0 | 7.5 |

| Fastening part | Tightening torque | | |
|------------------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Water jacket plug | 9.5 | 0.97 | 7.00 |
| Oil gallery upper plug (M10) | 18 | 1.8 | 13.5 |
| Oil gallery plug (M16) | 35 | 3.6 | 26.0 |
| Oil gallery plug (M6) | 10 | 1.0 | 7.5 |
| Oil gallery plug (M12) | 15 | 1.5 | 11.0 |
| Oil gallery plug | 7.0 | 0.71 | 5.20 |

Engine Lubrication System

| Fastening part | Tightening torque | | |
|--|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Oil gallery plug (M16) | 35 | 3.6 | 26.0 |
| Oil drain plug | 23 | 2.3 | 17.0 |
| Oil filter | 20 | 2.0 | 15.0 |
| Oil strainer bolt | 10 | 1.0 | 7.5 |
| Oil pan bolt | 10 | 1.0 | 7.5 |
| Oil hose plate bolt | 10 | 1.0 | 7.5 |
| Oil cooler guard bolt | 5.5 | 0.56 | 4.05 |
| Oil cooler mounting bolt | 5.5 | 0.56 | 4.05 |
| Oil hose bolt | 10 | 1.0 | 7.5 |
| Oil pressure switch | 13 | 1.3 | 9.5 |
| Oil pressure switch lead wire connecting screw | 1.5 | 0.15 | 1.10 |
| Piston cooling jet bolt | 10 | 1.0 | 7.5 |
| Oil pump driven sprocket bolt | 15 | 1.5 | 11.0 |
| Oil pump bolt | 10 | 1.0 | 7.5 |

Engine Cooling System

| Fastening part | Tightening torque | | |
|------------------------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Cooling fan assembly mounting bolt | 4.9 | 0.50 | 4.00 |
| Radiator mounting upper bolt | 10 | 1.0 | 7.5 |
| Radiator mounting lower bolt | 5.5 | 0.56 | 4.05 |
| Water hose clamp screw | 1.5 | 0.15 | 1.10 |
| Reservoir tank mounting bolt | 5.5 | 0.56 | 4.05 |
| Thermostat connector cover bolt | 10 | 1.0 | 7.5 |
| Water pump bolt | 10 | 1.0 | 7.5 |
| Impeller securing bolt | 8.0 | 0.82 | 5.90 |
| Water pump case screw | 5.5 | 0.56 | 4.05 |

Fuel System

| Fastening part | Tightening torque | | |
|--|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Fuel tank cap bolt | 3.0 | 0.31 | 2.25 |
| Fuel tank rear nut | 10 | 1.0 | 7.5 |
| Fuel tank front screw | 5.5 | 0.56 | 4.05 |
| Fuel pump mounting bolt | 10 | 1.0 | 7.5 |
| Fuel delivery pipe mounting screw | 3.5 | 0.36 | 2.60 |
| Secondary fuel injector bracket mounting screw | 3.5 | 0.36 | 2.60 |
| Secondary fuel delivery pipe mounting bolt | 10 | 1.0 | 7.5 |

Ignition System

| Fastening part | Tightening torque | | |
|----------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Spark plug | 11 | 1.1 | 8.5 |



Starting System

| Fastening part | Tightening torque | | |
|------------------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Starter motor bolt | 10 | 1.0 | 7.5 |
| Starter motor terminal screw | 4.0 | 0.41 | 2.95 |
| Starter clutch bolt | 54 | 5.5 | 40.0 |

Charging System

| Fastening part | Tightening torque | | |
|--------------------------------|--|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Generator stator bolt | 13 – 14 N·m (1.3 – 1.4 kgf-m, 9.5 – 10.5 lbf-ft) | | |
| Generator lead wire clamp bolt | 6.5 | 0.66 | 4.80 |
| Generator rotor bolt | 145 | 14.8 | 107.0 |
| Generator cover bolt | 10 | 1.0 | 7.5 |

Exhaust System

| Fastening part | Tightening torque | | |
|-------------------------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| EXCVA pulley bolt | 5.0 | 0.51 | 3.70 |
| EXCV cable bracket mounting nut | 10 | 1.0 | 7.5 |
| EXCV cable lock-nut | 4.5 | 0.46 | 3.35 |
| EXCVA mounting bolt | 11 | 1.1 | 8.5 |
| EXCV cable No. 3 lever mounting nut | 10 | 1.0 | 7.5 |
| EXCV cover nut | 10 | 1.0 | 7.5 |
| EXCV cable lock-nut | 9.0 | 0.92 | 6.65 |
| EXCV cable No. 3 lock-nut | 4.5 | 0.46 | 3.35 |
| Rear EXCV shaft | 10 | 1.0 | 7.5 |
| Exhaust pipe bolt | 23 | 2.3 | 17.0 |
| Exhaust support bolt | 23 | 2.3 | 17.0 |
| Muffler rear cover bolt | 5.5 | 0.56 | 4.05 |
| Muffler support bolt | 30 | 3.1 | 22.5 |
| Muffler connector bolt | 18 | 1.8 | 13.5 |
| Muffler front cover bolt | 5.5 | 0.56 | 4.05 |

Front Suspension (GSX-R1000R)

| Fastening part | Tightening torque | | |
|-------------------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Front fork cap | 35 | 3.6 | 26.0 |
| Front fork lower clamp bolt | 23 | 2.3 | 17.0 |
| Front fork upper clamp bolt | 23 | 2.3 | 17.0 |
| Handlebar clamp bolt | 23 | 2.3 | 17.0 |
| Front fender mounting bolt | 8.4 | 0.86 | 6.20 |
| Front fork inner rod lock-nut | 28 | 2.9 | 21.0 |

Rear Suspension

| Fastening part | Tightening torque | | |
|--|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Rear shock absorber mounting nut | 50 | 5.1 | 37.0 |
| Cushion lever mounting nut | 80 | 8.2 | 59.0 |
| Cushion rod mounting nut | 80 | 8.2 | 59.0 |
| Rear shock absorber lower mounting nut | 50 | 5.1 | 37.0 |
| Swingarm pivot shaft | 15 | 1.5 | 11.0 |
| Swingarm pivot nut | 100 | 10.2 | 74.0 |
| Swingarm pivot lock-nut | 90 | 9.2 | 66.5 |

Wheels and Tires

| Fastening part | Tightening torque | | |
|-----------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Front axle nut | 100 | 10.2 | 74.0 |
| Front axle pinch bolt | 23 | 2.3 | 17.0 |

Drive Chain / Drive Train / Drive Shaft

| Fastening part | Tightening torque | | |
|----------------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Rear axle nut | 100 | 10.2 | 74.0 |
| Chain adjuster lock-nut | 22 | 2.2 | 16.5 |
| Engine sprocket nut | 145 | 14.8 | 107.0 |
| Engine sprocket cover bolt | 10 | 1.0 | 7.5 |
| Gearshift link arm bolt | 12 | 1.2 | 9.0 |
| Rear sprocket nut | 60 | 6.1 | 44.5 |

Brake Control System and Diagnosis

| Fastening part | Tightening torque | | |
|---|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Brake light switch screw | 1.2 | 0.12 | 0.90 |
| Rear brake master cylinder rod lock-nut | 18 | 1.8 | 13.5 |
| Front brake caliper air bleeder valve | 7.5 | 0.76 | 5.55 |
| Front brake master cylinder air bleeder valve | 6.0 | 0.61 | 4.45 |
| Rear brake caliper air bleeder valve | 6.0 | 0.61 | 4.45 |
| Front brake master cylinder holder bolt | 10 | 1.0 | 7.5 |
| Brake hose union bolt | 23 | 2.3 | 17.0 |
| Brake lever pivot bolt | 1.0 | 0.10 | 0.75 |
| Brake lever pivot bolt lock-nut | 6.0 | 0.61 | 4.45 |
| Rear brake master cylinder mounting bolt | 13 | 1.3 | 9.5 |
| Footrest holder bolt | 39 | 4.0 | 29.0 |
| Front footrest bracket bolt | 23 | 2.3 | 17.0 |
| Rear brake master cylinder bolt | 10 | 1.0 | 7.5 |

Front Brakes

| Fastening part | Tightening torque | | |
|-----------------------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Front brake caliper mounting bolt | 39 | 4.0 | 29.0 |
| Brake hose union bolt | 23 | 2.3 | 17.0 |
| Brake disc bolt | 18 | 1.8 | 13.5 |

Rear Brakes

| Fastening part | Tightening torque | | |
|--------------------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Rear brake pad mounting pin | 17 | 1.7 | 12.5 |
| Rear brake pad pin plug | 2.5 | 0.25 | 1.85 |
| Rear brake caliper sliding pin | 27 | 2.8 | 20.0 |
| Rear brake hose union bolt | 23 | 2.3 | 17.0 |
| Rear brake caliper sliding pin | 12 | 1.2 | 9.0 |
| Brake disc bolt | 35 | 3.6 | 26.0 |

ABS

| Fastening part | Tightening torque | | |
|-------------------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Brake hose union bolt | 23 | 2.3 | 17.0 |
| IMU holder bracket bolt | 6.0 | 0.61 | 4.50 |
| IMU holder bolt | 6.0 | 0.61 | 4.50 |
| IMU bolt | 8.0 | 0.82 | 5.90 |
| Wheel speed sensor rotor bolt | 6.3 | 0.64 | 4.65 |

Manual Transmission

| Fastening part | Tightening torque | | |
|---|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Gearshift fork shaft retainer screw | 10 | 1.0 | 7.5 |
| Transmission cover oil gallery plug | 12 | 1.2 | 9.0 |
| Transmission cover bolt | 15 | 1.5 | 11.0 |
| Transmission cover bolt | 26 | 2.7 | 19.5 |
| Left driveshaft bearing retainer screw | 8.4 | 0.86 | 6.20 |
| Right driveshaft bearing retainer screw | 8.4 | 0.86 | 6.20 |
| Gearshift cam bearing retainer screw | 10 | 1.0 | 7.5 |
| Countershaft bearing retainer screw | 12 | 1.2 | 9.0 |
| GP sensor bolt | 6.0 | 0.61 | 4.45 |
| Gearshift lever shaft | 40 | 4.1 | 29.5 |
| Gearshift link rod lock-nut | 10 | 1.0 | 7.5 |
| Gearshift link arm bolt | 12 | 1.2 | 9.0 |
| Gearshift cam stopper bolt | 10 | 1.0 | 7.5 |
| Gearshift cam plate bolt | 13 | 1.3 | 9.5 |
| Gearshift shaft end screw | 8.4 | 0.86 | 6.20 |

Clutch

| Fastening part | Tightening torque | | |
|---|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Clutch release adjuster lock-nut | 5.5 | 0.56 | 4.05 |
| Clutch cable lock-nut | 4.5 | 0.46 | 3.35 |
| Clutch release adjuster cap | 11 | 1.1 | 8.5 |
| Clutch lever pivot nut | 6.5 | 0.66 | 4.80 |
| Clutch switch screw | 0.6 | 0.06 | 0.45 |
| Clutch lever holder bolt | 10 | 1.0 | 7.5 |
| Clutch release holder bolt | 10 | 1.0 | 7.5 |
| Engine sprocket cover bolt | 10 | 1.0 | 7.5 |
| Gearshift link arm bolt | 12 | 1.2 | 9.0 |
| Clutch release arm bolt | 8.8 | 0.90 | 6.50 |
| Clutch push rod oil seal retainer screw | 8.4 | 0.86 | 6.20 |
| Clutch sleeve hub nut | 150 | 15.3 | 111.0 |
| Clutch spring set bolt | 10 | 1.0 | 7.5 |
| Clutch cover bolt | 10 | 1.0 | 7.5 |

Steering / Handlebar

| Fastening part | Tightening torque | | |
|-------------------------------|--|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Clutch lever holder bolt | 10 | 1.0 | 7.5 |
| Front fork upper clamp bolt | 23 | 2.3 | 17.0 |
| Handlebar clamp bolt | 23 | 2.3 | 17.0 |
| Steering stem head nut | 90 | 9.2 | 66.5 |
| Handlebar balancer screw | 23 | 2.3 | 17.0 |
| Steering damper mounting bolt | 23 | 2.3 | 17.0 |
| Steering damper rod end nut | 23 | 2.3 | 17.0 |
| Steering stem lock-nut | 80 | 8.2 | 59.0 |
| Steering stem adjust-nut | 20 N·m (2.0 kgf-m, 15.0 lbf-ft) → turn counterclockwise 0 – 1/4 | | |

Lighting Systems

| Fastening part | Tightening torque | | |
|--------------------------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Rear combination light screw | 2.0 | 0.20 | 1.50 |
| License plate light nut | 3.0 | 0.31 | 2.25 |
| Rear reflex reflector nut | 1.8 | 0.18 | 1.35 |
| Front turn signal light mounting nut | 5.5 | 0.56 | 4.05 |
| Rear turn signal light mounting nut | 5.5 | 0.56 | 4.05 |

Combination Meter / Fuel Meter / Horn

| Fastening part | Tightening torque | | |
|-------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Speedometer screw | 2.0 | 0.20 | 1.50 |
| Horn bolt | 6.0 | 0.61 | 4.45 |

Exterior Parts

| Fastening part | Tightening torque | | |
|-----------------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Rear view mirror bolt | 10 | 1.0 | 7.5 |
| Fuel tank front cover screw | 5.5 | 0.56 | 4.05 |

Special Tools and Equipment

Fuel / Oil / Fluid / Coolant Recommendation

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.

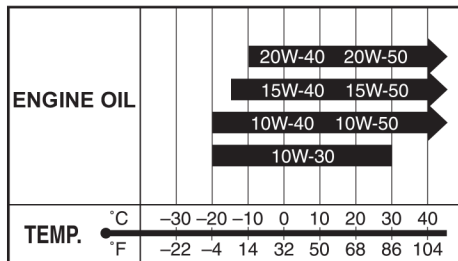
Unleaded gasoline containing up to 10% ethanol by volume may be used.

Engine Oil

Use engine oils which meet the following requirements.

| | Engine oil |
|----------------------------|------------------|
| API service classification | SG, SH, SJ or SL |
| 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.



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.



Suzuki recommends the use of 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.

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

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.)

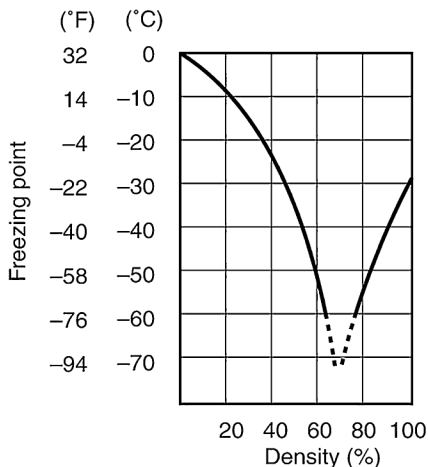
The 50:50 mixture of distilled water and ethylene glycol anti-freeze will provide the optimum corrosion protection and excellent heat protection, and will protect the cooling system from freezing at temperatures above -31 °C (-24 °F).

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



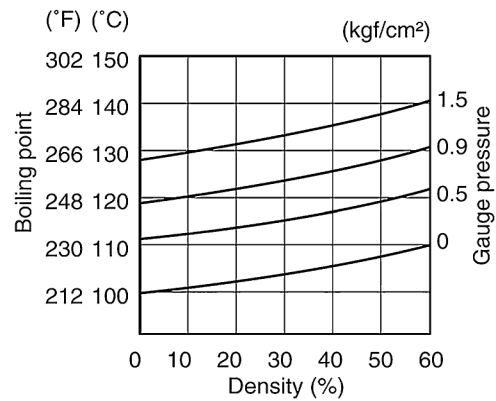
Water for mixing

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-20).

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.

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) |

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.

