

Features & Specifications

2019 V-Strom 1000



DL1000AL9

YYG: Candy Daring Red

Overview

Introduced in 2002, the V-Strom 1000 expanded the popularity of motorcycles in the adventure category. When a more proficient V-Strom 1000 debuted in 2014, it was also embraced by riders around the world. To maintain the V-Strom's leadership in this category, Suzuki applied new technology and practical experience to the 2018 and 2019 V-Strom 1000.

Always a good citizen, the V-Strom 1000 has innovative systems to maintain engine performance and great fuel economy while achieving worldwide emission standards. To emphasize Suzuki's adventure heritage, the V-Strom's styling hints at its lineage with a renewed call for adventure. That fresh styling also contributes to functionality and joins the unique Motion Track Anti-lock* and Combined Brake System and other features to bring rider assist technology to a new group of adventure riders.

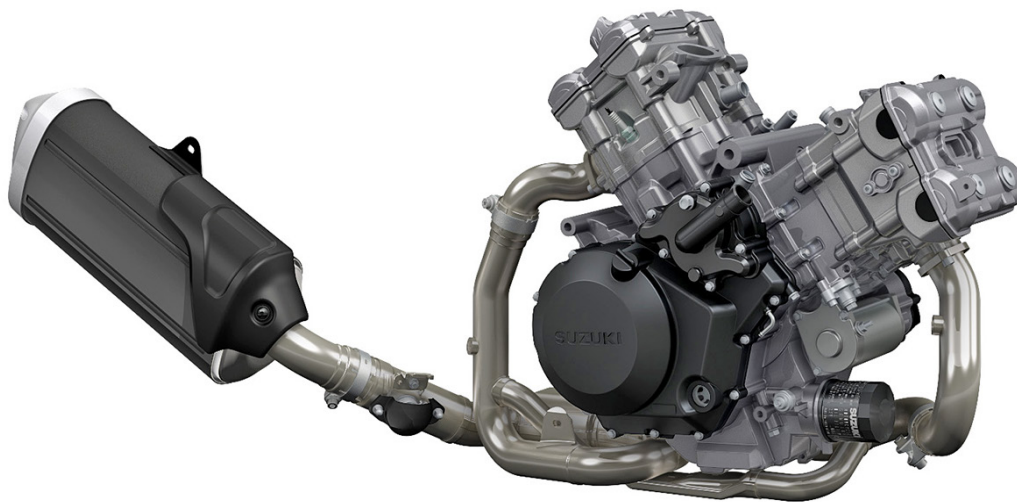
Like every V-Strom before it, the appeal and value of the 2019 V-Strom 1000 will be recognized by experienced and enthusiastic riders. If you want to enjoy a trouble-free adventure as well, join them on a V-Strom.

Key Features

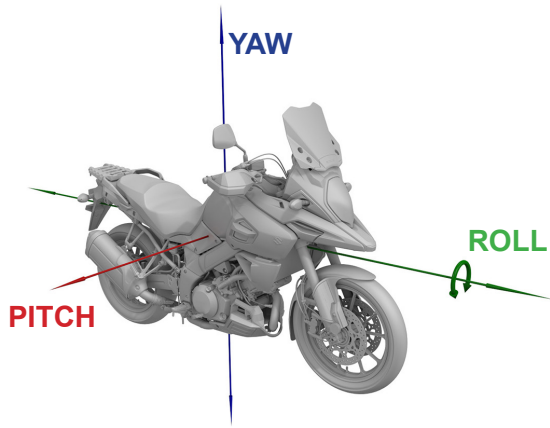
- Liquid-cooled, 1037cc, 90-degree, V-twin engine delivers strong engine performance while achieving worldwide emissions requirements without any reduction in horsepower.
- Five-axis Inertial Measurement Unit (IMU) provides vehicle spatial information to the innovative Motion Track Anti-lock* and Combined Brake System.
- Multifunction, illumination-adjustable instrument panel delivers a wide range of vehicle information and aids in selecting the Suzuki Traction Control System* modes.
- Slim fairing features vertically stacked headlights, hand-adjustable windshield, and iconic Suzuki DR-Big styling that brings true adventure, style, and real-world function.
- Sturdy chassis has integrated mounting points for unified Suzuki V-Strom luggage that's easy to clip on and off, and keeps the motorcycle trim when ready for touring.

Engine Features

- The four-stroke, liquid-cooled, DOHC, 1037cc, 90-degree, V-twin engine is designed to deliver outstanding performance across the entire powerband.
- The perfect primary balance provided by the 90-degree L-twin design negates the need for any balancer shafts or rubber mounting, as the engine has smooth power pulses.
- Pistons were engineered with use of FEM analysis to achieve ideal rigidity and weight.
- Suzuki Composite Electrochemical Material (SCEM)-plated cylinder bores are integrated into the upper crankcase for low weight, increased durability, reduced friction, and excellent heat dissipation.
- Twin throttle bodies with Suzuki Dual Throttle Valve (SDTV) system provide precise throttle response and boost torque at the low- to mid-rpm range, while still producing peak performance.



- The EFI system employs 10-hole injectors on each throttle body to improve fuel atomization for superior combustion efficiency and frugal fuel consumption.
- Advanced 32-bit ECM also operates the Automatic Idle Speed Control (ISC), which improves cold starting and stabilizes the engine idle.
- The ISC on the V-Strom 1000 has Suzuki's Low RPM Assist feature that seamlessly adjusts engine speed during takeoff and low-speed riding to smooth the power delivery and to help reduce the possibility of the rider stalling the motorcycle.
- The refined, single-silencer exhaust configuration reduces weight and has a lower center of gravity to enhance handling and maneuverability.
- Suzuki Exhaust Tuning (SET) servo-controlled butterfly valve in the exhaust mid-pipe helps enhance torque, response, and acceleration, especially at low- to mid-rpm range.
- The V-Strom 1000's exhaust has a pair of inline catalyzers, up from a single catalyzer in the prior model, to achieve an effective level of emission control while maintaining flow to preserve engine performance.
- Matched to the efficient exhaust, the Suzuki Pulsed Secondary Air Injection (PAIR) system injects fresh air into the exhaust ports to satisfy a variety of US and international emission standards without sacrificing performance.
- State-of-the-art transistorized digital ignition system contributes to a more complete combustion by igniting the mixture at the ideal moment.
- Twin iridium-type spark plugs are fitted to each cylinder to provide a more condensed and hotter spark, yet they last longer than conventional plugs.
- The output of the six-speed, close-ratio transmission is managed by the Suzuki Clutch Assist System (SCAS). This system works like a slipper clutch by allowing a small amount of clutch slip to enable smooth down shifts. It also works as an assist clutch, making the clutch lever pull light and precise.



Key to the V-Strom 1000's Motion Track Anti-lock* and Combination Brake System is the BOSCH-supplied Internal Measurement Unit (IMU).

This three-axis IMU measures chassis movement in five directions: **PITCH** down, **ROLL** left and right, and **YAW** left and right. The ABS control unit uses this information, along with wheel speed and other data, to make adjustments to the braking force.

Advanced Electronics Features

- The V-Strom's Anti-lock Brake System (ABS)* has Suzuki's unique Motion Track Anti-lock and Combination Brake System. This system aids rider control during sudden braking, even in corners, and will help the rider continue cornering on the originally intended line.
 - o This advanced ABS system adjusts brake pressure during upright riding with other pressure adjustments when the motorcycle is leaning to either side, so the stopping force matches the available traction.
 - o Information about the motorcycle's attitude is continually measured by a BOSCH five-axis IMU. Sensors on the front and rear wheels continually measure speed. The wheel speed and IMU measurements, plus the amount of brake lever or pedal pressure, are calculated by the ABS control unit to instantly adjust the fluid pressure to the brake calipers as required.
 - o Additionally, this combination system can apply rear brake pressure when the front brake pressure reaches a certain point to help stabilize the vehicle. This contributes to increase stability and maneuverability during cornering.
 - o The rider has customary, independent control of the front and rear brakes unless a situation occurs to activate the Anti-lock or combination braking features.
 - o Thanks to the new, advanced ABS control unit, the amount of kickback from anti-lock function to the lever and pedal has been significantly reduced.
- Suzuki's debuted its first motorcycle traction control system** on the V-Strom 1000 ABS, which enables the rider to control the throttle with more confidence in a variety of riding conditions.
 - o The traction control system continuously monitors front and rear wheel speeds, throttle opening, engine speed, and transmission gear. It quickly reduces engine output when it detects wheel spin by adjusting ignition timing and air delivery.
 - o The rider can select one of three modes (1, 2, and OFF). Modes 1 and 2 differ in terms of sensitivity. Mode 1 has lower sensitivity; it allows a certain degree of rear wheel spin for good road conditions. Mode 2 has higher sensitivity; the system engages traction control sooner and is for poor road conditions.

Chassis Features

- The distinctive fairing design is achieved by a straight styling line from the tip of its beak back to the fuel tank. This is a sharp and aggressive refinement of the Suzuki DR-Big-inspired appearance.
- The height- and angle-adjustable windscreen has an angular shape and is 49mm taller than the prior V-Strom's screen. The windscreen was developed through extensive wind-tunnel testing to reduce wind noise and rider fatigue. Suzuki's patented mechanism allows the windscreen angle to be easily adjusted by hand.
- The advanced chassis is the foundation of a compact, lightweight adventure-ready package that provides comfort and enjoyment to a variety of riders.

Chassis Features (continued)

- The aluminum, twin-spar frame was designed with the latest FEM analysis technology. It is stiffer and 13 percent lighter than that of the previous-generation V-Strom.
- The fuel tank has a generous 5.3-gallon capacity, and the back portion has been slimmed at the seat junction for rider comfort. The sides of the seat use a high-grip texture cover.
- The V-Strom's slender chassis, thanks to the narrow V-twin engine design and trim seat, helps the rider's legs to reach to the ground easier than other models in the class.
- The 43mm KYB inverted front fork provides a sporty yet plush ride in diverse conditions. The fork legs have adjustable spring preload plus compression and rebound-damping force adjusters.
- The single-shock, link-style rear suspension features rebound-damping force adjustment plus remote, hand-operated spring preload adjuster.
- Tokico Monoblock, four-piston front brake calipers are mated with 310mm floating-mount dual discs. These efficient calipers are connected to the new Motion Track Anti-lock* and Combination Brake System for strong stopping performance.
- Lightweight 10-spoke cast aluminum wheels (manufactured for Suzuki by Enkei) combine nimble handling with sporty looks.
- Hand guards with large vibration damper weights and a lower engine protector are standard.

Electrical Features

- The charging system uses a durable, three-phase stator with an open-style regulator/rectifier that reduces mechanical drag and heat while producing higher output at lower engine speeds.
- The multifunction instruments include an analogue tachometer and a brightness-adjustable LCD speedometer. LCD readouts include an odometer, dual trip meters, the gear position, the coolant and ambient temperatures, the voltage, the riding range, the average fuel consumption, the instantaneous fuel consumption, the traction control mode, a fuel gauge, and a clock.
- LED indicators include ABS and traction control alerts, plus a freeze warning icon. This alert, together with the air temperature display, warns of possible icy road conditions.
- The rider can switch between traction control** modes and LCD readings using the left handlebar switch. The left handlebar switch can also reset the trip meters.
- A 12-volt DC accessory outlet is conveniently located below the instrument panel. This fused SAE socket is ideal for powering a GPS unit or charging mobile devices.
- The bright, halogen 65/55-watt headlights have the distinctive vertical configuration seen on the Hayabusa and GSX-R sportbikes.
- Rear tail and brake light uses LEDs, which offer higher visibility and excellent durability.
- The turn signals use bright, incandescent amber bulbs with clear lenses for superb visibility in traffic.

Additional Features

- A wide variety of Genuine Suzuki Accessories for V-Strom owners are available including luggage, heated grips, auxiliary lights, high and low profile seats, case guards, and a large selection of Suzuki logo apparel.
- Additional lock tumblers that match the bike's ignition key are included so you can add Suzuki accessory luggage and have the convenience of one-key operation.
- 12-month limited warranty
- Additional length coverage and other benefits are available through Suzuki Extended Protection.
- For more details, please visit www.suzukicycles.com.

* 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.

** 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.

Specifications DL1000AL9

E-03: USA, E-33: California

Dimensions and curb mass

| Item | Specification | Remark |
|------------------|-------------------|--------|
| Overall length | 2280 mm (89.8 in) | — |
| Overall width | 930 mm (36.6 in) | — |
| Overall height | 1470 mm (57.9 in) | — |
| Wheelbase | 1555 mm (61.2 in) | — |
| Ground clearance | 165 mm (6.5 in) | — |
| Seat height | 850 mm (33.5 in) | — |
| Curb mass | 232 kg (511 lbs) | — |

Engine

| Item | Specification | Remark |
|---------------------|---|--------|
| Type | 4-stroke, liquid-cooled, DOHC, 90-degree V-twin | — |
| Number of cylinders | 2 | — |
| Bore | 100.0 mm (3.937 in) | — |
| Stroke | 66.0 mm (2.598 in) | — |
| Displacement | 1037 cm ³ (63.3 cu. in) | — |
| Compression ratio | 11.3 : 1 | — |
| Fuel system | Fuel injection system | — |
| Air cleaner | Paper element | — |
| Starter system | Electric | — |
| Lubrication system | Wet sump | — |
| Idle speed | 1200 – 1400 r/min | — |

Drive train

| Item | Specification | Remark |
|-------------------------|-----------------------|---------------|
| Clutch | Wet multi-plate | — |
| Transmission | 6-speed constant mesh | — |
| Gearshift pattern | 1-down, 5-up | — |
| Primary reduction ratio | 1.838 (57/31) | — |
| Gear ratios | Low | 3.000 (36/12) |
| | 2nd | 1.933 (29/15) |
| | 3rd | 1.500 (27/18) |
| | 4th | 1.227 (27/22) |
| | 5th | 1.086 (25/23) |
| | Top | 1.000 (24/24) |
| Final reduction ratio | 2.411 (41/17) | — |
| Drive chain | RK525SMOZ8, 116 links | — |

Chassis

| Item | Specification | Remark |
|-------------------|-------------------------------------|--------|
| Front suspension | Telescopic, coil spring, oil damped | — |
| Rear suspension | Link type, coil spring, oil damped | — |
| Front fork stroke | 160 mm (6.3 in) | — |
| Rear wheel travel | 160 mm (6.3 in) | — |
| Steering angle | 36° (right & left) | — |
| Caster | 25° 30' | — |
| Trail | 109 mm (4.29 in) | — |
| Turning radius | 2.9 m (9.5 ft) | — |
| Front brake | Disc brake, twin | — |
| Rear brake | Disc brake | — |
| Front tire | 110/80R19M/C 59V, tubeless | — |
| Rear tire | 150/70R17M/C 69V, tubeless | — |

Specifications DL1000AL9

E-03: USA, E-33: California

Electrical

| Item | Specification | Remark |
|---|--------------------------------------|--------------|
| Ignition type | Electronic ignition (Transistorized) | — |
| Spark plug | NGK LMAR8BI-9 | — |
| Battery | 12 V 40.3 kC (11.2 Ah)/10 HR | — |
| Generator | Three-phase A.C. generator | — |
| Main fuse | 30 A | — |
| Fuse | 15/15/15/15/10/10/3 A | — |
| ABS fuse | 25/15 A | — |
| Headlight | Hi beam | 12 V 65 W H9 |
| | Low beam | 12 V 55 W H7 |
| Position light | 12 V 5 W | — |
| Brake light/Tail light | LED | — |
| Turn signal light | 12 V 21 W | — |
| License plate light | 12 V 5 W | — |
| Instrument panel light | LED | — |
| Turn signal indicator light | LED | — |
| Neutral indicator light | LED | — |
| Hi beam indicator light | LED | — |
| Engine coolant temperature indicator light/Oil pressure indicator light | LED | — |
| MIL | LED | — |
| Freeze indicator light | LED | — |
| ABS indicator light | LED | — |
| Traction control system indicator light | LED | — |

Capacities

| Item | Specification | Remark |
|----------------|----------------------------------|---------------------------------|
| Fuel tank | 20.0 L (5.3 US gal, 4.4 Imp gal) | — |
| Engine oil | Oil change | 2700 ml (2.9 US qt, 2.4 Imp qt) |
| | With filter change | 3100 ml (3.3 US qt, 2.7 Imp qt) |
| Engine coolant | 2.13 L (2.3 US qt, 1.9 Imp qt) | — |

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Service Data DL1000AL9

E-03: USA, E-33: California

Engine General Information and Diagnosis

| Item | | Standard / Specification | | Limit / Note |
|---|----------------------|--------------------------|-----------------------|---------------|
| IAP sensor power supply voltage (#1 & #2) | | 4.5 – 5.5 V | | — |
| IAP sensor output voltage (#1 & #2) | Idle speed at 1 atm. | Approx. 2.5 V | | — |
| IAT sensor input voltage | | 4.5 – 5.5 V | | — |
| IAT sensor output voltage | | 0.15 – 4.85 V | | — |
| IAT sensor resistance | 0 °C (32 °F) | 5400 – 6600 Ω | | — |
| ECT sensor input voltage | | 4.5 – 5.5 V | | — |
| ECT sensor output voltage | | 0.15 – 4.85 V | | — |
| ECT sensor resistance | 20 °C (68 °F) | 2320 – 2590 Ω | | — |
| TP sensor power supply voltage | | 4.5 – 5.5 V | | — |
| TP sensor output voltage | | Closed | 1.10 – 1.14 V | — |
| | | Opened | Approx. 4.3 V | — |
| HO2 sensor output voltage (#1 & #2) | | Idle speed | Approx. 0.6 V or less | — |
| | | 6000 r/min | Approx. 0.6 V or more | — |
| HO2 sensor heater power supply voltage (#1 & #2) | | Battery voltage | | — |
| HO2 sensor heater resistance (#1 & #2) | | 23 °C (73 °F) | 6.7 – 9.5 Ω | — |
| Injector power supply voltage | | Battery voltage | | — |
| Injector resistance | 20 °C (68 °F) | 11.5 – 12.5 Ω | | — |
| Continuity between each injector terminal and ground | | ∞ Ω (Infinity) | | — |
| FP relay power supply voltage | | Battery voltage | | — |
| CKP sensor resistance | | 145 – 225 Ω | | — |
| Continuity between each CKP sensor terminal and ground | | ∞ Ω (Infinity) | | — |
| CKP sensor peak voltage | | 4.5 V or more | | When cranking |
| EVAP system purge control solenoid valve power supply voltage | | Battery voltage | | — |
| EVAP system purge control solenoid valve resistance | 20 °C (68 °F) | 30 – 34 Ω | | — |
| Cooling fan relay power supply voltage | | Battery voltage | | — |
| TO sensor power supply voltage | | 4.5 – 5.5 V | | — |
| TO sensor voltage | | Normal | 0.4 – 1.4 V | — |
| | | Leaning 65° | 3.7 – 4.4 V | — |
| TO sensor resistance | | 16.5 – 22.3 kΩ | | — |
| PAIR control solenoid valve power supply voltage | DL1000AL5 – | Battery voltage | | — |
| PAIR control solenoid valve resistance | DL1000AL5 – | 20 – 30 °C (68 – 86 °F) | 20 – 24 Ω | — |
| STP sensor power supply voltage | | 4.5 – 5.5 V | | — |
| STP sensor output voltage | | Closed | Approx. 0.6 V | — |
| | | Opened | Approx. 4.5 V | — |
| STVA resistance | | Approx. 7 Ω | | — |
| ECM power supply voltage | | Battery voltage | | — |

Emission Control Devices

| Item | | Standard / Specification | | Limit / Note |
|---|-------------|----------------------------|-----------|--------------|
| EVAP system purge control solenoid valve resistance | | 20 °C (68 °F) | 30 – 34 Ω | If equipped |
| PAIR control solenoid valve resistance | DL1000AL5 – | 20 – 30 °C (68 – 86 °F) | 20 – 24 Ω | If equipped |

Engine Electrical Devices

| Item | Standard / Specification | | Limit / Note |
|------------------------------------|-------------------------------|-----------------|-----------------|
| Throttle cable play | 2.0 – 4.0 mm (0.08 – 0.16 in) | | — |
| Idle speed (When engine is warmed) | 1200 – 1400 r/min | | — |
| Fast idle speed | 1500 r/min | | — |
| IAT sensor resistance | 0 °C (32 °F) | 5400 – 6600 Ω | — |
| | 80 °C (176 °F) | 290 – 390 Ω | — |
| ECT sensor resistance | –20 °C (–4 °F) | 13840 – 16330 Ω | — |
| | 20 °C (68 °F) | 2320 – 2590 Ω | — |
| | 80 °C (176 °F) | 310 – 326 Ω | — |
| GP switch voltage | 0.6 V or more | | From 1st to Top |
| Throttle body I.D. No. | 31J1 | | — |
| Throttle body bore size | 45 mm (1.8 in) | | — |

Engine Mechanical

| Item | Standard / Specification | | Limit / Note |
|---|---|---|--|
| Compression pressure (Automatic de-comp. actuated) | 1000 – 1400 kPa (10 – 14 kgf/cm ² , 142 – 199 psi) | | 800 kPa (8 kgf/cm ² , 114 psi) |
| Compression pressure difference | — | | 200 kPa (2 kgf/cm ² , 28 psi) |
| Cam height | IN. | 36.28 – 36.32 mm (1.428 – 1.430 in) | 35.98 mm (1.417 in) |
| | EX. | 35.68 – 35.72 mm (1.405 – 1.406 in) | 35.38 mm (1.393 in) |
| Camshaft journal oil clearance | IN. & EX. | 0.019 – 0.053 mm (0.0007 – 0.0021 in) | 0.150 mm (0.0059 in) |
| Camshaft journal holder I.D. | IN. & EX. | 22.012 – 22.025 mm (0.8666 – 0.8671 in) | — |
| Camshaft journal O.D. | IN. & EX. | 21.972 – 21.993 mm (0.8650 – 0.8659 in) | — |
| Camshaft runout | IN. & EX. | — | 0.10 mm (0.004 in) |
| Valve clearance (When engine is cold) | IN. | 0.10 – 0.20 mm (0.004 – 0.008 in) | — |
| | EX. | 0.20 – 0.30 mm (0.008 – 0.012 in) | — |
| Valve diameter | IN. | 36 mm (1.4 in) | — |
| | EX. | 33 mm (1.3 in) | — |
| Valve stem runout | IN. & EX. | — | 0.05 mm (0.002 in) |
| Valve head radial runout | IN. & EX. | — | 0.03 mm (0.001 in) |
| Valve head thickness | IN. & EX. | — | 0.5 mm (0.02 in) |
| Valve stem deflection | IN. & EX. | — | 0.35 mm (0.014 in) |
| Valve stem O.D. | IN. | 5.475 – 5.490 mm (0.2156 – 0.2161 in) | — |
| | EX. | 5.455 – 5.470 mm (0.2148 – 0.2154 in) | — |
| Valve seat width | IN. | 1.17 – 1.37 mm (0.046 – 0.054 in) | — |
| | EX. | 1.31 – 1.51 mm (0.052 – 0.059 in) | — |
| Valve guide I.D. | IN. & EX. | 5.500 – 5.512 mm (0.2165 – 0.2170 in) | — |
| Valve guide to valve stem clearance | IN. | 0.010 – 0.037 mm (0.0004 – 0.0015 in) | — |
| | EX. | 0.030 – 0.057 mm (0.0012 – 0.0022 in) | — |
| Valve spring free length | IN. & EX. | — | 39.6 mm (1.56 in) |
| Valve spring preload when compressed to 35.6 mm (1.40 in) | IN. & EX. | 197 – 227 N (20.1 – 23.1 kgf, 44.3 – 51.0 lbf) | — |
| Cylinder head distortion | — | | 0.05 mm (0.002 in) |
| Cylinder distortion | — | | 0.05 mm (0.002 in) |
| Cylinder bore | 100.000 – 100.015 mm (3.9370 – 3.9376 in) | | No nicks or Scratches |

| Item | Standard / Specification | | Limit / Note |
|-------------------------------------|--|---|-----------------------|
| Piston diameter | 99.980 – 99.995 mm (3.9362 – 3.9368 in) Measure at 10 mm (0.4 in) from the skirt end. | | 99.880 mm (3.9323 in) |
| Piston to cylinder clearance | 0.015 – 0.025 mm (0.0006 – 0.0010 in) | | 0.120 mm (0.0047 in) |
| Piston ring to groove clearance | 1st | — | 0.180 mm (0.0071 in) |
| | 2nd | — | 0.150 mm (0.0059 in) |
| Piston ring groove width | 1st | L4 – L6 0.83 – 0.85 mm (0.0327 – 0.0335 in) 1.25 – 1.27 mm (0.0492 – 0.0500 in) | — |
| | | L8 – 0.83 – 0.86 mm (0.0327 – 0.0339 in) 1.25 – 1.28 mm (0.0492 – 0.0504 in) | — |
| | 2nd | 1.01 – 1.03 mm (0.0398 – 0.0406 in) | — |
| | Oil | 2.01 – 2.03 mm (0.0791 – 0.0799 in) | — |
| Piston ring thickness | 1st | 0.76 – 0.81 mm (0.0299 – 0.0319 in) 1.08 – 1.10 mm (0.0425 – 0.0433 in) | — |
| | 2nd | 0.97 – 0.99 mm (0.0382 – 0.0390 in) | — |
| Piston ring free end gap | 1st | Approx. 11.0 mm (0.43 in) | 8.8 mm (0.35 in) |
| | 2nd | Approx. 13.9 mm (0.55 in) | 11.1 mm (0.43 in) |
| Piston ring end gap | 1st | 0.10 – 0.25 mm (0.004 – 0.010 in) | 0.50 mm (0.020 in) |
| | 2nd | 0.30 – 0.45 mm (0.012 – 0.018 in) | 0.70 mm (0.028 in) |
| Piston pin bore I.D. | 22.002 – 22.008 mm (0.8662 – 0.8665 in) | | 22.030 mm (0.8673 in) |
| Piston pin O.D. | 21.995 – 22.000 mm (0.8659 – 0.8661 in) | | 21.980 mm (0.8654 in) |
| Conrod small end I.D. | 22.010 – 22.018 mm (0.8665 – 0.8668 in) | | 22.040 mm (0.8677 in) |
| Conrod big end side clearance | 0.17 – 0.32 mm (0.007 – 0.013 in) | | 0.50 mm (0.020 in) |
| Conrod big end width | 21.95 – 22.00 mm (0.864 – 0.866 in) | | — |
| Crank pin width | 44.17 – 44.22 mm (1.739 – 1.741 in) | | — |
| Conrod big end oil clearance | 0.032 – 0.056 mm (0.0013 – 0.0022 in) | | 0.080 mm (0.0031 in) |
| Conrod big end I.D. | 48.000 – 48.016 mm (1.8898 – 1.8904 in) | | — |
| Crank pin O.D. | 44.976 – 45.000 mm (1.7707 – 1.7717 in) | | — |
| Crank pin bearing thickness | 1.480 – 1.496 mm (0.0583 – 0.0589 in) | | — |
| Crankshaft journal O.D. | 47.985 – 48.000 mm (1.8892 – 1.8898 in) | | — |
| Crankshaft journal oil clearance | 0.023 mm (0.0009 in) or less | | 0.080 mm (0.0031 in) |
| Crankcase journal I.D. | 52.000 – 52.018 mm (2.0472 – 2.0479 in) | | — |
| Crankcase journal bearing thickness | 1.999 – 2.008 mm (0.0787 – 0.0791 in) | | — |
| Crankshaft journal holder width | 25.2 – 25.4 mm (0.99 – 1.00 in) | | — |
| Crankshaft journal width | 25.50 – 25.55 mm (1.004 – 1.006 in) | | — |
| Crankshaft runout | — | | 0.05 mm (0.002 in) |

Engine Lubrication System

| Item | Standard / Specification | | Limit / Note |
|---------------------------------|--------------------------|---|--------------|
| Oil pressure (at 60 °C, 140 °F) | 3000 r/min | 400 – 700 kPa (4 – 7 kgf/cm ² , 57 – 100 psi) | — |
| Necessary amount of engine oil | Oil change | 2700 ml (2.9 US qt, 2.4 Imp qt) | — |
| | Oil and filter change | 3100 ml (3.3 US qt, 2.7 Imp qt) | — |
| | Engine overhaul | 3500 ml (3.7 US qt, 3.1 Imp qt) | — |

Engine Cooling System

| Item | Standard / Specification | | Limit / Note |
|--------------------------------------|---|--|--------------|
| Engine coolant | Reservoir tank side | Approx. 230 ml (0.24 US qt, 0.20 Imp qt) | — |
| | Engine side | Approx. 1900 ml (2.0 US qt, 1.6 Imp qt) | — |
| Radiator cap valve opening pressure | 108 – 137 kPa (1.1 – 1.4 kgf/cm ² , 15.4 – 19.5 psi) | | — |
| Cooling fan operating temperature | ON → OFF | Approx. 100 °C (212 °F) | — |
| | OFF → ON | Approx. 105 °C (221 °F) | — |
| Thermostat valve opening temperature | 86.5 – 89.5 °C (188 – 193 °F) | | — |
| Thermostat valve lift | Over 8 mm (0.31 in) at 100 °C (212 °F) | | — |

Fuel System

| Item | Standard / Specification | Limit / Note |
|---|--|--------------|
| Fuel pressure | Approx. 300 kPa (3.0 kgf/cm ² , 43 psi) | — |
| Fuel pump discharge amount per 10 seconds | 167 ml (5.6 US oz, 5.9 Imp oz) or more | — |

Ignition System

| Item | Standard / Specification | | Limit / Note |
|------------------------------------|------------------------------|---------------------------------|-----------------------------|
| Firing order | 1.2 | | — |
| Spark plug | Type | NGK: LMAR8BI-9 | — |
| | Gap | 0.8 – 0.9 mm (0.031 – 0.035 in) | — |
| Spark performance | Over 8 mm (0.3 in) at 1 atm. | | — |
| Ignition coil primary peak voltage | 150 V or more | | — |
| Ignition coil resistance | Primary | 3.06 – 4.14 Ω | (+) Terminal – (-) Terminal |
| | Secondary | 24 – 36 kΩ | (+) Terminal – Plug cap |

Starting System

| Item | Standard / Specification | | Limit / Note |
|------------------------------------|--|---------------|------------------|
| Starter motor brush length | 12 mm (0.47 in) | | 6.5 mm (0.26 in) |
| Starter relay resistance | 3 – 6 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 | — |
| Starter torque limiter slip torque | 20 – 45 N·m (2.0 – 4.5 kgf-m, 14.5 – 32.5 lbf-ft) | | — |

Exhaust System

| Item | Standard / Specification | | Limit / Note |
|--|--------------------------|---------------|------------------------|
| 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 | Approx. 3.1 kΩ | | At adjustment position |

Charging System

| Item | Standard / Specification | | Limit / Note |
|--|---|------------------------------|--------------|
| Battery leakage current | 3 mA or less | | — |
| Regulated voltage (charging output) | 5000 r/min | 13.5 – 15.0 V | — |
| Generator coil resistance | 0.21 – 0.27 Ω | | Y – Y |
| Generator no-load voltage (When engine is cold) | 5000 r/min | 75 V (AC) or more | — |
| Recharging time | 1.4 A for 5 to 10 hours or 6 A for 1 hour | | — |
| Generator maximum output | 5000 r/min | Approx. 490 W | — |
| Battery | Type designation | FTZ14S | |
| | Capacity | 12 V 40.3 kC (11.2 Ah)/10 HR | |

Front Suspension

| Item | Standard / Specification | | Limit / Note |
|---|----------------------------------|--|------------------|
| Front fork inner tube O.D. | 43 mm (1.7 in) | | — |
| Front fork oil level (Without spring, inner tube fully compressed) | 120 mm (4.7 in) | | — |
| Front fork spring free length | 328 mm (12.9 in) | | 321 mm (12.6 in) |
| Front fork oil capacity (Each leg) | 569 ml (19.2 US oz, 20.0 Imp oz) | | — |
| Front fork spring adjuster | 11 mm (0.4 in) | | — |
| Front fork damping force adjuster | Rebound | 8 clicks counterclockwise from stiffest position | — |
| | Compression | 8 clicks counterclockwise from stiffest position | — |

Rear Suspension

| Item | Standard / Specification | | Limit / Note |
|--|---|--|------------------|
| Rear shock absorber spring pre-load | 11th clicks clockwise from softest position | | — |
| Rear shock absorber damping force adjuster | Rebound | 1.25 turns counterclockwise from stiffest position | — |
| Swingarm pivot shaft runout | — | | 0.3 mm (0.01 in) |

Wheels and Tires

| Item | Standard / Specification | | Limit / Note | |
|---|--------------------------|---|--------------------|------------------|
| Wheel rim runout | Front & Rear | Axial | — | 2.0 mm (0.08 in) |
| | | Radial | — | 2.0 mm (0.08 in) |
| Wheel axle runout | Front & Rear | — | 0.25 mm (0.010 in) | |
| Tire size | Front | 110/80R19M/C 59V | | — |
| | Rear | 150/70R17M/C 69V | | — |
| Tire type | Front | BRIDGESTONE: BW-501 RADIAL J | | — |
| | Rear | BRIDGESTONE: BW-502 RADIAL J | | — |
| Tire tread depth (Recommended depth) | Front | — | | 1.6 mm (0.06 in) |
| | Rear | — | | 2.0 mm (0.08 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) | | — |
| Cold inflation tire pressure (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 | 19 M/C x MT 2.50 | | — |
| | Rear | 17 M/C x MT 4.00 | | — |

Steering / Handlebar

| Item | Standard / Specification | | Limit / Note |
|--------------------------------|--|--|--------------|
| Steering tension initial force | 2 – 5 N (0.2 – 0.5 kgf, 0.4 – 1.1 lbf) | | — |

Drive Chain / Drive Train / Drive Shaft

| Item | Standard / Specification | | Limit / Note |
|-----------------------------------|---------------------------|------------|---------------------|
| Drive chain | Type | RK525SMOZ8 | — |
| | Links | 116 links | — |
| | 20-pitch length | — | 319.4 mm (12.57 in) |
| Drive chain slack (on side-stand) | 20 – 30 mm (0.8 – 1.2 in) | | — |

Brake Control System and Diagnosis

| Item | Standard / Specification | | Limit / Note |
|--|---------------------------|---------------------------|--------------|
| Rear brake pedal height | 20 – 30 mm (0.8 – 1.2 in) | | — |
| Master cylinder bore / piston diameter | Front & Rear | Approx. 14.0 mm (0.55 in) | — |

Front Brakes

| Item | Standard / Specification | | Limit / Note |
|---|--|--|--------------------|
| Brake disc thickness | 4.8 – 5.2 mm (0.19 – 0.20 in) | | 4.5 mm (0.18 in) |
| Brake disc runout | — | | 0.30 mm (0.012 in) |
| Brake caliper cylinder bore / piston diameter | Approx. 30.3 mm (1.19 in) Approx. 32.1 mm (1.26 in) | | — |

Rear Brakes

| Item | Standard / Specification | | Limit / Note |
|---|-------------------------------|--|--------------------|
| Brake disc thickness | 4.8 – 5.2 mm (0.19 – 0.20 in) | | 4.5 mm (0.18 in) |
| Brake disc runout | — | | 0.30 mm (0.012 in) |
| Brake caliper cylinder bore / piston diameter | Approx. 38.2 mm (1.50 in) | | — |

ABS

| Item | Standard / Specification | | Limit / Note |
|---|--------------------------|-----------------------------------|--------------|
| Wheel speed sensor – Sensor rotor clearance | Front | 0.46 – 1.67 mm (0.018 – 0.066 in) | — |
| | Rear | 0.51 – 1.62 mm (0.020 – 0.064 in) | — |

Transmission

| Item | Standard / Specification | | Limit / Note |
|------------------------------------|---------------------------|---------------------------------|--------------------|
| Primary reduction ratio | 1.838 (57/31) | | — |
| Final reduction ratio | 2.411 (41/17) | | — |
| Gear ratios | Low | 3.000 (36/12) | — |
| | 2nd | 1.933 (29/15) | — |
| | 3rd | 1.500 (27/18) | — |
| | 4th | 1.227 (27/22) | — |
| | 5th | 1.086 (25/23) | — |
| | Top | 1.000 (24/24) | — |
| Gearshift fork to groove clearance | No.1, 2 | 0.1 – 0.3 mm (0.004 – 0.012 in) | 0.50 mm (0.020 in) |
| Gearshift fork groove width | No.1, 2 | 5.0 – 5.1 mm (0.197 – 0.201 in) | — |
| Gearshift fork thickness | No.1, 2 | 4.8 – 4.9 mm (0.189 – 0.193 in) | — |
| Gearshift lever height | 20 – 30 mm (0.8 – 1.2 in) | | — |

Clutch

| Item | Standard / Specification | | Limit / Note |
|---|----------------------------|-------------------------------------|---------------------|
| Drive plate thickness | No.1, 2 | 3.72 – 3.88 mm (0.146 – 0.153 in) | 3.42 mm (0.135 in) |
| Drive plate claw width | No.1, 2 | 13.90 – 14.00 mm (0.547 – 0.551 in) | 13.10 mm (0.516 in) |
| Driven plate distortion | No.1, 2, 3, 4 | — | 0.10 mm (0.004 in) |
| Clutch spring free length | 45.7 mm (1.80 in) | | 43.5 mm (1.71 in) |
| Master cylinder bore / piston diameter | Approx. 12.7 mm (0.500 in) | | — |
| Release cylinder bore / piston diameter | Approx. 35.7 mm (1.41 in) | | — |

Wiring Systems

| Item | Standard / Specification | | Limit / Note | |
|-----------|--------------------------|------|--------------|---|
| Fuse size | Headlight | Hi | 15 A | — |
| | | Lo | 15 A | — |
| | Fuel | 10 A | — | |
| | Ignition | 10 A | — | |
| | Signal | 15 A | — | |
| | Fan | 15 A | — | |
| | Main | 30 A | — | |
| | P-source | 3 A | — | |
| | ABS motor | 25 A | — | |
| ABS valve | 15 A | — | | |

Lighting Systems

| Item | Standard / Specification | | Limit / Note |
|-------------------------|--------------------------|----------------|--------------|
| Headlight | Hi | 12 V 65 W (H9) | — |
| | Lo | 12 V 55 W (H7) | — |
| Position light | 12 V 5 W | | — |
| Front turn signal light | 12 V 21 W × 2 | | — |
| Rear turn signal light | 12 V 21 W × 2 | | — |
| Brake light/Tail light | LED | | — |
| License plate light | 12 V 5 W | | — |

Combination Meter / Fuel Meter / Horn

| Item | Standard / Specification | | Limit / Note |
|---|--------------------------|-----------------|--------------|
| 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 | — |
| Instrument panel light | LED | | — |
| Turn signal indicator light | LED | | — |
| Hi beam indicator light | LED | | — |
| Neutral indicator light | LED | | — |
| ABS indicator light | LED | | — |
| Engine coolant temperature indicator light/Oil pressure indicator | LED | | — |
| MIL | LED | | — |
| TC indicator light | LED | | — |
| Freeze indicator light | LED | | — |

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 |
| EVAP system purge control solenoid valve nut | 7 | 0.7 | 5.0 |

Engine Electrical Devices

| Fastening part | Tightening torque | | |
|--|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Intake pipe clamp screw | 1.5 | 0.15 | 1.0 |
| Throttle cable lock-nut | 4.5 | 0.45 | 3.5 |
| STP sensor mounting screw | 3.5 | 0.35 | 2.5 |
| TP sensor mounting screw | 3.5 | 0.35 | 2.5 |
| Fuel delivery pipe mounting screw | 3.5 | 0.35 | 2.5 |
| EVAP system purge control solenoid valve bracket screw | 5 | 0.5 | 4.0 |
| EVAP system purge control solenoid valve nut | 7 | 0.7 | 5.0 |
| IAT sensor screw | 1.3 | 0.13 | 1.0 |
| ECT sensor | 18 | 1.8 | 13.0 |
| HO2 sensor | 25 | 2.5 | 18.0 |
| EXCV cable guide bolt | 10 | 1.0 | 7.5 |
| Rear brake master cylinder mounting bolt | 10 | 1.0 | 7.5 |

Engine Mechanical

| Fastening part | Tightening torque | | |
|---|---|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Air cleaner outlet tube clamp screw | 1.5 | 0.15 | 1.0 |
| Cylinder head cover bolt | 14 | 1.4 | 10.5 |
| Camshaft journal holder bolt | 10 | 1.0 | 7.5 |
| Generator cover plug | 15 | 1.5 | 11.0 |
| Valve timing inspection plug | 21 | 2.1 | 15.5 |
| Engine mounting thrust adjuster | 12 | 1.2 | 9.0 |
| Engine mounting thrust adjuster lock-nut | 45 | 4.5 | 32.5 |
| Engine mounting pinch bolt | 23 | 2.3 | 17.0 |
| Front footrest bracket bolt | 26 | 2.6 | 19.0 |
| Intake pipe mounting screw | 8.5 | 0.85 | 6.5 |
| Cylinder head bolt (M10) | 25 → 46 N·m (2.5 → 4.6 kgf-m, 18.0 → 33.5 lbf-ft) | | |
| Cylinder head nut (M8) | 25 | 2.5 | 18.0 |
| Cylinder head nut (M6) | 10 | 1.0 | 7.5 |
| Cylinder head bolt (M6) | 10 | 1.0 | 7.5 |
| Cylinder nut | 10 | 1.0 | 7.5 |
| Cam chain tensioner mounting bolt | 10 | 1.0 | 7.5 |
| Cylinder head cover No. 2 bolt | 10 | 1.0 | 7.5 |
| Cam chain tension adjuster mounting bolt | 10 | 1.0 | 7.5 |
| Cam chain tension adjuster cap bolt (Front) | 23 | 2.3 | 17.0 |
| Cam chain tension adjuster cap bolt (Rear) | 7 | 0.7 | 5.0 |
| Water union bolt | 10 | 1.0 | 7.5 |
| Oil gallery plug (M6) | 10 | 1.0 | 7.5 |
| Crankcase bolt (M8) (L110) | 26 | 2.6 | 19.0 |
| Crankcase bolt (M8) (L125) | 26 | 2.6 | 19.0 |
| Crankcase bolt (M8) (L90) | 26 | 2.6 | 19.0 |
| Crankcase bolt (M6) (L85) | 11 | 1.1 | 8.0 |
| Crankcase bolt (M6) (L70) | 11 | 1.1 | 8.0 |
| Crankcase bolt (M6) (L30) | 11 | 1.1 | 8.0 |
| Primary drive gear nut | 160 | 16.0 | 116.0 |
| Cam drive idle gear/sprocket No. 1 nut | 71 | 7.1 | 51.5 |
| Special tool bolt | 23 | 2.3 | 17.0 |
| Oil gallery plug (M8) | 18 | 1.8 | 13.0 |

| Fastening part | Tightening torque | | |
|--|--|-------|--------|
| | N·m | kgf·m | lbf·ft |
| Oil drain plug | 23 | 2.3 | 17.0 |
| Cam drive idle gear shaft bearing retainer screw | 8.5 | 0.85 | 6.5 |
| Oil gallery plug (M16) | 35 | 3.5 | 25.5 |
| Conrod cap bolt | 35 N·m (3.5 kgf·m, 25.5 lbf·ft) → turn clockwise 90° | | |

Engine Lubrication System

| Fastening part | Tightening torque | | |
|------------------------------------|-------------------|-------|--------|
| | N·m | kgf·m | lbf·ft |
| Oil gallery plug (M8) | 18 | 1.8 | 13.0 |
| Oil drain plug | 23 | 2.3 | 17.0 |
| Oil filter | 20 | 2.0 | 14.5 |
| Oil pressure switch | 14 | 1.4 | 10.5 |
| Oil pressure switch lead wire bolt | 1.5 | 0.15 | 1.0 |
| Piston cooling nozzle bolt | 10 | 1.0 | 7.5 |

Engine Cooling System

| Fastening part | Tightening torque | | |
|------------------------------------|-------------------|-------|--------|
| | N·m | kgf·m | lbf·ft |
| Clutch cover water drain bolt | 5.5 | 0.55 | 4.0 |
| Air bleeder bolt | 13 | 1.3 | 9.5 |
| Cooling fan assembly mounting bolt | 8 | 0.8 | 6.0 |
| Radiator mounting bolt | 10 | 1.0 | 7.5 |
| Water hose clamp screw | 1.5 | 0.15 | 1.0 |
| Reservoir tank mounting bolt | 6 | 0.6 | 4.5 |
| Reservoir tank bracket bolt | 11 | 1.1 | 8.0 |
| Thermostat connector cap bolt | 10 | 1.0 | 7.5 |
| Oil separator screw | 8.5 | 0.85 | 6.5 |
| Water pump case bolt | 10 | 1.0 | 7.5 |

Fuel System

| Fastening part | Tightening torque | | |
|-------------------------|-------------------|-------|--------|
| | N·m | kgf·m | lbf·ft |
| Fuel pump mounting bolt | 10 | 1.0 | 7.5 |

Ignition System

| Fastening part | Tightening torque | | |
|----------------|-------------------|-------|--------|
| | N·m | kgf·m | lbf·ft |
| Spark plug | 11 | 1.1 | 8.0 |

Starting System

| Fastening part | Tightening torque | | |
|--------------------------------------|-------------------|-------|--------|
| | N·m | kgf·m | lbf·ft |
| Starter motor mounting bolt | 10 | 1.0 | 7.5 |
| Starter motor lead wire mounting nut | 6 | 0.6 | 4.5 |
| Starter clutch bolt | 25 | 2.5 | 18.0 |

Charging System

| Fastening part | Tightening torque | | |
|-----------------------|-------------------|-------|--------|
| | N·m | kgf·m | lbf·ft |
| Generator stator bolt | 10 | 1.0 | 7.5 |
| CKP sensor bolt | 6.5 | 0.65 | 5.0 |
| Generator rotor bolt | 180 | 18.0 | 130.5 |

Exhaust System

| Fastening part | Tightening torque | | |
|---------------------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| EXCVA pulley mounting bolt | 5 | 0.5 | 4.0 |
| EXCV cable guide bolt | 10 | 1.0 | 7.5 |
| EXCV cable bracket mounting nut | 11 | 1.1 | 8.0 |
| EXCV cover nut | 10 | 1.0 | 7.5 |
| Exhaust pipe bolt | 23 | 2.3 | 17.0 |
| Center exhaust pipe bolt | 26 | 2.6 | 19.0 |
| Exhaust pipe connecting bolt | 18 | 1.8 | 13.0 |
| Muffler rear cover screw | 10 | 1.0 | 7.5 |
| Muffler front cover bolt | 5.5 | 0.55 | 4.0 |
| Muffler support bolt | 30 | 3.0 | 22.0 |
| Muffler connecting bolt | 18 | 1.8 | 13.0 |

Front Suspension

| Fastening part | Tightening torque | | |
|-------------------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Front fork cap bolt | 23 | 2.3 | 17.0 |
| Front fork lower clamp bolt | 23 | 2.3 | 17.0 |
| Front fork upper clamp bolt | 23 | 2.3 | 17.0 |
| Front fender mounting bolt | 12 | 1.2 | 9.0 |
| Inner rod/damper rod | 70 | 7.0 | 51.0 |
| Front fork inner rod lock-nut | 15 | 1.5 | 11.0 |

Rear Suspension

| Fastening part | Tightening torque | | |
|--|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Rear shock absorber mounting nut | 50 | 5.0 | 36.5 |
| Cushion lever mounting nut | 98 | 9.8 | 71.0 |
| Cushion rod mounting nut | 98 | 9.8 | 71.0 |
| Rear shock absorber lower mounting nut | 50 | 5.0 | 36.5 |
| Mud guard bolt | 6.5 | 0.65 | 5.0 |
| Brake hose guide screw | 5 | 0.5 | 4.0 |
| Swingarm pivot shaft | 15 | 1.5 | 11.0 |
| Swingarm pivot nut | 100 | 10.0 | 72.5 |
| Swingarm pivot lock-nut | 90 | 9.0 | 65.0 |

Wheels and Tires

| Fastening part | Tightening torque | | |
|-----------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Front axle nut | 100 | 10.0 | 72.5 |
| 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 | 10.0 | 72.5 |
| Engine sprocket nut | 115 | 11.5 | 83.5 |
| Engine sprocket cover bolt | 11 | 1.1 | 8.0 |
| Clutch release cylinder mounting bolt | 10 | 1.0 | 7.5 |
| Rear sprocket nut | 60 | 6.0 | 43.5 |

Brake Control System and Diagnosis

| Fastening part | Tightening torque | | |
|---|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Rear brake master cylinder rod lock-nut | 18 | 1.8 | 13.0 |
| Brake air bleeder valve | 7.5 | 0.75 | 5.5 |
| Front brake master cylinder mounting bolt | 10 | 1.0 | 7.5 |
| Brake hose union bolt | 23 | 2.3 | 17.0 |
| Brake light switch screw | 1.2 | 0.12 | 1.0 |
| Brake lever pivot bolt | 6 | 0.6 | 4.5 |
| Brake lever pivot bolt lock-nut | 6 | 0.6 | 4.5 |
| Rear brake master cylinder mounting bolt | 10 | 1.0 | 7.5 |

Front Brakes

| Fastening part | Tightening torque | | |
|-----------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Caliper mounting bolt | 39 | 3.9 | 28.5 |
| Pad mounting pin | 16 | 1.6 | 11.5 |
| Brake hose union bolt | 23 | 2.3 | 17.0 |
| Brake disc bolt | 23 | 2.3 | 17.0 |

Rear Brakes

| Fastening part | Tightening torque | | |
|-----------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Caliper mounting bolt | 18 | 1.8 | 13.0 |
| Pad mounting pin | 16 | 1.6 | 11.5 |
| Brake hose union bolt | 23 | 2.3 | 17.0 |
| Caliper sliding pin | 33 | 3.3 | 24.0 |
| Brake disc bolt | 23 | 2.3 | 17.0 |

ABS

| Fastening part | Tightening torque | | |
|-------------------------------|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Wheel speed sensor rotor bolt | 6.5 | 0.65 | 5.0 |
| Brake pipe flare nut | 16 | 1.6 | 11.5 |
| IMU bolt | 7 | 0.7 | 5.5 |

Manual Transmission

| Fastening part | Tightening torque | | |
|---|-------------------|-------|--------|
| | N·m | kgf-m | lbf-ft |
| Gearshift cam bearing retainer screw | 8.5 | 0.85 | 6.5 |
| Driveshaft bearing retainer screw | 8.5 | 0.85 | 6.5 |
| Driveshaft oil seal retainer bolt | 10 | 1.0 | 7.5 |
| Countershaft bearing retainer screw | 8.5 | 0.85 | 6.5 |
| GP switch mounting bolt | 6 | 0.6 | 4.5 |
| GP switch lead wire clamp bolt | 6.5 | 0.65 | 5.0 |
| Gearshift link rod lock-nut | 10 | 1.0 | 7.5 |
| Gearshift arm stopper | 19 | 1.9 | 14.0 |
| Gearshift cam stopper bolt | 10 | 1.0 | 7.5 |
| Gearshift cam plate bolt (Up to L6 model) | 10 | 1.0 | 7.5 |
| Gearshift cam plate bolt (From L8 model) | 13 | 1.3 | 9.5 |
| Gearshift cover bolt | 11 | 1.1 | 8.0 |

Clutch

| Fastening part | Tightening torque | | |
|---------------------------------------|-------------------|-------|--------|
| | N·m | kgf·m | lbf·ft |
| Clutch air bleeder valve | 6 | 0.6 | 4.5 |
| Clutch master cylinder mounting bolt | 10 | 1.0 | 7.5 |
| Clutch hose union bolt | 23 | 2.3 | 17.0 |
| Clutch lever pivot bolt | 6 | 0.6 | 4.5 |
| Clutch lever pivot bolt lock-nut | 6 | 0.6 | 4.5 |
| Clutch release cylinder mounting bolt | 10 | 1.0 | 7.5 |
| Clutch sleeve hub nut | 150 | 15.0 | 108.5 |
| Clutch spring set bolt | 10 | 1.0 | 7.5 |
| Clutch cover bolt | 11 | 1.1 | 8.0 |
| Front footrest bracket bolt | 26 | 2.6 | 19.0 |
| Primary drive gear nut | 160 | 16.0 | 116.0 |

Steering / Handlebar

| Fastening part | Tightening torque | | |
|-----------------------------|---|-------|--------|
| | N·m | kgf·m | lbf·ft |
| Handlebar clamp bolt | 23 | 2.3 | 17.0 |
| Throttle case bolt | 3 | 0.3 | 2.5 |
| Handlebar balancer screw | 5.5 | 0.55 | 4.0 |
| Steering stem lock-nut | 80 | 8.0 | 58.0 |
| Steering stem head nut | 90 | 9.0 | 65.0 |
| Front fork upper clamp bolt | 23 | 2.3 | 17.0 |
| Handlebar holder nut | 45 | 4.5 | 32.5 |
| Steering stem nut | 20 N·m (2.0 kgf·m, 14.5 lbf·ft) → turn counterclockwise 0 – 1/4 | | |

Lighting Systems

| Fastening part | Tightening torque | | |
|--------------------------------------|-------------------|-------|--------|
| | N·m | kgf·m | lbf·ft |
| Headlight mounting screw | 2 | 0.2 | 1.5 |
| License plate light mounting nut | 5 | 0.5 | 4.0 |
| Front turn signal light mounting nut | 1.3 | 0.13 | 1.0 |
| Rear turn signal light mounting nut | 1.8 | 0.18 | 1.5 |

Combination Meter / Fuel Meter / Horn

| Fastening part | Tightening torque | | |
|-------------------------|-------------------|-------|--------|
| | N·m | kgf·m | lbf·ft |
| Ring nut | 3 | 0.3 | 2.5 |
| Speedometer screw | 1.5 | 0.15 | 1.0 |
| Speedometer panel screw | 4.5 | 0.45 | 3.5 |

Exterior Parts

| Fastening part | Tightening torque | | |
|--------------------|-------------------|-------|--------|
| | N·m | kgf·m | lbf·ft |
| Sport carrier bolt | 27.5 | 2.75 | 20.0 |
| Rear cowling screw | 5.5 | 0.55 | 4.0 |
| Body cowling screw | 5.5 | 0.55 | 4.0 |
| Clutch cover bolt | 11 | 1.1 | 8.0 |

Special Tools and Equipment

Fuel / Oil / Fluid Recommendation

BENJ31J10308001

Fuel

NOTICE

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

For U.S.A. and Canada

Use unleaded gasoline with an octane rating of 90 AKI or higher.

Unleaded gasoline containing up to 15% MTBE by volume may be used.

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

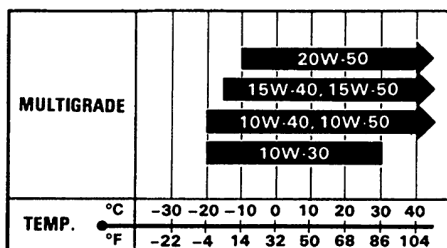
Unleaded gasoline containing up to 5% methanol by volume may be used if it contains appropriate co-solvents and corrosion inhibitors.

Engine Oil

Use engine oils which meet the following requirements.

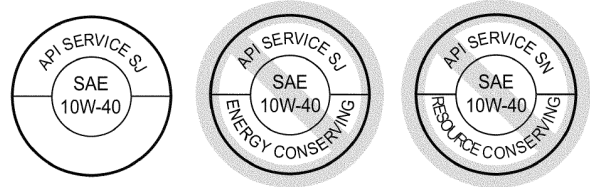
- API service classification: SG or higher
- JASO T903 standard: MA
- Viscosity: SAE 10W-40

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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For U.S.A. and Canada

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.

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.

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.)

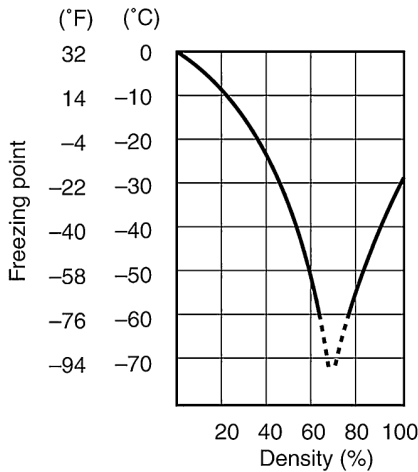
The 50:50 mixture of distilled water and ethylene glycol anti-freeze will provide the optimum corrosion protection and excellent heat protection, and will protect the cooling system from freezing at temperatures above -31 °C (-24 °F).

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

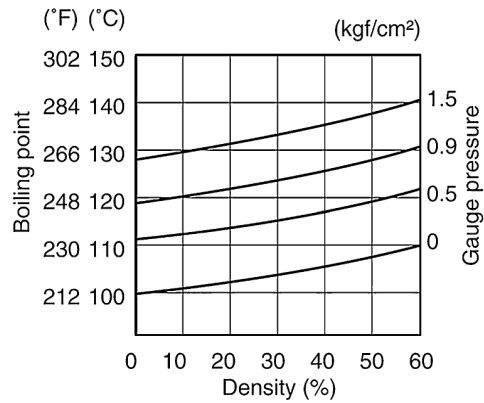


Anti-freeze / Engine coolant

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 dov to freezing point.

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

Fig.2: Engine coolant density-boiling point curve



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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.

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.

Front Fork Oil

Use SUZUKI FORK OIL L-01.

Fork oil 99000-99044-L01 (SUZUKI FORK OIL L-01)

