Features & Specifications
2017 V-Strom 650XT

DL650XAL7

YU1: Champion Yellow No. 2

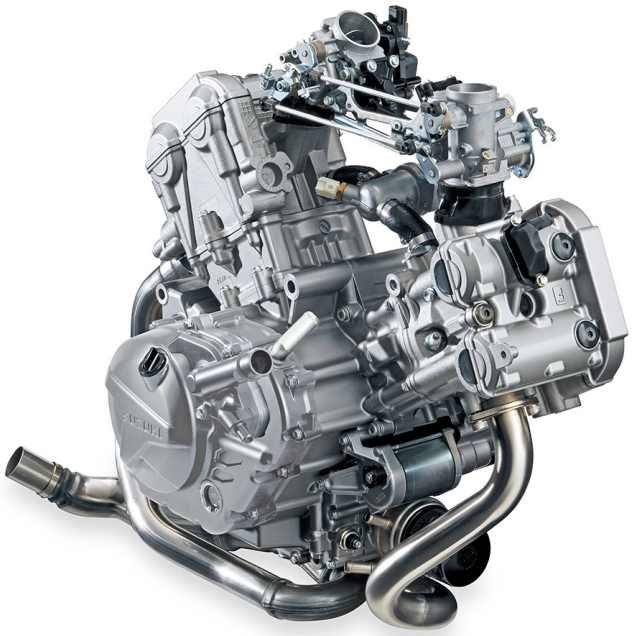
Key Features

- **Updated, 645cc, 90^{O} V-Twin engine features a boost in torque in the low to mid-RPM range, but retains a strong rush of high RPM power that's ideal for any riding mission.**
- **Addition of Suzuki's rider-adjustable Traction Control* system, Easy Start system, Low RPM Assist feature, plus ABS** technology makes a great motorcycle, really incredible.**
- **New Multi-function, illumination adjustable Instrument Panel brings a wealth of information to the rider in a concise manner and helps with setting rider-assist features.**
- **New fairing, with vertically stacked headlights, adjustable windshield, and iconic Suzuki DR-Big styling adds true adventure style and real-world function.**
- **Redesigned chassis has integrated mount points for unified Suzuki V-Strom luggage that's is easy to clip on and off, and keeps the motorcycle trim when ready for touring.**
- **Ready for real adventure, the V-Strom 650XT ABS has aluminum, spoke-style wheels with tubeless radial dual-sport tires, hand guards, and a protective lower engine cowl.**

Overview

Renowned for its versatility, reliability and value, the V-Strom 650 has attracted many riders who use it for touring, commuting, or a fun ride when the spirit moves them. It is a touchstone motorcycle balanced with a natural riding position, comfortable seat and a flexible engine character that produces stress-free riding during brief daily use or a high-mile adventure. The new 2017 V-Strom 650XT ABS now marries the looks of the V-Strom 1000 ABS and the prior V-Strom 650XT, unifying the V-Strom family. This new V-Strom has increased engine performance and great fuel economy while achieving world-wide emission standards. A number of other updates, including weight savings, a thinner chassis, and some adventure-ready extras has resulted in a V-Strom that is more versatile, more controllable, and more accessible to elevate its total performance so it's simply "More V-Strom". And that's what a rider wants; more of a good ride.

Engine Features



- Using 2017 SV650 engineering, the V-Strom's DOHC, liquid-cooled engine has new camshafts to deliver clean, strong power at any RPM.
- New, low-friction resin-coated pistons and SCEM-coated cylinders help delivers high mileage for class-leading touring range.
- A new, sleek two-into-one exhaust system routes below the chassis to reduce weight, centralize mass, and provide space for a narrow tail section (and optional luggage).
- The exhaust system has twin catalyzers and employs O2 feedback to the EFI system to produce optimum combustion efficiency and reduce emissions to an incredibly low level.
- The fuel injection system employs Suzuki's innovative, SDTV (Suzuki Dual Throttle Valve) on new 39mm throttle bodies. The secondary throttle valves are controlled by a servo motor for smooth power delivery.
- New, ten-hole; long-nose type fuel injectors on each throttle body improves fuel atomization for better combustion efficiency and while reducing fuel consumption.
- Suzuki's patented, Throttle-body Integrated Idle Speed Control (TI-ISC) stabilizes the engine idle speed and helps lower emissions. The system is compact and lightweight.
- The TI-ISC on the V-Strom 650 ABS has Suzuki's Low RPM Assist feature that seamlessly adjusts engine speed during take-off and low-speed riding to smooth the power delivery and to help reduce the possibility of the rider stalling the motorcycle.
- The Engine Control Module (ECM) provides state-of-the-art engine management and has enhanced settings to suit the intake and exhaust systems, resulting in better fuel economy and linear throttle response.
- The engine has dual spark technology heads with two, high-energy, slim electrode spark plugs per cylinder, aid in combustion efficiency and power production.
- New to the V-Strom 650XT ABS is Suzuki's advanced Traction Control System* which lets the rider control the throttle with more confidence in various riding conditions. It continuously monitors front and rear wheel speeds, throttle opening, engine speed, and the selected transmission gear to adjust engine output if wheel spin is detected.
- There are three traction control modes (1, 2, and OFF) and the difference between the modes are their sensitivity to road conditions. Mode 1 is lowest sensitivity level most suitable for skilled riders or in conditions that have good road surface grip (riding on good, smooth roads). Mode 2 is highest sensitivity level suitable for road conditions where the grip may be limited (wet or cold surfaces). OFF disengages all traction control features.
- The V-Strom now features the Suzuki Easy Start system which lets the rider start the motorcycle with a momentary press of the start switch without pulling in the clutch lever when the transmission is in neutral.
- The compact radiator is flanked by new-style, wind directing plates that enhance cooling efficiency and direct heat out of the side vents away from the rider's legs.
- The 6-speed transmission suits sporty rides with tight 1st through 5th gear ratios and a tall top gear (6th gear) for highway cruising.
- Low-maintenance, long-life sealed O-ring drive chain is standard.

DL650XAL7

YVB: Glass Sparkle Black

Chassis Features

- New beak-style fairing, with vertically stacked headlights and new mounting structure helps the V-Strom 650XT ABS cut through the wind, protecting the rider in style.
- The new 3-way height-adjustable windscreen was wind-tunnel tested to reduce wind sounds, buffeting and rider fatigue.
- The new fuel tank maintains its 5.3 gallon capacity, but is shaped to be thin at the rear to flow into the slimmer seat which aids the rider in touching the ground at stops.
- The new, spacious two-up seat combines smooth and slip-resistant surfaces, plus an embossed V-Strom logo.
- Lightweight, rigid twin-spar aluminum frame and swingarm contribute to smooth handling performance and excellent stability.
- Spring-preload adjustable 43mm front forks and link-type rear suspension with rebound damping adjustment and hand-operated spring preload adjuster.
- Spoke-style wheels with anodized aluminum rims (gold or black) laced with stainless steels spokes absorb shock from irregular road surfaces well and accept tubeless tires.
- Adventure-spec Bridgestone BATTLAX 19-inch front and 17-inch rear tubeless radial tires are mounted to the spoke-style wheels for good all-around performance.
- Front dual 310mm-disc brakes and a rear 260mm-disc brake deliver controlled stopping power.
- Compact Antilock Brake System (ABS)** system monitors wheel speed to match braking to available traction.
- New lightweight resin luggage rack incorporates easy-to-grasp grab bars and aligns with the passenger section of the seat offering a larger surface for carrying cargo or luggage.
- The V-Strom 650XT ABS is supplied with hand guards and a protective lower engine cowl.
- Even with the new features and engineering, the 2017 V-Strom 650XT ABS's weight was reduced 2.0 pounds as compared to the prior model.

Electrical Features

- The new multi-function instrument panels is similar in appearance to the V-Strom 1000 ABS panel, but has functions unique to the V-Strom 650XT ABS.
- The instrument includes an analog tachometer and brightness-adjustable LCD speedometer and control panel.

Electrical Features *(continued)*

- **LCD readouts include odometer, dual trip meter, traction control modes, gear position, coolant and ambient temperature, fuel consumption, fuel gauge and clock. Switching between readings can be done with the left handlebar switch.**
- **LED indicators include an ABS alert and a freeze warning icon, which, together with the air temperature display, warns of possible icy road conditions.**
- **Strong three-phase charging system supplies the 10Ah maintenance-free battery for easy starting and additional accessory power. A dedicated accessory fuse is located under the seat.**
- **The new, stacked, 65/55W halogen headlamps illuminate the road when your ride stretches into night.**
- **The new LED tail and brake light is bright and vibration resistant. The turn signals use bright amber incandescent bulbs with clear lenses.**
- **A new 12V DC accessory outlet is mounted on the inner dash (was an option on prior model).**

Additional Features

- **Genuine Suzuki Accessories includes side and top cases, engine guards, low and high profile seats, heated grips, hand guards and more.**
- **12-month limited warranty**
- **Coverage period and additional benefits available through 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 DL650XAL7
E-03: USA, E-33: California

Dimensions and curb mass

Item	Specification	Remark
Overall length	2275 mm (89.57 in)	—
Overall width	910 mm (35.8 in)	—
Overall height	1405 mm (55.31 in)	—
Wheelbase	1560 mm (61.42 in)	—
Ground clearance	170 mm (6.69 in)	—
Seat height	835 mm (32.9 in)	—
Curb mass	216 kg (476 lbs)	—

Engine

Item	Specification	Remark
Type	Four-stroke, liquid-cooled, DOHC, 90° V-twin	—
Number of cylinders	2	—
Bore	81.0 mm (3.189 in)	—
Stroke	62.6 mm (2.465 in)	—
Displacement	645 cm^3 (39.4 cu. in)	—
Compression ratio	11.2 : 1	—
Fuel system	Fuel injection	—
Air cleaner	Non-woven fabric element	—
Starter system	Electric	—
Lubrication system	Wet sump	—
Idle speed	1300 ± 100 r/min	—

Drive train

Item		Specification	Remark
Clutch		Wet multi-plate type	—
Transmission		6-speed constant mesh	—
Gearshift pattern		1-down, 5-up	—
Primary reduction ratio		2.088 (71/34)	—
Gear ratios	Low	2.462 (32/13)	—
	2nd	1.778 (32/18)	—
	3rd	1.381 (29/21)	—
	4th	1.125 (27/24)	—
	5th	0.962 (25/26)	—
	Top	0.852 (23/27)	—
Final reduction ratio		3.133 (47/15)	—
Drive chain		RK/525SMOZ8, 118 links	—

Chassis

Item	Specification	Remark
Front suspension	Telescopic, coil spring, oil damped	—
Rear suspension	Link type, coil spring, oil damped	—
Front fork stroke	150 mm (5.91 in)	—
Rear wheel travel	159 mm (6.26 in)	—
Steering angle	40° (right and left)	—
Caster	25° 40’	—
Trail	107 mm (4.21 in)	—
Turning radius	2.7 m (8.9 ft)	—
Front brake	Disc brake, twin	—
Rear brake	Disc brake	—
Front tire size	110/80R19M/C 59V, tubeless	—
Rear tire size	150/70R17M/C 69V, tubeless	—

Specifications DL650XAL7
E-03: USA, E-33: California

Electrical

Item		Specification	Remark
Ignition type		Electronic ignition (transistorized)	—
Spark plug		NGK MR8E-9	—
Battery		12 V 36.0 kC (10 Ah)/10 HR	—
Generator		Three-phase A.C. generator	—
Main fuse		30 A	—
Fuse		15/15/10/15/15/10/3 A	—
ABS fuse		25/15 A	—
Headlight	High beam	12 V 65 W H9	—
	Low beam	12 V 55 W H7	—
Position light		12 V 5 W	—
Brake light/Taillight		LED	—
Turn signal light		12 V 21 W	—
License plate light		12 V 5 W	—
Instrument panel light		LED	—
Neutral indicator light		LED	—
Hi beam indicator light		LED	—
Turn signal indicator light		LED	—
Engine coolant temperature indicator light/Oil pressure indicator light		LED	—
MIL		LED	—
ABS indicator light		LED	—
Freeze indicator light		LED	—
TC indicator light		LED	—

Capacities

Item		Specification	Remark
Fuel tank		20.0 L (5.3 US gal, 4.4 Imp gal)	—
Engine oil	Oil change	2400 ml (2.5 US qt, 2.1 Imp qt)	—
	With filter change	2600 ml (2.7 US qt, 2.3 Imp qt)	—
Engine coolant		Approx. 1700 ml (1.80 US qt, 1.50 Imp qt)	—

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 (if equipped)		Battery voltage	—
PAIR control solenoid valve resistance (if equipped)	20 – 30 °C (68 – 86 °F)	20 – 24 Ω	—

Engine Electrical Devices

Item	Specification	Standard	Limit
IAP sensor #1 power supply voltage		4.75 – 5.25 V	—
IAP sensor #1 output voltage	Idle speed at 1 atm.	Approx. 2.5 V	—
IAP sensor #2 power supply voltage		4.75 – 5.25 V	—
IAP sensor #2 output voltage	Idle speed at 1 atm.	Approx. 2.5 V	—
IAT sensor power supply voltage		4.5 – 5.5 V	—
IAT sensor resistance	0 °C (32 °F)	5400 – 6600 Ω	—
	80 °C (176 °F)	290 – 390 Ω	—
ECT sensor power supply voltage		4.5 – 5.5 V	—
ECT sensor resistance	20 °C (68 °F)	2320 – 2590 Ω	—
	80 °C (176 °F)	310 – 326 Ω	
TP sensor power supply voltage		4.5 – 5.5 V	—
TP sensor output voltage	Closed	1.10 – 1.14 V	—
	Opened	4.34 – 4.54 V	
STP sensor power supply voltage		4.5 – 5.5 V	—
STP sensor output voltage	Closed	0.57 – 0.67 V	—
	Opened	4.4 – 4.6 V	
STVA resistance		Approx. 7 Ω	—
HO2 sensor output voltage	Idle speed	0.90 V or less	—
	5000 r/min	0.90 V or less	
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	1 V or more	—
CKP sensor resistance	25 °C (77 °F)	156 – 234 Ω	—
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		16500 – 22300 Ω	—
ECM power supply voltage		Battery voltage	—

Engine Mechanical

Item	Specification		Standard	Limit
Throttle body I.D. No.			28K2	—
Throttle body bore size			39 mm (1.5 in)	—
Throttle cable play			2.0 – 4.0 mm (0.079 – 0.157 in)	—
Idle speed	When engine warmed		1300 ± 100 r/min	—
Fast idle speed			1500 – 2000 r/min	—
Compression pressure			1300 – 1700 kPa (13.3 – 17.3 kgf/cm^2, 188 – 246 psi)	1100 kPa (11.2 kgf/cm^2, 159 psi)
Compression pressure difference			—	200 kPa (2.0 kgf/cm^2, 29.0 psi)
Cam height	Intake		35.48 – 35.53 mm (1.397 – 1.398 in)	35.18 mm (1.385 in)
	Exhaust		35.68 – 35.73 mm (1.405 – 1.406 in)	35.38 mm (1.393 in)
Camshaft journal oil clearance	Intake		0.027 – 0.069 mm (0.0011 – 0.0027 in)	0.150 mm (0.0059 in)
	Exhaust		0.027 – 0.069 mm (0.0011 – 0.0027 in)	0.150 mm (0.0059 in)
Camshaft journal holder I.D.	Intake		22.007 – 22.028 mm (0.8665 – 0.8672 in)	—
	Exhaust		22.007 – 22.028 mm (0.8665 – 0.8672 in)	
Camshaft journal O.D.	Intake		21.959 – 21.980 mm (0.8646 – 0.8653 in)	—
	Exhaust		21.959 – 21.980 mm (0.8646 – 0.8653 in)	
Camshaft runout	Intake & Exhaust		—	0.10 mm (0.004 in)
Cam chain pin	At arrow “3”		16th pin	—
Valve clearance	When engine cold	Intake	0.10 – 0.20 mm (0.0040 – 0.0078 in)	—
		Exhaust	0.20 – 0.30 mm (0.0079 – 0.0118 in)	
Valve diameter	Intake		31 mm (1.2 in)	—
	Exhaust		25.5 mm (1.00 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 head thickness	Intake		—	0.5 mm (0.02 in)
	Exhaust		—	0.5 mm (0.02 in)
Valve stem deflection	Intake & Exhaust		—	0.35 mm (0.013 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)	—

Item	Specification		Standard	Limit
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	Intake		—	37.1 mm (1.46 in)
	Exhaust		—	37.1 mm (1.46 in)
Valve spring pre-load	When compressed to 33.40 mm (1.315 in)	Intake	127 – 147 N (13.0 – 15.0 kgf, 28.6 – 33.0 lbf)	—
		Exhaust	127 – 147 N (13.0 – 15.0 kgf, 28.6 – 33.0 lbf)	—
Cylinder head distortion			—	0.05 mm (0.0019 in)
Cylinder distortion			—	0.05 mm (0.0019 in)
Cylinder bore			81.000 – 81.015 mm (3.1890 – 3.1895 in)	No nicks or scratches
Piston diameter	Measure at 20 mm (0.79 in) from the skirt end.		80.976 – 81.011 mm (3.1880 – 3.1894 in)	80.880 mm (3.1843 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)
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		1.01 – 1.03 mm (0.0398 – 0.0405 in)	—
	Oil		2.01 – 2.03 mm (0.0792 – 0.0799 in)	—
Piston ring thickness	1st		0.76 – 0.81 mm (0.030 – 0.031 in)	—
			1.08 – 1.10 mm (0.0426 – 0.0433 in)	—
	2nd		0.97 – 0.99 mm (0.0382 – 0.0389 in)	—
Piston ring free end gap	1st		Approx. 6.5 mm (0.26 in)	5.2 mm (0.21 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)

Item	Specification	Standard	Limit
Piston pin bore I.D.		20.002 – 20.008 mm (0.7875 – 0.7877 in)	20.030 mm (0.7885 in)
Piston pin O.D.		19.995 – 20.000 mm (0.7872 – 0.7874 in)	19.980 mm (0.7867 in)
Conrod small end I.D.		20.015 – 20.023 mm (0.7880 – 0.7883 in)	20.040 mm (0.7889 in)
Conrod big end side clearance		0.170 – 0.320 mm (0.0067 – 0.0125 in)	0.5 mm (0.019 in)
Conrod big end width		20.95 – 21.00 mm (0.8248 – 0.8267 in)	—
Conrod big end I.D.		41.000 – 41.016 mm (1.6142 – 1.6148 in)	—
Conrod big end oil clearance		0.032 – 0.056 mm (0.0013 – 0.0022 in)	0.080 mm (0.0031 in)
Crank pin width		42.17 – 42.22 mm (1.661 – 1.662 in)	—
Crank pin O.D.		37.976 – 38.000 mm (1.4952 – 1.4960 in)	—
Crank pin bearing thickness		1.480 – 1.496 mm (0.0583 – 0.0588 in)	—
Crankshaft journal O.D.		41.985 – 42.000 mm (1.6530 – 1.6535 in)	—
Crankshaft journal oil clearance		0.004 – 0.023 mm (0.0002 – 0.0009 in)	0.080 mm (0.0031 in)
Crankcase journal I.D.		46.000 – 46.018 mm (1.8111 – 1.8117 in)	—
Crankcase journal bearing thickness		1.999 – 2.008 mm (0.0787 – 0.0790 in)	—
Crankshaft journal holder width	Right side	19.8 – 19.9 mm (0.780 – 0.783 in)	—
Crankshaft journal width	Right side	20.00 – 20.05 mm (0.7874 – 0.7893 in)	—
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	200 – 600 kPa (2.0 – 6.1 kgf/cm^2, 29.0 – 87.0 psi)	—
Necessary amount of engine oil	Oil change	2400 ml (2.5 US qt, 2.1 Imp qt)	—
	Oil and filter change	2600 ml (2.7 US qt, 2.3 Imp qt)	
	Engine overhaul	3000 ml (3.2 US qt, 2.6 Imp qt)	

Cooling System

Item	Specification	Standard	Limit
Engine coolant	Engine side	Approx. 1700 ml (1.80 US qt, 1.50 Imp qt)	—
	Reserve 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	—

Item	Specification	Standard	Limit
Cooling fan operating temperature	OFF → ON	Approx. 105 °C (221 °F)	—
	ON → OFF	Approx. 99 °C (210 °F)	
Thermostat valve opening temperature		80.5 – 83.5 °C (176.9 – 182.3 °F)	—
Thermostat valve lift	At 95 °C (203 °F)	8.0 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	166 ml (5.61 US oz, 5.84 Imp oz) or more	—
Fuel pressure		289 – 299 kPa (2.9 – 3.0 kgf/cm^2, 41.9 – 43.3 psi)	—

Ignition System

Item	Specification	Standard	Limit
Firing order		1·2	—
Spark plug	Type	NGK MR8E-9	—
	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		150 V or more	—
Ignition coil resistance	Primary	1.45 – 1.96 Ω	—
	Secondary	31730 – 35870 Ω	
Immobilizer antenna power supply voltage (if equipped)		Battery voltage	—

Starting System

Item	Specification	Standard	Limit
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	

Charging System

Item	Specification		Standard	Limit
Battery leakage current			2 mA or less	—
Regulated voltage	Charging output	At 5000 r/min	14 – 15 V	—
Generator coil resistance			0.19 – 0.23 Ω	—
Generator no-load voltage	When engine cold	At 5000 r/min	60 V (AC) or more	—
Reaching time	Standard charging		1.2 A for 5 to 10 hours	—
	Fast charging		5 A for 1 hour	
Generator Max. output	At 5000 r/min		Approx. 390 W	—
Battery	Type designation		FTX12-BS	—
	Capacity		12 V 36.0 kC (10 Ah)/10 HR	

Front Suspension

Item	Specification	Standard	Limit
Front fork inner tube O.D.		43 mm (1.7 in)	—
Front fork oil level	Without spring, inner tube fully compressed	105 mm (4.13 in)	—
Front fork spring free length		466.2 mm (18.35 in)	456 mm (18.0 in)
Front fork oil capacity	Each leg	568 ml (19.21 US oz, 19.99 Imp oz)	—

Rear Suspension

Item	Specification	Standard	Limit
Rear shock absorber spring adjuster		2nd position from softest end	—
Rear shock absorber damping force adjuster	Rebound 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	—	0.5 mm (0.019 in)
	Rear	Axial	—	0.5 mm (0.019 in)
		Radial	—	1.0 mm (0.039 in)
Front wheel hub left end surface to rim distance (DL650XA)			21.95 – 22.95 mm (0.8642 – 0.9035 in)	—
Rear wheel hub right end surface to rim distance			23.9 – 24.9 mm (0.941 – 0.980 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/BATTLAX ADVENTURE A40F F	—
	Rear		BRIDGESTONE/BATTLAX ADVENTURE A40R F	
Tire tread depth	Recommend depth	Front	—	1.6 mm (0.063 in)
		Rear	—	2.0 mm (0.079 in)
Cold inflation tire pressure	Solo riding	Front	225 kPa (2.25 kgf/cm^2, 33 psi)	—
		Rear	250 kPa (2.50 kgf/cm^2, 36 psi)	
	Dual riding	Front	225 kPa (2.25 kgf/cm^2, 33 psi)	—
		Rear	290 kPa (2.90 kgf/cm^2, 42 psi)	
Wheel rim size	Front		19 M/C × MT 2.50	—
	Rear		17 M/C × MT 4.00	

Drive Chain / Drive Train / Drive Shaft

Item	Specification	Standard	Limit
Drive chain	Type	RK/525SMOZ8	—
	Links	118 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)	—
Joint plate distance specification		18.6 – 18.9 mm (0.733 – 0.744 in)	—
Pin end diameter specification		5.45 – 5.85 mm (0.215 – 0.230 in)	—

Brake Control System and Diagnosis

Item	Specification	Standard	Limit
Rear brake pedal height		19.5 – 20.5 mm (0.768 – 0.807 in)	—
Master cylinder bore / piston diameter	Front	Approx. 14 mm (0.55 in)	—
	Rear	Approx. 14 mm (0.55 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. 27 mm (1.1 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. 38.2 mm (1.50 in)	—

ABS

Item	Specification	Standard	Limit
Wheel speed sensor – sensor rotor clearance	Front	0.28 – 1.65 mm (0.0111 – 0.0649 in)	—
	Rear	0.28 – 1.45 mm (0.0111 – 0.0570 in)	—

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. 2	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	5.5 – 5.6 mm (0.217 – 0.220 in)	—
	No. 2	5.5 – 5.6 mm (0.217 – 0.220 in)	
	No. 3	5.5 – 5.6 mm (0.217 – 0.220 in)	
Gearshift fork thickness	No. 1	5.3 – 5.4 mm (0.209 – 0.212 in)	—
	No. 2	5.3 – 5.4 mm (0.209 – 0.212 in)	
	No. 3	5.3 – 5.4 mm (0.209 – 0.212 in)	
Gearshift lever height		20 – 30 mm (0.79 – 1.18 in)	—
GP switch power supply voltage		4.5 – 5.5 V	—
GP switch voltage	1st	Approx. 1.3 V	—
	Neutral	Approx. 5.0 V	
	2nd	Approx. 1.8 V	
	3rd	Approx. 2.5 V	
	4th	Approx. 3.2 V	
	5th	Approx. 4.1 V	
	6th	Approx. 4.6 V	

Clutch

Item	Specification	Standard	Limit
Clutch cable play		10 – 15 mm (0.39 – 0.59 in)	—
Clutch release screw		1 turn counterclockwise	—
Drive plate thickness	No. 1	2.92 – 3.08 mm (0.115 – 0.121 in)	2.62 mm (0.104 in)
	No. 2	2.92 – 3.08 mm (0.115 – 0.121 in)	2.62 mm (0.104 in)
Drive plate claw width	No. 1	13.7 – 13.8 mm (0.540 – 0.543 in)	13.2 mm (0.520 in)
	No. 2	13.7 – 13.8 mm (0.540 – 0.543 in)	13.2 mm (0.520 in)
Driven plate distortion		—	0.10 mm (0.0039 in)
Clutch spring free length		60.6 mm (2.39 in)	57.6 mm (2.27 in)

Steering / Handlebar

Item	Specification	Standard	Limit
Steering tension initial force		2 – 5 N (0.20 – 0.51 kgf, 0.45 – 1.12 lbf)	—

Wiring Systems

Item	Specification		Standard	Limit
Fuse size	Headlight	HI	15 A	—
		LO	15 A	—
	Ignition		10 A	—
	Signal		15 A	—
	Fan		15 A	—
	Fuel		10 A	—
	Main		30 A	—
	P-source		3 A	—
	ABS motor		25 A	—
	ABS valve		15 A	—

Lighting Systems

Item	Specification	Standard	Limit
Headlight	HI	65 W	—
	LO	55 W	—
Position light		12 V 5 W	—
Brake light/Taillight		LED	—
Turn signal light		12 V 21 W × 4	—
License plate light		12 V 5 W	—

Combination Meter / Fuel Meter / Horn

Item	Specification	Standard	Limit
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	—
Engine coolant temperature indicator light/Oil pressure indicator light		LED	—
MIL		LED	—
ABS indicator light		LED	—
Freeze indicator light		LED	—
TC 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	0.71	5.20

Engine Electrical Devices

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
IAT sensor screw	1.3	0.13	0.95
ECT sensor	18	1.8	13.5
TP sensor mounting screw	3.5	0.36	2.60
HO2 sensor	25	2.5	18.5
STP sensor mounting screw	3.5	0.36	2.60

Engine Mechanical

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Air cleaner outlet tube clamp screw	1.5	0.15	1.10
Throttle cable lock-nut	4.5	0.46	3.35
EVAP system purge control solenoid valve bracket screw	5.0	0.51	3.70
EVAP system purge control solenoid valve nut	7.0	0.71	5.20
Intake pipe screw	8.4	0.86	6.20
Cylinder head cover bolt	14	1.4	10.5
Cylinder head bolt (M10)	25 → 42 N·m (2.5 → 4.3 kgf-m, 18.5 → 31.0 lbf-ft)		
Cylinder head bolt (M6) (L70)	10	1.0	7.5
Cylinder head bolt (M6) (L40)	10	1.0	7.5
Cylinder nut	10	1.0	7.5
Camshaft journal holder bolt	10	1.0	7.5
Cam chain tension adjuster bolt	10	1.0	7.5
Cam chain tension adjuster plug	23	2.3	17.0
Crankshaft hole plug	11	1.1	8.5
TDC plug	23	2.3	17.0
Engine mounting bracket bolt	35	3.6	26.0
Engine mounting thrust adjuster	12	1.2	9.0
Engine mounting thrust adjuster lock-nut	45	4.6	33.5
Engine mounting bolt	55	5.6	40.5
Engine mounting bolt	25	2.5	18.5
Engine mounting nut	93	9.5	69.0
Engine mounting nut	55	5.6	40.5
Connector hose union bolt	10	1.0	7.5
Oil gallery plug (M6)	10	1.0	7.5
Cam chain tensioner bolt	10	1.0	7.5
Crankcase bolt (M8) (L80)	26	2.7	19.5
Crankcase bolt (M8) (L55)	26	2.7	19.5
Crankcase bolt (M6)	11	1.1	8.5
Primary drive gear bolt	70	7.1	52.0
Special tool bolt	23	2.3	17.0
Oil gallery plug (M8)	18	1.8	13.5
Oil gallery plug (M12)	21	2.1	15.5
Drain plug	21	2.1	15.5
Oil gallery plug (M16)	35	3.6	26.0
Conrod cap bolt	21 N·m (2.1 kgf-m, 15.5 lbf-ft) → turn clockwise 90°		

Engine Lubrication System

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Oil gallery plug (M12)	21	2.1	15.5
Oil drain plug	21	2.1	15.5
Oil filter	20	2.0	15.0
Oil pressure regulator	28	2.9	21.0
Oil cooler union bolt	70	7.1	52.0
Oil pressure switch	13	1.3	9.5
Oil gallery plug (M8)	18	1.8	13.5
Oil gallery plug (M6)	10	1.0	7.5
Driveshaft oil seal retainer bolt	10	1.0	7.5
Piston cooling jet bolt	10	1.0	7.5
Oil pump mounting bolt	10	1.0	7.5
Oil separator screw	10	1.0	7.5
Transmission oil guide retainer screw	8.4	0.86	6.20

Engine Cooling System

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Water drain bolt	13	1.3	9.5
Radiator under rubber bracket bolt	10	1.0	7.5
Cooling fan assembly mounting bolt	4.9	0.50	3.65
Radiator mounting bolt	10	1.0	7.5
Radiator reservoir tank mounting bolt	10	1.0	7.5
Radiator reservoir tank mounting bracket bolt	5.5	0.56	3.70
Thermostat connector cap bolt	10	1.0	7.5
Water pump case screw	4.5	0.46	3.35

Fuel System

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Fuel tank cap bolt	3.0	0.31	2.25
Fuel tank cover bracket bolt	10	1.0	7.5
Fuel tank front mounting bolt	10	1.0	7.5
Fuel tank rear mounting bolt	23	2.3	17.0
Fuel pump mounting bolt	10	1.0	7.5
Fuel delivery pipe mounting screw	3.5	0.36	2.60

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 mounting bolt	10	1.0	7.5
Starter motor lead wire mounting nut	6.0	0.61	4.45
Starter motor set bolt	5.0	0.51	3.70
Starter motor lead wire and battery (+) lead wire mounting bolt	4.4	0.45	3.25
Starter clutch bolt	25	2.5	18.5

Charging System

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Generator rotor bolt	140	14.3	103.5
Generator cover bolt	10	1.0	7.5
Clutch release arm bolt	9.0	0.92	6.65

Exhaust System

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Exhaust pipe bolt #1 and #2	23	2.3	17.0
Muffler connector bolt	18	1.9	14.0
Muffler support bolt	30	3.1	22.5
Exhaust pipe connector bolt	18	1.9	14.0
Exhaust support bolt	23	2.3	17.0
Exhaust pipe bolt #2	23	2.3	17.0
HO2 sensor bolt	25	2.5	18.5
Exhaust pipe bolt	5.5	0.56	4.05
Exhaust pipe bolt #1	23	2.3	17.0
Muffler sport bolt	30	3.1	22.5

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	21	2.1	15.5
Front fork upper clamp bolt	23	2.3	17.0
Cylinder bolt	20	2.0	15.0

Rear Suspension

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Rear shock absorber lower mounting nut	50	5.1	37.0
Cushion rod mounting nut	78	8.0	57.5
Rear shock absorber upper mounting nut	50	5.1	37.0
Pre-load adjuster bolt	23	2.3	17.0
Cushion lever (front) mounting nut	78	8.0	57.5
Cushion lever (center) mounting nut	78	8.0	57.5
Swingarm pivot shaft	15	1.5	11.0
Swingarm pivot nut	100	10.2	74.0
Swingarm pivot shaft lock-nut	90	9.2	66.5

Wheels and Tires

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Front axle	65	6.6	48.0
Front axle pinch bolt	23	2.3	17.0
Spoke nipple (front wheel)	7.5	0.76	5.55
Spoke nipple (rear wheel)	7.0	0.71	5.20

Drive Chain / Drive Train / Drive Shaft

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Rear axle nut	100	10.2	74.0
Engine sprocket nut	145	14.8	107.0
Engine sprocket cover bolt	5.5	0.56	4.05
Rear sprocket nut	60	6.1	44.5

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	13.5
Front brake air bleeder valve	7.5	0.76	5.55
Front reservoir cap screw	1.5	0.15	1.10
Rear brake air bleeder valve	6.0	0.61	4.45
Rear reservoir cap screw	1.2	0.12	0.90
Front brake master cylinder holder bolt	10	1.0	7.5
Brake hose union bolt	23	2.3	17.0
Brake light switch screw	1.2	0.12	0.90
Brake lever pivot bolt	5.9	0.60	4.35
Brake lever pivot bolt lock-nut	5.9	0.60	4.35
Rear brake master cylinder mounting bolt	10	1.0	7.5
Front footrest bracket bolt	26	2.7	19.5

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
Front brake air bleeder valve	7.5	0.76	5.55
Front brake disc bolt	23	2.3	17.0

Rear Brakes

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Rear brake caliper mounting bolt	22	2.2	16.5
Rear brake pad mounting pin	17	1.7	12.5
Rear brake pad pin plug	2.5	0.25	1.85
Brake hose union bolt	23	2.3	17.0
Rear brake air bleeder valve	6.0	0.61	4.45
Rear brake caliper sliding pin	27	2.8	20.0
Rear brake disc bolt	23	2.3	17.0

ABS

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Front wheel speed sensor rotor bolt	6.3	0.64	4.65
Rear wheel speed sensor rotor bolt	6.3	0.64	4.65
Brake pipe flare nut	16	1.6	12.0

Manual Transmission

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Driveshaft oil seal retainer bolt	10	1.0	7.5
GP switch mounting bolt	6.0	0.61	4.45
Gearshift arm stopper	19	1.9	14.0
Gearshift cam stopper bolt	10	1.0	7.5
Gearshift cam plate bolt	13	1.3	9.5

Clutch

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Clutch release adjuster nut	5.0	0.51	3.70
Clutch lever pivot bolt	6.5	0.66	4.80
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 sleeve hub nut	50	5.1	37.0
Clutch spring bolt	10	1.0	7.5
Clutch cover bolt	10	1.0	7.5
Primary drive gear bolt	70	7.1	52.0

Steering / Handlebar

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Handlebar clamp bolt	23	2.3	17.0
Handlebar balancer screw	5.5	0.56	4.05
Steering stem lock-nut	80	8.2	59.0
Steering stem head nut	90	9.2	66.5
Front fork upper clamp bolt	23	2.3	17.0
Steering stem nut	45 N·m (4.6 kgf-m, 33.5 lbf-ft) → turn counterclockwise 1/4 – 1/2		

Lighting Systems

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Headlight screw	2.0	0.20	1.50
Rear combination light screw	2.5	0.25	1.85
License plate light nut	4.8	0.49	3.55
Front side reflex reflector bolt	10	1.0	7.5
Front side reflex reflector	1.8	0.18	1.35
Rear side reflex reflector nut	1.8	0.18	1.35
License plate bracket nut	5.0	0.51	3.70
Front turn signal light nut	1.3	0.13	0.95
Rear turn signal light nut	1.8	0.18	1.35

Exterior Parts

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Striker support bracket nut	8.8	0.90	6.50
Front fender bolt	10	1.0	7.5
Knuckle cover upper nut	5.9	0.60	4.35
Knuckle cover lower nut	1.7	0.17	1.25
Knuckle cover upper screw	5.5	0.56	4.05
Knuckle cover lower nut	5.9	0.60	4.35
Under cowling front bracket bolt	10	1.0	7.5
Side under cowling bolt	7.0	0.71	5.20

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.

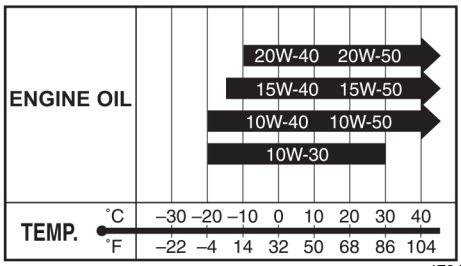
For U.S.A. and Canada
Use unleaded gasoline with an octane rating of 87 AKI or higher.
Unleaded gasoline containing up to 10% ethanol by volume may be used.

Engine Oil / Final Gear Box 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.



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Suzuki does not recommend the use of engine oil which have an “ENERGY CONSERVING” indication in the API service symbol for any of its motorcycles / ATVs.
It 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))

For SUZUKI LONG LIFE COOLANT

NOTICE

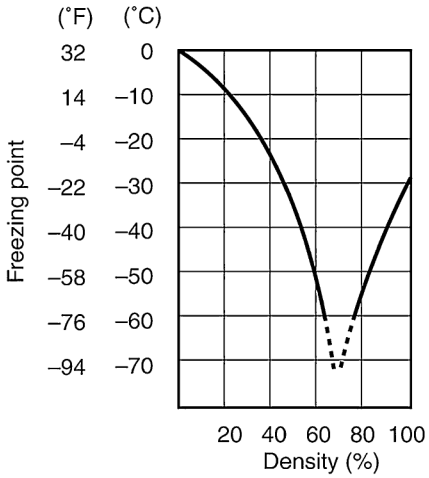
- **Use a high quality ethylene glycol base anti-freeze, mixed with distilled water. Do not mix an alcohol base anti-freeze and different brands of anti-freeze.**
- **Do not put in more than 60% anti-freeze or less than 50%. (Refer to Fig. 1 and 2.)**

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

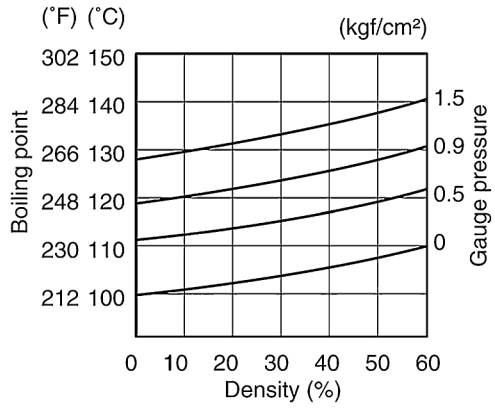
Anti-freeze density	Freezing point
50%	–31 °C (–24 °F)
55%	–40 °C (–40 °F)
60%	–55 °C (–67 °F)

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 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.

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 SS-8.

Fork oil 99000–99001–SA8 (SUZUKI FORK OIL SS-8)