# Features & Specifications 2016 GSX-S1000 ABS



Introduction

- Born on the racetrack and raised on the street, the 2016 GSX-S1000 ABS is derived from the legendary, championship-winning 2005-2008 generation GSX-R1000. The GSX-S1000 ABS carries the spirit of the Suzuki GSX-R to the street, with shared technology and components packaged into a chassis designed specifically for street riding comfort.
- It's more than just an attitude, a spirit, or a lineage though; it's about performance-packed hard parts evolving from one generation to the next. The GSX-S1000 ABS is powered by a 999cc in-line four-cylinder powerplant that's based on the long-stroke GSX-R1000 engine, which makes for ideal street-riding power and torque curve. Focused on making big power through the low and midrange, this engine also uses cams optimized to deliver street-dominating power.
- Equipped with a powerful engine, Suzuki's Advanced Traction Control System\*, and Brembo brakes fitted with a modern Antilock Brake System\*\*, the GSX-S1000 ABS is a street bike packed with some serious performance. Top that performance off with wild, rugged, and aggressive styling, and you have a naked roadster ready to attack and turn heads on the street.

With the GSX-S1000 ABS, Suzuki changes motorcycling for the better, again.

# **Engine Features**

- The strong, four-stroke, liquid-cooled, DOHC, 999cc inline-four engine is designed to provide smooth throttle response and controlled acceleration.
- Long-stroke GSX-R engine design has broad low-to-mid range power and torgue that is ideal for street riding.
- The EFI system uses Suzuki's proprietary, SDTV (Suzuki Dual Throttle Valve) throttle bodies where the secondary throttle valves are controlled by a servo motor for smooth power delivery.
- Long tip, 10-hole fuel injectors on each 44mm throttle body improves fuel atomization while the automatic Idle Speed Control (ISC) improves cold starting and stabilizes the engine idle.
- The under-chassis exhaust employs a Suzuki Exhaust Tuning (SET) servo-controlled butterfly valve to enhance torque, response and acceleration while producing an exciting sound.
- The digital ignition fires iridium type spark plugs to create a condensed and hotter spark, yet last longer.
- Suzuki's advanced traction control system\* lets the rider to control the throttle with more confidence in various riding conditions. As a result, the rider can enjoy sport riding with less stress and fatigue. The system has three easily selectable modes (good road condition, average condition, poor GIVA IS condition "rain").

# **Chassis Features**

- The lightweight twin-spar aluminum frame and swingarm deliver a superb ride normally reserved for supersport machines.
- The reasonable sport riding position is created by a carefully crafted relationship between the Renthal FatBar, footrests and seat.
- Dual front brakes with fully-floating 310mm discs and BREMBO monobloc calipers. A 240mm rear disc brake with single-piston caliper helps make sure you can have controlled stops.
- The antilock braking system<sup>\*\*</sup> (ABS) helps the rider stay in control even during hard braking. It monitors wheel speed 50 times per rotation and matches stopping power to available traction.
- Inverted KYB forks feature spring preload plus rebound and compression damping force adjusters.
- Link-type rear suspension, with a single shock absorber features spring preload that is 7-way adjustable with rebound damping adjustment.
- The GSX-S1000 ABS's naked roadster bodywork is designed to look wild, rugged, and aggressive and to keep the rider comfortable at all times.
- Distinctively shaped headlight nacelle contains a bright 60/55W halogen bulb and combined dual position lights. The tail section houses an integrated LED taillight with clear lens.
- Brightness-controllable instruments feature a prominent bar-style tachometer and digital LCD speedometer readout.
- The display also includes traction control icons, gear-position indicator, coolant temperature, fuel level, selectable odometer/dual-tripmeter/fuel consumption display and clock.



# GSX-S1000AL6

AV4: Glass Sparkle Black / Candy Daring Red

# **Additional Features**

- A variety of Genuine Suzuki Accessories for GSX-S owners are available including a large selection of Suzuki logo apparel.
- 12-month limited warranty
- For more details, please visit <u>www.suzukicycles.com</u>.

\* 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 ride carefully and do not overly rely on ABS.

# **Specifications GSX-S1000AL6** E-03: USA, E-33: California

# **Dimensions and curb mass**

ltem	Specification	Remark
Overall length	2115 mm (83.3 in)	—
Overall width	795 mm (31.3 in)	—
Overall height	1080 mm (42.5 in)	—
Wheelbase	1460 mm (57.5 in)	
Ground clearance	140 mm (5.5 in)	
Seat height	810 mm (31.9 in)	—
Curb mass	209 kg (461 lbs)	E03
	210 kg (463 lbs)	E33

#### Engine

ltem	Specification	Remark	
Туре	Four-stroke, liquid-cooled, DOHC	_	
Number of cylinders	4	_	
Bore	73.4 mm (2.890 in)	_	
Stroke	59.0 mm (2.323 in)	_	
Displacement	999 cm³ (61.0 cu. in)	_	
Compression ratio	12.2 : 1	_	
Fuel system	Fuel injection	_	
Air cleaner	Paper element	_	
Starter system	Electric	_	
Lubrication system	Wet sump	_	
Idle speed	1150 ± 100 r/min	_	

## Drive train

	ltem	Specification	Remark
Clutch		Wet multi-plate type	_
Transmission		6-speed constant mesh	_
Gearshift patte	ern	1-down, 5-up	_
Primary reduc	tion ratio	1.553 (73/47)	_
	Low	2.562 (41/16)	_
	2nd	2.052 (39/19)	_
Gear ratios	3rd	1.714 (36/21)	_
Gear ratios	4th	1.500 (36/24)	_
	5th	1.360 (34/25)	_
	Тор	1.269 (33/26)	_
Final reduction	n ratio	2.588 (44/17)	_
Drive chain		RK525GSH, 116 links	_

# **Specifications GSX-S1000AL6** E-03: USA, E-33: California

#### Chassis

Item	Specification	Remark	
Front suspension	Inverted telescopic, coil spring, oil damped	_	
Rear suspension	Link type, coil spring, oil damped	_	
Front fork stroke	120 mm (4.7 in)	_	
Rear wheel travel	130 mm (5.1 in)	_	
Steering angle	31° (right and left)	— —	
Caster	25°	— —	
Trail	100 mm (3.9 in)	—	
Turning radius	3.1 m (10.2 ft)	_	
Front brake	Disc brake, twin	— —	
Rear brake	Disc brake	— —	
Front tire size	120/70ZR17M/C (58W), tubeless	_	
Rear tire size	190/50ZR17M/C (73W), tubeless	_	

## Electrical

Item	Specification	Remark
Ignition type	Electronic ignition (Transistorized)	_
Spark plug	NGK CR9EIA-9 or DENSO IU27D	_
Battery	12 V 36.0 kC (10 Ah)/10 HR	_
Generator	Three-phase A.C. generator	_
Main fuse	30 A	_
Fuse	10/10/10/10/15 A	_
ABS fuse	20/15 A	—
Headlight	12 V 60/55 W (H4)	—
Brake light/Tail light	LED	
Turn signal light	12 V 21 W x 4	_
License plate light	12 V 5 W	_
Instrument panel light	LED	_
Neutral indicator light	LED	_
High beam indicator light	LED	_
Turn signal indicator light	LED	_
Oil pressure/Coolant temperature	LED	
indicator light	LED	
MIL	LED	—
Traction control system indicator	LED	_
light		
ABS indicator light	LED	—

# Capacities

	ltem	Specification Re	
Fuel tank		17.0 L (4.5 US gal, 3.7 Imp gal)	—
Engine oil	Oil change	2800 ml (3.0 US qt, 2.5 lmp qt)	—
Lingine on	With filter change	3200 ml (3.4 US qt, 2.8 lmp qt)	—
Engine coo	lant	2.8 L (3.0 US qt, 2.5 Imp qt)	—

# Service Data GSX-S1000AL6 E-03: USA, E-33: California

# **Emission Control Devices**

Item	Specification	Standard	Limit
EVAP system purge control solenoid valve power supply voltage	E33	Battery voltage	
EVAP system purge control solenoid valve resistance	E33 20 °C (68 °F)	30 – 34 Ω	
PAIR control solenoid valve power supply voltage		Battery voltage	
PAIR control solenoid valve resistance	20 – 30 °C (68 – 86 °F)	20 – 24 Ω	

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# **Engine Electrical Devices**

ltem	Specification	Standard	Limit
AP sensor power supply voltage		4.75 – 5.25 V	_
AP sensor output voltage	Idle speed at 1 atm.	Approx. 2.8 V	_
IAP sensor power supply voltage		4.75 – 5.25 V	_
IAP sensor output voltage	Idle speed at 1 atm.	Approx. 2.7 V	_
IAT sensor power supply voltage		4.5 – 5.5 V	_
IAT sensor output voltage		0.15 – 4.85 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	_
	–20 °C (–4 °F)	13840 –16330 Ω	
ECT sensor resistance	20 °C (68 °F)	2320 – 2590 Ω	<b>—</b>
	80 °C (176 °F)	310 – 326 Ω	
TP sensor power supply voltage		4.5 – 5.5 V	_
	Closed	1.10 – 1.14 V	
TP sensor output voltage	Opened	Approx. 4.5 V	
STP sensor power supply voltage		4.5 – 5.5 V	_
STP sensor output voltage	Closed	0.57 – 0.67 V	
STP sensor output voltage	Opened	Approx. 4.5 V	
ISC valve resistance	20 °C (68 °F)	Approx. 20 Ω	_
HO2 sensor output voltage	Idle speed	0.6 V or less	
HOZ Sensor output voltage	5000 r/min	0.6 V or more	
HO2 sensor heater power supply		Battery voltage	
voltage		, ,	
HO2 sensor heater resistance	23 °C (73.4 °F)	11.5 – 17.5 Ω	_
CKP sensor peak voltage	When cranking	0.5 V or more	_
CKP sensor resistance	20 °C (68 °F)	Approx. 168 Ω	_
TO sensor power supply voltage		4.5 – 5.5 V	
	Normal	0.4 – 1.4 V	
TO sensor output voltage	Leaning 65°	3.7 – 4.4 V	
TO sensor resistance		16500 – 22300 Ω	_
ECM power supply voltage		Battery voltage	_

# **Engine Mechanical**

Item	Specifica	tion	Standard	Limit
hrottle body I.D. No.	E33		04K1	<u> </u>
	E03		04K0	—
hrottle body bore size			44 mm (1.7 in)	
hrottle cable play			2.0 – 4.0 mm (0.079 – 0.157 in)	—
dle speed	When engine	warmed	1150 ± 100 r/min	—
ast idle speed			1150 – 2000 r/min	
STVA resistance			Approx. 7.8 Ω	—
- ·			1300 – 1700 kPa	1000 kPa
Compression pressure			(13.3 – 17.3 kgf/cm <sup>2</sup> , 188 – 246	(10.2 kgf/cm <sup>2</sup> ,
			psi)	145 psi)
Compression pressure difference			_	200 kPa (2 kgf/
			36.78 – 36.83 mm	cm <sup>2</sup> , 28 psi) 36.48 mm
	Intake	;	(1.448 - 1.450  in)	(1.437 in)
Cam height			36.63 – 36.68 mm	36.33 mm
	Exhaus	st	(1.443 - 1.444  in)	(1.431 in)
			0.032 - 0.066  mm	0.150 mm
	Intake	•	(0.0013 – 0.0025 in)	
Camshaft journal oil clearance			0.032 – 0.066 mm	
	Exhaus	st	(0.0013 – 0.0025 in)	
	· · · ·		24.012 – 24.025 mm	(,
amphaft journal halder I D	Intake Exhaust		(0.9454 – 0.9458 in)	
Camshaft journal holder I.D.			24.012 – 24.025 mm	1 —
	Exhaus	St	(0.9454 – 0.9458 in)	
	Intake		23.959 – 23.980 mm	
Camshaft journal O.D.	IIIIdKe	;	(0.9433 – 0.9440 in)	
Camshan journal O.D.	Exhaus	et	23.959 – 23.980 mm	] —
		51	(0.9433 – 0.9440 in)	
Camshaft runout	Intake & Ex	haust		
				(0.004 in)
Cam chain pin	At arrow	"3"	14th pin	—
	Intake		0.10 – 0.20 mm	
Valve clearance	When engine cold	Exhaust	(0.0040 – 0.0078 in)	
			0.20 – 0.30 mm	
	Intake	<u> </u>	(0.0079 – 0.0118 in) 30 mm (1.2 in)	
√alve diameter	Exhaus		24 mm (0.94 in)	
			24 11111 (0.94 11)	0.05 mm
Valve stem runout	Intake & Ex	haust	_	
Valve head radial runout	Intake & Ex	haust	—	
				(0.0059 in) 0.150 mm (0.0059 in) 
	Intake	;	—	
/alve head thickness				· · · · ·
	Exhaus	St	_	(0.019 in)
			4.475 – 4.490 mm	
(alvo stom O D	Intake	;	(0.1762 – 0.1767 in)	-
alve stem O.D.	<b>Esher</b>	<b>~</b> +	4.455 – 4.470 mm	
	Exhaus	51	(0.1754 – 0.1759 in)	-
	Intake		0.9 – 1.1 mm	
/alve seat width		;	(0.036 – 0.043 in)	
	Exhaust		0.9 – 1.1 mm	
alve seat width			(0.036 – 0.043 in)	

Valve spring free length Valve spring pre-load Cylinder head distortion Cylinder distortion Cylinder distortion Cylinder bore Piston diameter Piston to cylinder clearance Piston ring to groove clearance Piston ring groove width Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.	Intake Exhau Intake Exhau Intake Exhau When mpressed to 33.55 mm (1.321 in) easure at 8 n from the sk 1st 2nd 1st	Ist e Ist Ist Intake Exhaust	$\begin{array}{r} 4.500 - 4.512 \text{ mm} \\ (0.1772 - 0.1776 \text{ in}) \\ 4.500 - 4.512 \text{ mm} \\ (0.1772 - 0.1776 \text{ in}) \\ 0.010 - 0.037 \text{ mm} \\ (0.0004 - 0.0014 \text{ in}) \\ 0.030 - 0.057 \text{ mm} \\ (0.0012 - 0.0022 \text{ in}) \\ \hline \\ $	
/alve guide to valve stem clearance         /alve spring free length         /alve spring pre-load         /alve spring pre-load         Cylinder head distortion         Cylinder distortion         Cylinder distortion         Cylinder bore         Piston diameter         Piston to cylinder clearance         Piston ring to groove clearance         Piston ring to groove width         Piston ring thickness         Piston ring free end gap         Piston ring end gap         Piston pin bore I.D.	Intake Exhau Intake Exhau When mpressed to 33.55 mm (1.321 in) easure at 8 n from the sk 1st 2nd	e ist e ist Intake Exhaust nm (0.3 in)	$\begin{array}{c} 4.500 - 4.512 \text{ mm} \\ (0.1772 - 0.1776 \text{ in}) \\ 0.010 - 0.037 \text{ mm} \\ (0.0004 - 0.0014 \text{ in}) \\ 0.030 - 0.057 \text{ mm} \\ (0.0012 - 0.0022 \text{ in}) \\ \hline \\ \hline \\ \\ \\ \hline \\ \hline \\ \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \\ \hline \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \hline \hline \\ \hline \hline \hline \\ \hline \hline \hline \\ \hline \hline \\ \hline \hline \hline \hline \\ \hline \hline \hline \\ \hline \hline \hline \\ \hline \hline \hline \hline \\ \hline \hline \hline \hline \\ \hline \hline \hline \\ \hline \hline \hline \hline \hline \\ \hline \hline \hline \hline \hline \\ \hline \hline \hline \hline \hline \hline \hline \\ \hline \hline$	(1.47 in) 37.3 mm (1.47 in) 
Valve spring pre-load  Valve spring pre-load  Cylinder head distortion  Cylinder distortion  Cylinder bore  Piston diameter  Piston to cylinder clearance  Piston ring to groove clearance  Piston ring groove width  Piston ring thickness  Piston ring free end gap  Piston ring end gap  Piston pin bore I.D.	Intake Exhau Intake Exhau When mpressed to 33.55 mm (1.321 in) easure at 8 n from the sk 1st 2nd	e ist e ist Intake Exhaust nm (0.3 in)	$\begin{array}{c} 0.010 - 0.037 \text{ mm} \\ (0.0004 - 0.0014 \text{ in}) \\ 0.030 - 0.057 \text{ mm} \\ (0.0012 - 0.0022 \text{ in}) \\ \hline \\ \\ \hline \\ \\ \hline \\ 141 - 163 \text{ N} \\ (14.4 - 16.6 \text{ kgf}, 31.7 - 36.6 \text{ lbs}) \\ 141 - 163 \text{ N} \\ (14.4 - 16.6 \text{ kgf}, 31.7 - 36.6 \text{ lbs}) \\ \hline \\ \\ \hline \\ \\ \hline \\ 73.400 - 73.415 \text{ mm} \\ (2.8898 - 2.8903 \text{ in}) \\ \hline \\ 73.370 - 73.385 \text{ mm} \\ (2.8886 - 2.8891 \text{ in}) \\ 0.025 - 0.035 \text{ mm} \end{array}$	(1.47 in) 37.3 mm (1.47 in) 
Valve spring free length Valve spring pre-load Cylinder head distortion Cylinder distortion Cylinder distortion Cylinder bore Piston diameter Piston to cylinder clearance Piston ring to groove clearance Piston ring groove width Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.	Exhau Intake Exhau When mpressed to 33.55 mm (1.321 in) easure at 8 n from the sk 1st 2nd	Ist Ist Intake Exhaust	$\begin{array}{c} (0.0004-0.0014 \text{ in})\\ 0.030-0.057 \text{ mm}\\ (0.0012-0.0022 \text{ in})\\ \hline \\\\ \hline \\\\ \hline \\ 141-163 \text{ N}\\ (14.4-16.6 \text{ kgf}, 31.7-36.6 \text{ lbs})\\ 141-163 \text{ N}\\ (14.4-16.6 \text{ kgf}, 31.7-36.6 \text{ lbs})\\ \hline \\\\ \hline \\\\ \hline \\ 73.400-73.415 \text{ mm}\\ (2.8898-2.8903 \text{ in})\\ \hline \\ 73.370-73.385 \text{ mm}\\ (2.8886-2.8891 \text{ in})\\ \hline \\ 0.025-0.035 \text{ mm}\\ \end{array}$	(1.47 in) 37.3 mm (1.47 in) 
Valve spring free length Valve spring pre-load Cylinder head distortion Cylinder distortion Cylinder distortion Cylinder bore Piston diameter Piston to cylinder clearance Piston ring to groove clearance Piston ring groove width Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.	Intake Exhau When mpressed to 33.55 mm (1.321 in) easure at 8 n from the sk 1st 2nd	e Ist Intake Exhaust nm (0.3 in)	(0.0012 - 0.0022  in) $$ $141 - 163  N$ $(14.4 - 16.6  kgf, 31.7 - 36.6  lbs)$ $141 - 163  N$ $(14.4 - 16.6  kgf, 31.7 - 36.6  lbs)$ $$ $$ $73.400 - 73.415  mm$ $(2.8898 - 2.8903  in)$ $73.370 - 73.385  mm$ $(2.8886 - 2.8891  in)$ $0.025 - 0.035  mm$	(1.47 in) 37.3 mm (1.47 in) 
Cylinder head distortion Cylinder distortion Cylinder bore	Exhau When mpressed to 33.55 mm (1.321 in) easure at 8 n from the sk 1st 2nd	nm (0.3 in)	(14.4 – 16.6 kgf, 31.7 – 36.6 lbs) 141 – 163 N (14.4 – 16.6 kgf, 31.7 – 36.6 lbs)  73.400 – 73.415 mm (2.8898 – 2.8903 in) 73.370 – 73.385 mm (2.8886 – 2.8891 in) 0.025 – 0.035 mm	(1.47 in) 37.3 mm (1.47 in) 
Valve spring pre-load  Valve spring pre-load  Cylinder head distortion  Cylinder distortion  Cylinder bore  Piston diameter  Piston to cylinder clearance  Piston ring to groove clearance  Piston ring groove width  Piston ring thickness  Piston ring free end gap  Piston ring end gap  Piston pin bore I.D.	When mpressed to 33.55 mm (1.321 in) easure at 8 n from the sk 1st 2nd	Intake Exhaust	(14.4 – 16.6 kgf, 31.7 – 36.6 lbs) 141 – 163 N (14.4 – 16.6 kgf, 31.7 – 36.6 lbs)  73.400 – 73.415 mm (2.8898 – 2.8903 in) 73.370 – 73.385 mm (2.8886 – 2.8891 in) 0.025 – 0.035 mm	37.3 mm (1.47 in) — 0.20 mm (0.0078 in) 0.20 mm (0.0078 in) No nicks or Scratches 73.280 mm (2.8851 in) 0.120 mm
Valve spring pre-load  Cylinder head distortion  Cylinder distortion  Cylinder bore  Piston diameter  Piston to cylinder clearance  Piston ring to groove clearance  Piston ring groove width  Piston ring thickness  Piston ring free end gap  Piston ring end gap  Piston pin bore I.D.	easure at 8 n from the sk	Exhaust	(14.4 – 16.6 kgf, 31.7 – 36.6 lbs) 141 – 163 N (14.4 – 16.6 kgf, 31.7 – 36.6 lbs)  73.400 – 73.415 mm (2.8898 – 2.8903 in) 73.370 – 73.385 mm (2.8886 – 2.8891 in) 0.025 – 0.035 mm	
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Cylinder head distortion Cylinder distortion Cylinder bore Piston diameter Piston to cylinder clearance Piston ring to groove clearance Piston ring groove width Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.	(1.321 in) easure at 8 n from the sk 1st 2nd	nm (0.3 in)	(14.4 – 16.6 kgf, 31.7 – 36.6 lbs) — 73.400 – 73.415 mm (2.8898 – 2.8903 in) 73.370 – 73.385 mm (2.8886 – 2.8891 in) 0.025 – 0.035 mm	(0.0078 in) 0.20 mm (0.0078 in) No nicks or Scratches 73.280 mm (2.8851 in) 0.120 mm
Cylinder distortion Cylinder bore Piston diameter Piston to cylinder clearance Piston ring to groove clearance Piston ring groove width Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.	from the sk 1st 2nd		(2.8898 – 2.8903 in) 73.370 – 73.385 mm (2.8886 – 2.8891 in) 0.025 – 0.035 mm	(0.0078 in) 0.20 mm (0.0078 in) No nicks or Scratches 73.280 mm (2.8851 in) 0.120 mm
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Piston diameter M Piston to cylinder clearance Piston ring to groove clearance Piston ring groove width Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.	from the sk 1st 2nd		(2.8898 – 2.8903 in) 73.370 – 73.385 mm (2.8886 – 2.8891 in) 0.025 – 0.035 mm	Scratches 73.280 mm (2.8851 in) 0.120 mm
Piston diameter Piston to cylinder clearance Piston ring to groove clearance Piston ring groove width Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.	from the sk 1st 2nd		73.370 – 73.385 mm (2.8886 – 2.8891 in) 0.025 – 0.035 mm	73.280 mm (2.8851 in) 0.120 mm
Piston diameter Piston to cylinder clearance Piston ring to groove clearance Piston ring groove width Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.	from the sk 1st 2nd		(2.8886 – 2.8891 in) 0.025 – 0.035 mm	(2.8851 in) 0.120 mm
Piston ring to groove clearance Piston ring groove width Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.	2nd			0.120 mm
Piston ring to groove clearance Piston ring groove width Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.	2nd		(0.0010 – 0.0013 in)	(0.0047 in)
Piston ring groove width Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.	2nd			
Piston ring groove width Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.			—	0.180 mm
Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.				(0.0070 in) 0.150 mm
Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.	1.04		—	(0.0059 in)
Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.	1.51		0.81 – 0.83 mm	
Piston ring thickness Piston ring free end gap Piston ring end gap Piston pin bore I.D.	131		(0.0319 – 0.0326 in)	
Piston ring free end gap	2nd		0.81 – 0.83 mm (0.0319 – 0.0326 in)	—
Piston ring free end gap Piston ring end gap Piston pin bore I.D.	Oil		1.51 – 1.53 mm	
Piston ring free end gap Piston ring end gap Piston pin bore I.D.			(0.0595 – 0.0602 in)	
Piston ring free end gap Piston ring end gap Piston pin bore I.D.	1st		0.77 – 0.79 mm (0.0304 – 0.0311 in)	_
Piston ring end gap			0.77 – 0.79 mm	
Piston ring end gap	2nd		(0.0304 – 0.0311 in)	—
Piston ring end gap	1st		Approx. 9 mm	7.2 mm
Piston pin bore I.D.			(0.4 in) Approx. 8 mm	(0.29 in) 6.4 mm
Piston pin bore I.D.	2nd		(0.3 in)	(0.26 in)
Piston pin bore I.D.	4 - 1		0.06 – 0.18 mm	0.50 mm
Piston pin bore I.D.	1st		(0.0024 – 0.0070 in)	(0.019 in)
· · · · · · · · · · · · · · · · · · ·	2nd		0.06 – 0.18 mm	0.50 mm
· · · · · · · · · · · · · · · · · · ·	2		(0.0024 – 0.0070 in)	(0.019 in)
Piston pin O.D.			16.002 – 16.008 mm (0.6300 – 0.6302 in)	16.030 mm (0.6311 in)
Jiston pin O.D.			15.995 – 16.000 mm	15.980 mm
			(0.6298 – 0.6299 in)	(0.6292 in)
Conrod small end I.D.			16.010 – 16.018 mm	16.040 mm
			(0.6304 –0.6306 in)	(0.6314 in)
Conrod big end side clearance			0.10 – 0.20 mm (0.0040 – 0.0078 in)	0.3 mm (0.011 in)
Conrod big end width			19.95 – 20.00 mm	
or of America, Inc. ai 02/09/2016 7			(0.7855 – 0.7874 in)	

Item	Specification	Standard	Limit
Conred hig and LD		38.000 – 38.016 mm	
Conrod big end I.D.		(1.4961 – 1.4966 in)	_
Conrod big end oil clearance		0.040 – 0.064 mm	0.080 mm
		(0.0016 – 0.0025 in)	(0.0031 in)
Crank pin width		20.10 – 20.15 mm	
		(0.7914 – 0.7933 in)	
Crank pin O.D.		34.976 – 35.000 mm	
		(1.3770 – 1.3779 in)	_
Crank pin bearing thickness		1.476 – 1.492 mm	
		(0.0582 – 0.0587 in)	_
Crankshaft journal O.D.		34.982 – 35.000 mm	
Clarkshalt journal O.D.		(1.3773 – 1.3779 in)	_
Crankshaft journal oil clearance		0.010 – 0.028 mm	0.080 mm
Charlkshalt journal on clearance		(0.0004 – 0.0011 in)	(0.0031 in)
Crankcase journal I.D.		38.000 – 38.018 mm	
Charikease journal 1.D.		(1.4961 – 1.4967 in)	
Crankcase journal bearing thickness		1.492 – 1.507 mm	
Chankease journal bearing thekness		(0.0588 – 0.0593 in)	
	Right side	2.42 – 2.44 mm	
Crankshaft thrust bearing thickness	Right Side	(0.0953 – 0.0960 in)	
	Left side	2.36 – 2.50 mm	_
		(0.0930 – 0.0984 in)	
Crankshaft thrust clearance		0.060 – 0.110 mm	
		(0.0024 – 0.0043 in)	
Crankshaft runout		_	0.05 mm
			(0.0019 in)
Balancer journal oil clearance		0.028 – 0.052 mm	0.080 mm
		(0.0011 – 0.0020 in)	(0.0031 in)
Balancer journal O.D.		22.976 – 22.992 mm	
		(0.9046 – 0.9051 in)	

# **Engine Lubrication System**

Item	Specification	Standard	Limit
Oil pressure	At 60 °C (140 °F),	100 – 400 kPa	
	3000 r/min	(1.0 – 4.1 kgf/cm <sup>2</sup> , 14.5 – 58.0 psi)	
	Oil change	2800 ml (3.0 US qt, 2.5 Imp qt)	
Necessary amount of engine oil	Oil and filter change	3200 ml (3.4 US qt, 2.8 Imp qt)	
	Engine overhaul	3400 ml (3.6 US qt, 3.0 lmp qt)	

# **Cooling System**

ltem	Specification	Standard	Limit	
Engine coolant	Engine side	Approx. 2500 ml (5.28 US qt, 4.40 lmp qt)		
	Reservoir tank side	Approx. 250 ml (0.53 US qt, 0.44 Imp qt)	—	
Radiator cap valve opening pressure		107.9 – 137.3 kPa (1.1 – 1.4 kgf/cm², 15.7 – 19.9 psi)	_	
Cooling fan relay power supply voltage		Battery voltage	_	
Cooling fan operating temperature	$OFF\toON$	Approx. 105 °C (221 °F)		
	$ON\toOFF$	Approx. 100 °C (212 °F)		
Thermostat valve opening temperature		Approx. 82 °C (179.6 °F)		
Thermostat valve lift	95 °C (203 °F)	8 mm (0.3 in) or more	—	1
		GU		K
or of America, Inc. ai 02/09/2016 I other information may change without notice.	8 /12	60	30	

# **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	223 ml (7.55 US oz, 7.85 Imp oz) or more	_
Fuel pressure regulator operating set pressure		289 – 299 kPa (2.95 – 3.04 kgf/cm <sup>2</sup> , 42.0 – 43.3 psi)	_

# **Ignition System**

ltem	Specification		Standard	Limit
Firing order			1.2.4.3	—
Spark plug	Ту	/pe	NGK: CR9EIA-9 / DENSO: IU27D	
Spark plug	G	ар	0.8 – 0.9 mm (0.032 – 0.035 in)	
Spark performance	At 1 atm		8 mm (0.3 in) or more	
Ignition coil primary peak voltage			80 V or more	_
	Primary	10 – 30 °C	1.1 – 1.9 Ω	
Ignition coil resistance		(50 – 86 °F)		
	Seco	ndary	6400 – 9600 Ω	

## **Starting System**

Item	Specification	Standard	Limit
Starter motor brush length		12 mm (0.47 in)	8.5 mm (0.33 in)
Starter relay resistance		3 – 6 Ω	—
	ON (Side-stand retracted)	0.4 – 0.6 V	
Side-stand switch voltage	OFF (Side-stand on the ground)	1.4 V or more	_

# **Charging System**

ltem	Specif	ication	Standard	Limit
Battery leakage current			3 mA or less	—
Regulated voltage	Charging output	At 5000 r/ min	14.0 – 15.5 V	_
Generator coil resistance	20 °C	(68 °F)	0.12 – 0.18 Ω	—
Generator no-load voltage	When engine cold	At 5000 r/ min	65 V (AC) or more	_
Recharging time	Standard	charging	1.2 A for 5 to 10 hours	
Recharging time	Fast ch	narging	5 A for 1 hour	1 —
Generator Max. output	At 500	0 r/min	Approx. 385 W	—
Battery		signation	FT12A-BS	
	Cap	acity	12 V 36.0 kC (10Ah)/10 HR	

# **Exhaust System**

Item	Specification	Standard	Limit
EXCVA position sensor power supply		4.5 – 5.5 V	
voltage		4.3 - 5.3 V	
EXCVA position sensor output	Closed	0.45 – 1.40 V	
voltage	Opened	3.60 – 4.55 V	
EXCVA position sensor resistance	At adjustment position	Approx. 3100 Ω	—

# **Front Suspension**

Item	Specification	Standard	Limit
Front fork inner tube O.D.		43 mm (1.7 in)	—
Front fork oil level	Without spring, outer tube fully compressed	95 mm (3.7 in)	—
Front fork spring free length		271.1 mm (10.67 in)	265 mm (10.5 in)
Front fork oil capacity	Each leg	518 ml (17.52 US oz, 18.23 lmp oz)	_
Front fork spring adjuster		10 mm (0.39 in)	—
Front fork damping force adjuster	Rebound side	8 clicks counterclockwise from stiffest position	
	Compression side	8 clicks counterclockwise from stiffest position	

## **Rear Suspension**

Item	Specification	Standard	Limit
Rear shock absorber spring adjuster		4th position	_
Rear shock absorber damping force adjuster	Rebound side	1 turn counterclockwise from stiffest position	
Swingarm pivot shaft runout		_	0.3 mm (0.011 in)

# Wheels and Tires

ltem	Specif	ication	Standard	Limit	
	Front	Axial &	_	2.0 mm	
Wheel rim runout		Radial		(0.08 in)	
	Rear	Axial &	_	2.0 mm	
		Radial		(0.08 in)	
	Fr	ont		0.25 mm	
Wheel axle runout		Jin	_	(0.010 in)	
	Ba	ear		0.25 mm	
		al	—	(0.010 in)	
Tire size	Fre	ont	120/70ZR17M/C (58W)		
	Re	ear	190/50ZR17M/C (73W)		
Tire type	Front		DUNLOP/D214F M		
Tire type	Rear		DUNLOP/D214 M		
	Front			1.6 mm	
Tire tread depth (Recommended	Front			(0.062 in)	
depth)	De	ear		2.0 mm	
		al	—	(0.078 in)	
	Solo riding	Front	250 kPa (2.50 kgf/cm <sup>2</sup> , 36 psi)		
Cold inflation tire pressure	Solo huing	Rear	290 kPa (2.90 kgf/cm <sup>2</sup> , 42 psi)		
	Dual riding	Front	250 kPa (2.50 kgf/cm <sup>2</sup> , 36 psi)		
	Dual riding	Rear	290 kPa (2.90 kgf/cm <sup>2</sup> , 42 psi)	1 —	
Wheel rim size	Fre	ont	17 M/C x MT 3.50		
	Rear		17 M/C x MT 6.00		

# Drive Chain / Drive Train / Drive Shaft

Item	Specification	Standard	Limit
Drive chain	Туре	RK525GSH	—
	Links	116 links	—
Drive chain 20-pitch length		_	319.4 mm (12.57 in)
Drive chain slack	On side-stand	20 – 30 mm (0.79 – 1.18 in)	_

# **Brake Control System and Diagnosis**

Item	Specification	Standard	Limit
Rear brake pedal height		50 – 60 mm (2.0 – 2.3 in)	—
Master cylinder bore / piston diameter	Front	Approx. 19.1 mm (0.752 in)	
	Rear	Approx. 14.0 mm (0.551 in)	

# **Front Brakes**

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

## **Rear Brakes**

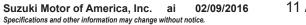
Item	Specification	Standard	Limit
Rear brake disc thickness		5.0 mm (0.20 in)	4.5 mm (0.18 in)
Rear brake disc runout		—	0.30 mm (0.012 in)
Rear brake caliper cylinder bore / piston diameter		Approx. 38.2 mm (1.50 in)	_

# ABS

Item	Specification	Standard	Limit
Wheel speed sensor – sensor rotor	Front	0.38 – 1.05 mm (0.0150 – 0.0413 in)	_
clearance	Rear	0.42 – 1.08 mm (0.0166 – 0.0425 in)	_

# **Manual Transmission**

Item	Specification	Standard	Limit
	No.1	0.1 – 0.3 mm (0.004 – 0.011 in)	0.5 mm
Gearshift fork to groove clearance		0.1 = 0.3 mm ( $0.004 = 0.011$ m)	(0.019 in)
Gearshint fork to groove clearance	No.3	0.1 – 0.3 mm (0.004 – 0.011 in)	0.5 mm
	10.5	0.1 = 0.3 mm ( $0.004 = 0.011$ m)	(0.019 in)
Gearshift fork groove width	No.1	5.0 – 5.1 mm (0.197 – 0.200 in)	_
Gearshint fork groove width	No.3	5.0 – 5.1 mm (0.197 – 0.200 in)	
Gearshift fork thickness	No.1	4.8 – 4.9 mm (0.189 – 0.192 in)	
	No.3	4.8 – 4.9 mm (0.189 – 0.192 in)	—
Gearshift lever height		45 – 55 mm (1.8 – 2.1 in)	—
GP switch power supply voltage		4.5 – 5.5 V	—
GP switch voltage	From 1st to Top	0.6 V or more	_



## Clutch

Item	Specification	Standard	Limit
Clutch lover play		10 – 15 mm	
Clutch lever play		(0.4 – 0.6 in)	_
Clutch release screw		1/2 turn counterclockwise	—
Drive plate thickness		2.72 – 2.88 mm	2.42 mm
Drive plate thickness		(0.107 – 0.113 in)	(0.0953 in)
Drive plate claw width		13.85 – 13.96 mm	13.35 mm
		(0.5453 – 0.5496 in)	(0.5256 in)
Driven plate distortion			0.10 mm
Driven plate distortion			(0.0039 in)
Clutch spring free length		66.7 mm (2.63 in)	63.4 mm
		66.7 mm (2.63 in)	(2.50 in)

# Steering / Handlebar

Item	Specification	Standard	Limit
Stooring tonsion initial force		2 – 5 N	
Steering tension initial force		(0.21 – 0.50 kgf, 0.50 – 1.12 lbf)	

# Wiring Systems

Item	Specification		Standard	Limit
	Headlight	HI	10 A	—
	Headiight	LO	10 A	—
	Ign	tion	10 A	—
Fuse size	Signal		10 A	—
	Fi	lel	10 A	—
	F	an	15 A	—
	Main		30 A	—
	ABS	motor	20 A	—
	ABS	valve	15 A	—

# **Lighting Systems**

Item	Specification	Standard	Limit
Headlight		12 V 60/55 W (H4)	—
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
Speed sensor power supply voltage	Front	Battery voltage	—
(Without ABS)	Rear	Battery voltage	—
Instrument panel light		LED	_
Turn signal indicator light		LED × 2	_
High beam indicator light		LED	—
Neutral indicator light		LED	
Oil pressure indicator light/Engine		LED	
coolant temp. indicator light			
MIL		LED	—
Traction control system indicator light		LED	_
ABS indicator light		LED	—