

Features & Specifications

2019 Boulevard M109R B.O.S.S.



VZR1800BZL9

AJP: Pearl Glacier White / Pearl Vigor Blue

*Shown with optional rear seat cowl

Overview

This is the performance cruiser other bikes wish they were. The dark and muscular M109R B.O.S.S. has a powerful V-twin engine using some of the largest pistons in the industry – a bike that will get your adrenaline flowing whenever you ride. This 109 cubic inch engine is wrapped with aggressive blacked out styling that includes slash-cut mufflers, drag-style bars, a supplied solo seat cowl, and a distinctively shaped headlight nacelle that's uniquely Suzuki. This bike is not just about looks, as stout inverted forks, a hidden single-shock rear suspension, and an ideally designed saddle deliver responsive handling and an exceptionally comfortable ride. Performance never looked so good, or so dark.

Key Features

- Choose from a pair of new, two-tone paint schemes on the 2019 Boulevard M109R B.O.S.S. – Glass Sparkle Black/Candy Daring Red scheme with black wheels or the Pearl Glacier White/Pearl Vigor Blue treatment with metallic blue wheels, matching the bike's graphics. Both high-quality color treatments visually announce that this is a serious muscle cruiser and true to Suzuki's performance heritage.
- The deep, rich paint is flawlessly applied to a long, imposing muscle cruiser that's unlike any other. From the distinctive headlight nacelle to drag-style handlebars and massive 240mm wide rear tire, this motorcycle is a class of one.
- The M109R's bodywork is sleek and purposeful from nose to tail and looks even sleeker when the optional tail cowl is on in place of the passenger seat.
- The 109 cubic inch (1783cc), 54-degree, V-twin engine rumbles through a pair of large-diameter mufflers as it puts power through the shaft drive and down into the 240mm wide rear tire.
- Similar to the brakes from a Hayabusa, the M109R's radial-mounted, dual front brakes deliver sure stopping performance. The large-diameter inverted fork and the 240mm wide rear tire give the bike a tough, aggressive stance that also delivers a smooth, controlled ride.



VZR1800BZL9

AV4: Glass Sparkle Black / Candy Daring Red

**Shown with optional rear seat cowl*

Engine Features

- The 109 cubic inch (1783cc), eight-valve, DOHC, 54-degree, liquid-cooled, V-twin engine is designed to produce a massive tractable power and responsive torque.
- Huge 4.4-inch (112mm) forged aluminum alloy pistons. These are one of the largest reciprocating gasoline engine pistons being used in any production passenger car or motorcycle, while featuring a race-proven design to reduce friction and inertial mass.
- Each of the large cylinders is lined with Suzuki's race proven SCEM (Suzuki Composite Electrochemical Material) for optimum heat transfer, tighter piston-to-cylinder clearances, and reduced weight.
- Suzuki Advanced Sump System (SASS), a compact dry sump lubrication system, provides reduced engine height, a lower crankshaft position, and a lower center of gravity.
- Suzuki's class-leading electronic fuel injection system features the Suzuki Dual Throttle Valve system (SDTV) with 56mm throttle bodies, which maintains optimum air velocity for smooth low- to mid-range throttle response.
- A unique two-stage cam drive system creates a compact cylinder head design, reduces overall engine height, and creates a lower center of gravity.
- A dual spark plug per cylinder ignition system is controlled by a powerful 32-bit ECM for improved combustion efficiency and reduced exhaust emissions.
- A three-piece, 9.5-liter volume airbox (with dual intakes) includes two pleated fabric air cleaner elements located on both sides of the engine.
- The two-into-one-into-two stainless-steel blacked out exhaust system features Suzuki's digitally controlled SET (Suzuki Exhaust Tuning) system for optimum engine performance and a powerful V-twin sound.
- Sculpted engine features blacked out engine covers that complement the visually striking cylinders with symmetrical, highlighted cooling fins.
- A wide-ratio, constant-mesh five-speed transmission features a high fifth gear ratio for relaxed highway cruising.
- Low-maintenance shaft drive is clean-running and has minimal torque reaction as it efficiently transmits power to the massive 18-inch rear tire.

Chassis Features

- A high-tensile steel double-cradle frame is built to comfortably handle all the power and torque while delivering agile handling and a plush, smooth ride.
- The massive, low-profile 240/40 x 18 is the widest rear tire ever used on a Suzuki motorcycle.
- Blacked out, inverted front forks feature race-proven cartridge internals with 46mm stanchion tubes and provide 5.1 inches of smooth wheel travel.
- Cast aluminum alloy swingarm works with a progressive linkage and a single rear shock absorber; adjustable spring preload to suit rider and passenger weight.
- Twin front fully floating disc brakes with dual-piston calipers and a single-disc rear brake with a single dual-piston caliper are ready to haul the bike down from speed.
- Flat-bend, drag-style handlebars are mounted on pull-back risers to be positioned within a short distance from the seat to improve the rider/machine interface, aiding comfort and control.
- The long-stretch fuel tank holds a full 5.2 gallons of fuel (4.9 gallons for California model).
- Tank-mounted analog speedometer and LCD odometer, dual trip meters, fuel gauge, and clock.
- Instrument cluster including a digital tachometer, gear position indicator, and LED indicator lights is integrated into the top of the headlight cowl.
- Both rider and passenger seats are made for comfort, as they allow freedom of movement, accommodate riders of different sizes, and are well-cushioned.
- A sporty solo-seat cover (included) can be quickly swapped for the passenger seat for an even more aggressive look or for use on solo rides.
- The M109R B.O.S.S. (Blacked Out Special Suzuki) features the following:
 - Blacked out exhaust system, clutch cover, magneto cover, cylinder head covers, air cleaner cover, and final drive case.
 - Blacked out handlebars, clutch and brake levers, handlebar switch cases, rearview mirrors, fuel tank/instrument cover, front and rear wheels, front and rear brake calipers, frame side covers, rear fender stays, sidestand, steering stem clamps, and front forks.
 - Clear tail light and turn signal lenses.

Additional Features

- Genuine Suzuki accessory options for the M109R B.O.S.S. include a black-finish engine guard set and trim-fitting, functional saddlebags.
- A variety of Genuine Suzuki Accessories for Boulevard owners are available including a large selection of Suzuki logo apparel.
- 12-month limited warranty
- Coverage extensions and other benefits are available through Suzuki Extended Protection (SEP).
- For more details, please visit www.suzukicycles.com.

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Specifications VZR1800BZL9

E-03: USA, E-33: California

DIMENSIONS AND CURB MASS

Overall length.....	2450 mm (96.5 in)
Overall width	875 mm (34.4 in)
Overall height.....	1130 mm (44.5 in)
Wheelbase.....	1710 mm (67.3 in)
Ground clearance	130 mm (5.1 in)
Seat height.....	705 mm (27.8 in)
Curb mass	347 kg (764 lbs)

ENGINE

Type.....	4-stroke, liquid-cooled, DOHC, 54° V-twin
Number of cylinders.....	2
Bore.....	112.0 mm (4.409 in)
Stroke.....	90.5 mm (3.563 in)
Displacement.....	1783 cm ³ (108.8 cu. in)
Compression ratio.....	10.5 : 1
Fuel system.....	Fuel injection
Air cleaner.....	Non-woven fabric element
Starter system.....	Electric
Lubrication system.....	Semi-Dry sump
Idle speed.....	900 ± 100 r/min

DRIVE TRAIN

Clutch.....	Wet multi-plate type
Transmission.....	5-speed constant mesh
Gearshift pattern.....	1-down, 4-up
Primary reduction.....	1.757 (58/33)
Gear ratios, Low.....	2.187 (35/16)
2nd.....	1.400 (28/20)
3rd.....	1.038 (27/26)
4th.....	0.827 (24/29)
Top.....	0.685 (24/35)
Final reduction ratio.....	2.823 (18/17 × 32/12)
Drive system.....	Shaft Drive

CHASSIS

Front suspension.....	Inverted telescopic, coil spring, oil damped
Rear suspension.....	Link type, coil spring, oil damped
Front suspension stroke.....	130 mm (5.1 in)
Rear wheel travel.....	118 mm (4.6 in)
Caster.....	31° 15'
Trail.....	124 mm (4.88 in)
Steering angle.....	37° (right & left)
Turning radius.....	3.3 m (10.8 ft)
Front brake.....	Disc brake, twin
Rear brake.....	Disc brake
Front tire.....	130/70R18M/C 63V, tubeless
Rear tire.....	240/40R18M/C 79V, tubeless

Specifications VZR1800BZL9

E-03: USA, E-33: California

ELECTRICAL

Ignition type.....	Electronic ignition (Transistorized)
Ignition timing.....	5° B.T.D.C. at 900 r/min
Spark plug.....	NGK CR8EK or DENSO U24ETR
Battery.....	12V 64.8 kC (18 Ah)/10 HR
Generator.....	Three-phase A.C. generator
Main fuse.....	30A
Fuse.....	10/10/10/15/15/15A
Headlight.....	12V 60/55W (H4)
Brake/Tail light.....	LED
Front turn signal light.....	12V 21/5W
Rear turn signal light.....	12V 21W
License plate light.....	12V 5W
Speedometer light.....	LED
Tachometer light.....	LED
High beam indicator light.....	LED
Turn signal indicator light.....	LED
Neutral indicator light.....	LED
Coolant temperature/Oil pressure indicator light.....	LED
Fuel level indicator light.....	LED
FI indicator light.....	LED

CAPACITIES

Fuel tank.....	18.5 L (4.9/4.1 US/Imp gal).....	E-33
	19.5 L (5.2/4.3 US/Imp gal).....	E-03
Engine oils, oil change.....	3400 ml (3.6/3.0 US/Imp qt)	
with filter change.....	3600 ml (3.8/3.2 US/Imp qt)	
overhaul.....	4700 ml (5.0/4.1 US/Imp qt)	
Final gear oil.....	200 - 220 ml (6.8/7.0-7.4/7.7 US/Imp oz)	
Coolant.....	2.7 L (2.9/2.4 US/Imp qt)	

Service Data VZR1800BZL9

E-03: USA, E-33: California

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	42 (1.65)	—
	EX.	38 (1.50)	—
Tappet clearance (when cold)	IN.	0.09 – 0.16 (0.004 – 0.006)	—
	EX.	0.20 – 0.30 (0.008 – 0.012)	—
Valve guide to valve stem clearance	IN.	0.010 – 0.037 (0.0004 – 0.0015)	—
	EX.	0.030 – 0.057 (0.0012 – 0.0022)	—
Valve guide I.D.	IN. & EX.	6.000 – 6.012 (0.2362 – 0.2367)	—
Valve stem O.D.	IN.	5.975 – 5.990 (0.2352 – 0.2358)	—
	EX.	5.955 – 5.970 (0.2344 – 0.2350)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve seat width	IN.	1.1 – 1.3 (0.043 – 0.051)	—
	EX.	1.4 – 1.6 (0.055 – 0.063)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length	IN. & EX.	—	40.7 (1.60)
Valve spring tension	IN. & EX.	127 – 147 N (13.0 – 15.0 kgf, 28.7 – 33.1 lbs) at length 36.6 mm (1.44 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	40.880 – 40.930 (1.6094 – 1.6114)	40.580 (1.5976)
	EX.	40.48 – 40.53 (1.594 – 1.596)	40.18 (1.582)
Camshaft journal oil clearance	IN. & EX.	0.032 – 0.066 (0.0013 – 0.0026)	0.150 (0.0059)

ITEM	STANDARD		LIMIT
Camshaft journal holder I.D.	IN. & EX.	24.012 – 24.025 (0.9454 – 0.9459)	—
Camshaft journal O.D.	IN. & EX.	23.959 – 23.980 (0.9433 – 0.9441)	—
Camshaft runout	IN. & EX.	—	0.10 (0.004)
Cam chain pin (at arrow “3”)	18th pin		—
Cylinder head distortion	—		0.05 (0.002)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT
Compression pressure (Automatic de-comp. actuated)	900 – 1 800 kPa (9.0 – 18.0 kgf/cm ² , 128 – 256 psi)		800 kPa (8.0 kgf/cm ² , 114 psi)
Compression pressure difference	—		200 kPa (2.0 kgf/cm ² , 28 psi)
Piston to cylinder clearance	0.025 – 0.040 (0.0010 – 0.0016)		0.120 (0.0047)
Cylinder bore	112.000 – 112.015 (4.4094 – 4.4100)		Nicks or Scratches
Piston diam.	111.967 – 111.983 (4.4081 – 4.4088) Measure at 10 mm (0.4 in) from the skirt end.		111.880 (4.4047)
Cylinder distortion	—		0.05 (0.002)
Piston ring free end gap	1st	Approx. 15.7 (0.62)	12.6 (0.50)
	2nd	Approx. 14.5 (0.57)	11.6 (0.46)
Piston ring end gap	1st	0.10 – 0.25 (0.004 – 0.010)	0.50 (0.020)
	2nd	0.10 – 0.25 (0.004 – 0.010)	0.50 (0.020)
Piston ring to groove clearance	1st	—	0.180 (0.0071)
	2nd	—	0.150 (0.0059)
Piston ring groove width	1st	0.93 – 0.95 (0.0366 – 0.0374)	—
		1.55 – 1.57 (0.0610 – 0.0618)	—
	2nd	1.21 – 1.23 (0.0476 – 0.0484)	—
	Oil	2.51 – 2.53 (0.0988 – 0.0996)	—
Piston ring thickness	1st	0.86 – 0.91 (0.034 – 0.036)	—
		1.38 – 1.40 (0.054 – 0.055)	—
	2nd	1.17 – 1.19 (0.046 – 0.047)	—

ITEM	STANDARD	LIMIT
Piston pin bore I.D.	23.002 – 23.008 (0.9056 – 0.9058)	23.030 (0.9067)
Piston pin O.D.	22.995 – 23.000 (0.9053 – 0.9055)	22.980 (0.9047)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	23.010 – 23.018 (0.9059 – 0.9062)	23.040 (0.9071)
Conrod big end side clearance	0.100 – 0.200 (0.0039 – 0.0078)	0.30 (0.012)
Conrod big end width	23.95 – 24.00 (0.943 – 0.945)	—
Crank pin width	24.10 – 24.15 (0.9488 – 0.9508)	—
Conrod big end oil clearance	0.032 – 0.056 (0.0013 – 0.0022)	0.080 (0.0031)
Crank pin O.D.	54.976 – 55.000 (2.1644 – 2.1654)	—
Crankshaft journal oil clearance	0.010 – 0.028 (0.0004 – 0.0011)	0.080 (0.0031)
Crankshaft journal O.D.	54.982 – 55.000 (2.1646 – 2.1654)	—
Crankshaft thrust bearing thickness	2.250 – 2.550 (0.0886 – 0.1004)	—
Crankshaft thrust clearance	0.100 – 0.200 (0.0039 – 0.0079)	—
Crankshaft runout	—	0.05 (0.002)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pressure (at 60 °C, 140 °F)	Above 400 kPa (4.0 kgf/cm ² , 57 psi) Below 700 kPa (7.0 kgf/cm ² , 100 psi) at 3 000 r/min	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD		LIMIT
Clutch cable play	10 – 15 (0.4 – 0.6)		—
Clutch release screw	1 turn back		—
Drive plate thickness	No. 1	2.92 – 3.08 (0.115 – 0.121)	2.62 (0.103)
	No. 2	1.92 – 2.08 (0.076 – 0.082)	—
Driven plate thickness	No. 1	2.20 – 2.40 (0.087 – 0.094)	—
	No. 2	3.32 – 3.48 (0.131 – 0.137)	3.17 (0.125)
Driven plate claw width	No. 1	7.85 – 7.96 (0.309 – 0.313)	7.05 (0.278)
	No. 2	7.96 – 8.15 (0.313 – 0.321)	7.16 (0.282)
Driven plate distortion	—		0.10 (0.004)
Clutch spring free length	55.11 (2.170)		52.4 (2.06)

THERMOSTAT + RADIATOR + FAN + COOLANT

ITEM	STANDARD		LIMIT
Thermostat valve opening temperature	Approx. 88 °C (190 °F)		—
Thermostat valve lift	Over 8.0 mm (0.31 in) at 100 °C (212 °F)		—
Engine coolant temperature sensor resistance	20 °C (68 °F)	Approx. 2.45 kΩ	—
	50 °C (122 °F)	Approx. 0.811 kΩ	—
	80 °C (176 °F)	Approx. 0.318 kΩ	—
	110 °C (230 °F)	Approx. 0.142 kΩ	—
Radiator cap valve opening pressure	93 – 123 kPa (0.93 – 1.23 kgf/cm ² , 13.2 – 17.5 psi)		—
Cooling fan operating temperature	OFF → ON	Approx. 105 °C (221 °F)	—
	ON → OFF	Approx. 100 °C (212 °F)	—
Engine coolant type	Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50:50.		—
Engine coolant	Reservoir tank side	Approx. 250 ml (0.3/0.2 US/Imp qt)	—
	Engine side	Approx. 2 450 ml (2.6/2.2 US/Imp qt)	—

DRIVE TRAIN

Unit: mm (in) Expect ratio

ITEM		STANDARD	LIMIT
Primary reduction ratio	E-03, 28 33,43	1.757 (55/55 x 58/33)	—
	Others	1.647 (55/55 x 56/34)	—
Secondary reduction ratio		1.058 (18/17)	
Final reduction ratio		2.666 (32/12)	—
Gear ratio	Low	2.187 (35/16)	—
	2nd	1.400 (28/20)	—
	3rd	1.038 (27/26)	—
	4th	0.827 (24/29)	—
	Top	0.685 (24/35)	—
Shift fork to groove clearance		0.1 – 0.3 (0.004 – 0.012)	0.50 (0.020)
Shift fork groove width		5.0 – 5.1 (0.197 – 0.201)	—
Shift fork thickness		4.8 – 4.9 (0.189 – 0.193)	—
Gearshift lever height		45 – 55 (1.8 – 2.2)	—

DRIVELINE/AXLE

Unit: mm (in)

ITEM	STANDARD/SPECIFICATION	LIMIT
Secondary bevel gear backlash	0.03 – 0.15 (0.001 – 0.006)	—
Final bevel gear backlash	0.08 – 0.16 (0.003 – 0.006)	—
Damper spring free length	—	64.6 (2.54)
Final gear oil type	Hypoid gear oil SAE #90, API grade GL-5	—
Final gear oil capacity	200 – 220 ml (6.8/7.0 – 7.4/7.7 US/lmp oz)	—

INJECTOR + FUEL PUMP + FUEL PRESSURE REGULATOR

ITEM	SPECIFICATION	NOTE
Injector resistance	11 – 13 Ω at 23 °C (73 °F)	
Fuel pump discharge amount	168 ml and more (5.7/5.9 US/lmp oz) for 10 seconds at 300 kPa (3.0 kgf/cm ² , 43 psi)	
Fuel pressure regulator operating set pressure	Approx. 300 kPa (3.0 kgf/cm ² , 43 psi)	

THROTTLE BODY

ITEM	SPECIFICATION
I.D. No.	48G3 (For E-33), 48G2 (Others)
Bore size	56 mm
Idle r/min	900 \pm 100 r/min/Warmed engine
Throttle cable play	2.0 – 4.0 mm (0.08 – 0.16 in)

FI-SENSORS

ITEM	SPECIFICATION		NOTE
CKP sensor resistance	190 – 290 Ω		
CKP sensor peak voltage	1.5 V and more		When cranking
IAP sensor input voltage (F & R)	4.5 – 5.5 V		
IAP sensor output voltage (F & R)	Approx. 2.6 V at idle speed		
TP sensor input voltage	4.5 – 5.5 V		
TP sensor resistance	Closed	Approx. 1.1 k Ω	
	Opened	Approx. 4.3 k Ω	
TP sensor output voltage	Closed	Approx. 1.1 V	
	Opened	Approx. 4.3 V	
ECT sensor input voltage	4.5 – 5.5 V		
ECT sensor output voltage	0.15 – 4.84 V		
ECT sensor resistance	Approx. 2.45 k Ω at 20 °C (68 °F)		
IAT sensor input voltage	4.5 – 5.5 V		
IAT sensor output voltage	0.15 – 4.84 V		
IAT sensor resistance	Approx 2.45 k Ω at 20 °C (68 °F)		
TO sensor resistance	16.5 – 22.3 k Ω		
TO sensor voltage	Normal	0.4 – 1.4 V	
	Leaning	3.7 – 4.4 V	When leaning 65°
GP switch voltage	0.6 V and more		From 1st to top
Injector voltage	Battery voltage		
Ignition coil primary peak voltage	250 V and more		When cranking
Ignition coil/Plug cap primary peak voltage	80 V and more		When cranking
STP sensor input voltage	4.5 – 5.5 V		
STP sensor resistance	Closed	Approx. 0.6 k Ω	
	Opened	Approx. 4.2 k Ω	
STP sensor output voltage	Closed	Approx. 0.6 V	
	Opened	Approx. 4.2 V	
STV actuator resistance	Approx. 7 Ω		
EXCVA position sensor input voltage	4.5 – 5.5 V		
EXCVA position sensor resistance	Approx. 3.1 k Ω		At adjustment position
EXCVA position sensor output voltage	Closed	0.5 – 1.5 V	
	Opened	3.5 – 4.5 V	
Oxygen sensor output voltage	0.4 V and less at idle speed		If equipped
	0.6 V and more at 3 000 r/min		If equipped
Oxygen sensor resistance	4.0 – 5.5 Ω at 23 °C (73.4 °F)		If equipped
PAIR solenoid valve resistance	18 – 22 Ω at 20 – 30 °C (68 – 86 °F)		

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION		NOTE
Firing order		1-2		
Spark plug		Type	NGK: CR8EK DENSO: U24ETR	
		Gap	0.6 – 0.7 (0.024 – 0.028)	
Spark performance		Over 8 (0.3) at 1 atm.		
CKP sensor resistance		190 – 290 Ω		BI – G
Ignition coil resistance		Primary	1.8 – 3.0 Ω	⊕ tap – ⊖ tap
		Secondary	16 – 26 kΩ	⊖ tap – Plug cap
Ignition coil/Plug cap resistance		Primary	1.1 – 1.9 Ω	⊕ tap – ⊖ tap
		Secondary	10.8 – 16.2 kΩ	Plug cap – ⊖ tap
CKP sensor peak voltage		1.5 V and more		⊕ BI ⊖ G
Ignition coil primary peak voltage		250 V and more		Front ⊕: G ⊖: Ground Rear ⊕: Y ⊖: Ground
Ignition coil/Plug cap primary peak voltage		80 V and more		Front ⊕: B ⊖: Ground Rear ⊕: W/BI ⊖: Ground
Generator coil resistance		0.2 – 1.5 Ω		B – B
Generator Max. output		Approx. 400 W at 5 000 r/min		
Generator no-load voltage (When engine is cold)		70 V (AC) and more at 5 000 r/min		
Regulated voltage		14.0 – 15.5 V at 5 000 r/min		
Starter relay resistance		3 – 6 Ω		
Battery		Type designation	FTZ16-BS	
		Capacity	12 V 64.8 kC (18 Ah)/10 HR	
Fuse size		Headlight	HI	10 A
			LO	10 A
		Fuel		10 A
		Ignition		15 A
		Turn signal		15 A
		Fan motor		15 A
		Main		30 A
Starter motor brush length		Standard	12.5 (0.49)	
		Limit	6.0 (0.24)	

WATTAGE

Unit: W

ITEM		SPECIFICATION
		E-03, 33
Headlight	HI	60
	LO	55
Brake light/Taillight		LED
Front turn signal light/Position light		21/5
Rear turn signal light		21
Speedometer		LED
Tachometer		LED
Turn signal indicator light		LED
High beam indicator light		LED
Neutral indicator light		LED
Fuel level indicator light		LED
Coolant temperature/Oil pressure indicator light		LED
FI indicator light		LED
License light		5

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD		LIMIT	
Rear brake pedal height		15 – 25 (0.6 – 1.0)		—	
Brake disc thickness		Front	5.0 ± 0.2 (0.197 ± 0.008)	4.5 (0.18)	
		Rear	7 ⁰ _{-0.4} (0.276 _{-0.016})	6.3 (0.25)	
Brake disc runout (Front & Rear)		—		0.30 (0.012)	
Master cylinder bore		Front	15.870 – 15.913 (0.6248 – 0.6265)	—	
		Rear	14.000 – 14.043 (0.5512 – 0.5529)	—	
Master cylinder piston diam.		Front	15.827 – 15.854 (0.6231 – 0.6242)	—	
		Rear	13.957 – 13.984 (0.5495 – 0.5506)	—	
Brake caliper cylinder bore		Front	Leading	30.280 – 30.356 (1.1921 – 1.1951)	—
			Trailing	34.010 – 34.086 (1.3390 – 1.3420)	—
		Rear	Leading & Trailing	30.230 – 30.306 (1.1902 – 1.1931)	—
Brake caliper piston diam.		Front	Leading	30.150 – 30.200 (1.1870 – 1.1890)	—
			Trailing	33.884 – 33.934 (1.3340 – 1.3360)	—
		Rear	Leading & Trailing	30.150 – 30.200 (1.1870 – 1.1890)	—
Brake fluid type		DOT 4		—	
Wheel rim runout (Front & Rear)		Axial	—	2.0 (0.08)	
		Radial	—	2.0 (0.08)	
Wheel axle runout		Front	—	0.25 (0.010)	
		Rear	—	0.25 (0.010)	
Wheel rim size		Front	18M/C × MT 3.50	—	
		Rear	18M/C × MT 8.50	—	
Tire size		Front	130/70R18M/C 63V, tubeless	—	
		Rear	240/40R18M/C 79V, tubeless	—	
Tire type		Front	DUNLOP: D221FA	—	
		Rear	DUNLOP: D221	—	
Tire tread depth		Front	—	1.6 (0.06)	
		Rear	—	2.0 (0.08)	

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT
Front fork stroke	130 (5.1)	—
Front fork spring free length	390 (15.4)	382 (15.0)
Front fork inner tube O.D.	46 (1.8)	—
Front fork oil level (without spring, inner tube fully compressed)	115 (4.5)	—
Front fork oil type	SUZUKI FORK OIL L01 or an equivalent fork oil	—
Front fork oil capacity (each leg)	718 ml (24.3/25.3 US/Imp oz)	—
Rear shock absorber spring adjuster	4/7	—
Rear wheel travel	118 (4.6)	—
Swingarm pivot shaft runout	—	0.3 (0.01)

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kgf/cm ²	psi	kPa	kgf/cm ²	psi
FRONT	250	2.50	36	250	2.50	36
REAR	290	2.90	42	290	2.90	42

FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Use only unleaded gasoline of at least 90 pump octane (R/2 + M/2). Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.	E-03, 33
	Gasoline used should be graded 95 octane or higher. An unleaded gasoline is recommended.	The others
Fuel tank capacity	18.5 L (4.9/4.1 US/Imp gal)	E-33
	19.5 L (5.2/4.3 US/Imp gal)	E-03
Engine oil type	SAE 10W-40, API SF/SG or SH/SJ with JASO MA	
Engine oil capacity	Change	3 400 ml (3.6/3.0 US/Imp qt)
	Filter change	3 600 ml (3.8/3.2 US/Imp qt)
	Overhaul	4 700 ml (5.0/4.1 US/Imp qt)

TIGHTENING TORQUE: ENGINE

ITEM		N-m	kgf-m	lbf-ft	
Cylinder head cover bolt		11	1.1	8.0	
Cylinder head cover cap bracket bolt		11	1.1	8.0	
Cylinder head bolt	M: 6	11	1.1	8.0	
	M: 8	26	2.6	19.0	
	M: 10	Initial	25	2.5	18.0
		Final	42	4.2	30.5
Cylinder nut		13	1.3	9.5	
Cylinder head plug (Water jacket plug)		26	2.6	19.0	
Camshaft housing bolt		11	1.1	8.0	
Sprocket cam chain drive bolt		85	8.5	61.5	
Cam chain tension No.1 adjuster bolt		10	1.0	7.0	
Cam chain tension No.2 adjuster bolt		10	1.0	7.0	
Cam chain tension adjuster cap bolt		23	2.3	16.5	
Cam chain tensioner bolt (No.1 & No.2)		18	1.8	13.0	
Cam chain tensioner No.2 nut		10	1.0	7.0	
Cam chain guide No.1 bolt		18	1.8	13.0	
Exhaust pipe bolt		23	2.3	16.5	
Muffler mounting bolt and nut		23	2.3	16.5	
Muffler cover band screw (For E-38)		1.5	0.15	1.0	
Oxygen sensor (For E-02, 19, 24, 38, 50, 51)	#1 & #2	48	4.8	34.5	
Spark plug		11	1.1	8.0	
Primary driven gear bolt		95	9.5	68.5	
Starter clutch bolt		25	2.5	18.0	
Crank balancer drive gear bolt		24	2.4	17.5	
Crank balancer driven gear bolt	M: 6	10	1.0	7.0	
	M: 8	25	2.5	18.0	
Conrod bearing cap bolt	Initial	35	3.5	25.5	
	Final	After tightening to the above torque, tighten 1/4 of a turn (90°)			
Oil drain plug		23	2.3	16.5	
Crankcase bolt	M: 6	11	1.1	8.0	
	M: 8	26	2.6	19.0	
	M: 10	Initial	30	3.0	21.5
		Final	50	5.0	36.0
Oil gallery plug	M: 6	10	1.0	7.0	
	M: 10	16	1.6	11.5	
	M: 12	21	2.1	15.0	
	M: 14	25	2.5	18.0	
	M: 16	35	3.5	25.5	
Oil cooler union bolt		70	7.0	50.5	
Oil pressure switch		14	1.4	10.0	
Oil pressure switch lead wire screw		1.5	0.15	1.0	
Clutch sleeve hub nut		95	9.5	68.5	

ITEM	N-m	kgf-m	lbf-ft
Gearshift cam stopper plate bolt	13	1.3	9.5
Gearshift arm stopper bolt	19	1.9	13.5
Gearshift cam stopper bolt	10	1.0	7.0
Gearshift lever shaft	50	5.0	36.0
Gearshift fork shaft retainer plug	35	3.5	25.5
Generator cover plug	16	1.6	11.5
Generator rotor bolt	160	16.0	115.5
Generator stator bolt	11	1.1	8.0
Starter motor bolt	6	0.6	4.5
Starter motor lead wire nut	6	0.6	4.5
Generator lead wire clamp bolt	11	1.1	8.0
Gear position switch bolt	6.5	0.65	4.5
Speed sensor bolt	10	1.0	7.0
Engine oil drain plug	23	2.3	16.5
Oil filter	20	2.0	14.5
Engine mounting bracket bolt (Rear)	23	2.3	16.5
Engine mounting nut	55	5.5	40.0

DRIVELINE/AXLE

ITEM	N-m	kgf-m	lbf-ft
Secondary drive gear bolt	160	16.0	115.5
Secondary driven bearing stopper	105	10.5	76.0
Secondary driven gear coupling nut	95	9.5	68.5
Secondary driven gear case bolt	26	2.6	19.0
Secondary driven gear bearing housing bolt	28	2.8	20.0
Final gear case nut	40	4.0	29.0
Final drive gear coupling nut	100	10.0	72.5
Final drive bearing stopper	110	11.0	79.5
Final driven gear bearing case bolt	M: 8	23	16.5
	M: 10	50	36.0
Final gear case oil drain plug	23	2.3	16.5

FI SYSTEM AND INTAKE AIR SYSTEM

ITEM	N-m	kgf-m	lbf-ft
CKP sensor mounting bolt	6.5	0.65	4.5
Fuel pump mounting bolt	10	1.0	7.0
TPS and STPS mounting screw	3.5	0.35	2.5
Fuel delivery pipe mounting screw	5	0.5	3.5
EXCVA pulley mounting bolt	5	0.5	3.5

COOLING SYSTEM

ITEM	N·m	kgf-m	lbf-ft
Impeller securing bolt	8	0.8	6.0
Water pump mounting bolt	10	1.0	7.0
ECT sensor	18	1.8	13.0

CHASSIS

ITEM	N·m	kgf-m	lbf-ft
Handlebar clamp bolt	23	2.3	16.5
Handlebar holder bolt	85	8.5	61.5
Handlebar bracket bolt	23	2.3	16.5
Front fork upper and lower clamp bolt	23	2.3	16.5
Front fork cap bolt	23	2.3	16.5
Front fork damper rod bolt	40	4.0	29.0
Front fork inner rod lock nut	15	1.5	11.0
Steering stem head nut	90	9.0	65.0
Front axle	100	10.0	72.5
Front axle pinch bolt	23	2.3	16.5
Brake disc bolt (Front & Rear)	23	2.3	16.5
Front brake caliper pad mounting pin	15	1.5	11.0
Front brake caliper housing bolt	22	2.2	16.0
Rear brake caliper bracket mounting bolt	80	8.0	58.0
Brake caliper mounting bolt (Front & Rear)	39	3.9	28.0
Brake caliper air bleeder valve (Front & Rear)	7.5	0.75	5.5
Brake hose union bolt (Front & Rear)	23	2.3	16.5
Brake master cylinder mounting bolt (Front & Rear)	10	1.0	7.0
Brake pedal boss bolt	16	1.6	11.5
Frame down tube bolt (Front & Rear)	50	5.0	36.0
Seat rail bolt	50	5.0	36.0
License light	5	0.5	3.5
Front footrest bolt RH	60	6.0	43.5
Front footrest bolt LH	50	5.0	36.0
Swingarm pivot shaft	100	10.0	72.5
Rear cushion lever nut (Upper)	110	11.0	79.5
Rear cushion lever nut (Lower)	85	8.5	61.5
Rear cushion rod nut	110	11.0	79.5
Rear shock absorber nut (Front & Rear)	45	4.5	32.5
Rear axle nut (For E-03, 28, 33)	100	10.0	72.5
Rear axle nut (For others)	110	11.0	79.5
Rear master cylinder rod lock nut	18	1.8	13.0