

Features & Specifications

2018 Boulevard M90



VZ1500L8

BN8: Metallic Matte Black/Metallic Oort Gray No. 3

Key Features

- 1462cc, 4-stroke, 2-cylinder, liquid-cooled, OHC engine.
- Muscle styling with blacked out components and a wide rear fender covering a massive 200 section rear tire.
- Wide, comfortable seat with a low seat height of 28.2 inches.

New Feature

- New, metallic gray and black color with distinctive graphics suit the M90's powerful capability.

Engine Features

- Potent 1462cc long-stroke, liquid-cooled, 4-valves-per-cylinder V-Twin engine is built to deliver massive torque while providing good fuel economy.
- Smooth black finish on the engine and air cleaner covers complements the muscular presence of the V-twin's finned cylinders.
- Large flywheels help smooth out low rpm power pulses, as does a spring loaded primary drive damper bolted to the end of the crankshaft.
- To reduce mechanical noise, each cylinder head's cam cover is separated from the cam bearing caps, and a rubber gasket is used between the cylinder head and the cam cover.
- A spring loaded scissor type split primary drive gear mounted on the crankshaft also reduces mechanical noise.
- Each aluminum alloy cylinder is plated with SCEM (Suzuki Composite Electrochemical Material) nickel phosphorus silicon carbide coating which reduces friction and increases heat transfer, durability and ring sealing.
- Hard, smooth chrome-nitride Physical Vapor Deposition (PVD)-coated upper-compression and oil-control piston rings reduce friction and improve sealing.
- Suzuki's class-leading electronic fuel injection system features the Dual Throttle Valve (SDTV) as well as a 32-bit engine management system to provide smooth throttle response and fuel efficiency.
- Multi-hole-type fuel injectors deliver a fine spray for a powerful yet fuel-efficient operation.
- Dual spark plugs for each cylinder contribute to proper ignition and efficient fuel economy.

- An automatic Idle Speed Control (ISC) system improves cold starts and stabilizes an idle engine under various conditions.
- Chromed dual-exhaust with equal-length head pipes for excellent power delivery is mounted on the right side of the engine, and provide a deep, rumbling exhaust note.
- Effective engine management system and emissions control measures allow the M90 to meet latest emission standards.
- Power is delivered through a wide ratio five speed transmission and a shock reducing damper, through a clean running, reliable drive shaft to the rear wheel.
- Suzuki Clutch Assist System (SCAS) makes for efficient clutch operation and a lighter pull.

Chassis Features

- Suzuki performance-cruiser styling is sleek and flowing throughout from the distinctive headlight cowl to the tapered tail section.
- Steel tube frame with a hidden rear shock absorber, creates a muscular, rigid hard-tail look.
- The coil-over 46mm rear shock is hidden so the ride is smooth and controlled.
- The large diameter, blacked-out inverted forks feature 43mm inner tubes with 5.1 inches of wheel travel to soak up road imperfections and handle the powerful front brakes.
- Dual fully floating 290mm front disc brakes with dual-piston calipers and a 275mm rear disc brake with a single dual-piston caliper are ready to haul the bike down from speed.
- Cast-aluminum 16-inch front and 15-inch rear wheels, with a seamless black finish.
- Wide 120/70 ZR18 front and 200/50 ZR17 rear Bridgestone radial tires are specifically for the M90.
- 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 stretched fuel tank holds a full 4.76 gallons of fuel.
- Wide, long, well-padded seat interfaces with the comfortable passenger seat that can be easily replaced with an optional tail section cover for solo rides.
- Multi-reflector headlight with a 60/55W halogen high/low-beam bulb.
- LED taillight with fisheye fresnel-cut smoked red lens. Bullet turn signals have unique vertical slots.
- Distinctive instrument cluster is integrated into the headlight cowl.
- Instrumentation features a stepping-motor-driven analog speedometer and a bar-section fuel gauge that's always on display.
- Long, cast sidestand is designed and positioned to help make it easier to move the parked bike up off the stand.

Additional Features

- Optional single seat cowl can replace the passenger seat for an even more aggressive look or for use on solo rides.
- Genuine Suzuki accessory options for the M50 include clean-fitting, functional saddlebags.
- More Genuine Suzuki Accessories for Boulevard owners are available including a large selection of Suzuki logo apparel.
- 12-month limited warranty
- For more details, please visit www.suzukicycles.com.

Specifications VZ1500L8

E-03: USA, E-33: California

DIMENSIONS AND CURB MASS

Overall length.....	2390 mm (94.1 in)
Overall width.....	870 mm (34.3 in)
Overall height.....	1100 mm (43.3 in)
Wheelbase.....	1690 mm (66.5 in)
Ground clearance.....	145 mm (5.7 in)
Seat height.....	716 mm (28.2 in)
Curb mass.....	328 kg (723 lbs)

ENGINE

Type.....	4-stroke, liquid-cooled, OHC, 54° V-twin
Number of cylinders.....	2
Bore.....	96.0 mm (3.780 in)
Stroke.....	101.0 mm (3.976 in)
Displacement.....	1462 cm ³ (89.2 cu. in)
Compression ratio.....	9.5 : 1
Fuel system.....	Fuel injection
Air cleaner.....	Paper element
Starter system.....	Electric
Lubrication system.....	Wet sump
Idle speed.....	1000 ± 100 r/min

DRIVE TRAIN

Clutch.....	Wet multi-plate type
Transmission.....	5-speed constant mesh
Gearshift pattern.....	1-down, 4-up
Primary reduction ratio.....	1.407 (76/54)
Gear ratios, Low.....	2.188 (35/16)
2nd.....	1.400 (28/20)
3rd.....	1.038 (27/26)
4th.....	0.875 (28/32)
Top.....	0.788 (26/33)
Final reduction ratio.....	3.137 (20/17 × 32/12)
Drive system.....	Shaft drive

Specifications VZ1500L8

E-03: USA, E-33: California

CHASSIS

Front suspension	Inverted telescopic, coil spring, oil damped
Rear suspension	Link type, coil spring, oil damped
Front fork stroke	130 mm (5.1 in)
Rear wheel travel	108 mm (4.3 in)
Caster	32°
Trail	129 mm (5.08 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	120/70ZR18M/C (59W), tubeless
Rear tire	200/50ZR17M/C (75W), tubeless

ELECTRICAL

Ignition type	Electronic ignition (Transistorized)
Ignition timing	4° B.T.D.C. at 1000 r/min
Spark plug	NGK CR6E or DENSO U20ESR-N
Battery	12V 64.8 kC (18 Ah)/10 HR
Generator	Three-phase A.C. generator
Main fuse	30A
Fuse	10/10/10/10/15/15A
Headlight	12V 60/55W (H4)
Brake/Tail light	LED
Front turn signal/Position light	12V 21/5W
Rear turn signal light	12V 21W
License plate light	12V 5W
Speedometer light	LED
Neutral indicator light	LED
High beam indicator light	LED
Turn signal indicator light	LED
Coolant temperature indicator light	LED
Oil pressure indicator light	LED
FI indicator Light	LED

CAPACITIES

Fuel tank	18.0 L (4.8/4.0 US/Imp gal)
Engine oil, oil change	3000 ml (3.2/2.6 US/Imp qt)
with filter change	3200 ml (3.4/2.8 US/Imp qt)
overhaul	4000 ml (4.2/3.5 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 VZ1500L8

E-03: USA, E-33: California

Valve + Guide

Unit: mm (in)

Item		Standard	Limit
Valve diam.	IN.	33 (1.30)	—
	EX.	30 (1.18)	—
Tappet clearance (When cold)	IN.	0.08 – 0.13 (0.003 – 0.005)	—
	EX.	0.17 – 0.22 (0.007 – 0.009)	—
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.	5.500 – 5.512 (0.2165 – 0.2170)	—
Valve stem O.D.	IN.	5.475 – 5.490 (0.2156 – 0.2161)	—
	EX.	5.455 – 5.470 (0.2148 – 0.2154)	—
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 stem end length	IN. & EX.	—	3.2 (0.13)
Valve seat width	IN. & EX.	0.9 – 1.1 (0.035 – 0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length	Inner	—	34.4 (1.35)
	Outer	—	38.1 (1.50)
Valve spring tension	Inner	58 – 66 N (5.9 – 6.7 kgf, 13.1 – 15.0 lbs) at length 27.56 mm (1.09 in)	—
	Outer	135 – 155 N (13.5 – 15.5 kgf, 30.4 – 34.9 lbs) at length 31.06 mm (1.23 in)	—

Camshaft + Cylinder Head

Unit: mm (in)

Item		Standard	Limit
Cam height	IN.	33.060 – 33.110 (1.3016 – 1.3035)	32.760 (1.2898)
	EX.	33.110 – 33.160 (1.304 – 1.306)	32.810 (1.2917)
Camshaft journal oil clearance	IN. & EX.	0.032 – 0.066 (0.0013 – 0.0026)	0.150 (0.0059)
Camshaft journal holder I.D.	Sprocket side	22.012 – 22.025 (0.8666 – 0.8671)	—
	Other side	18.512 – 18.525 (0.7288 – 0.7293)	—
Camshaft journal O.D.	Sprocket side	21.959 – 21.980 (0.8645 – 0.8653)	—
	Other side	18.459 – 18.480 (0.7267 – 0.7276)	—
Camshaft runout	IN. & EX.	—	0.10 (0.004)
Cylinder head distortion		—	0.05 (0.002)
Rocker arm shaft O.D.	IN. & EX.	11.973 – 11.984 (0.4714 – 0.4718)	
Rocker arm I.D.	IN. & EX.	12.000 – 12.018 (0.4724 – 0.4731)	

Cylinder + Piston + Piston Ring

Unit: mm (in)

Item	Standard		Limit
Compression pressure (Automatic decomp. actuated)	#1 Cylinder	850 – 1 450 kPa (8.5 – 14.5 kgf/cm ² , 121 – 206 psi)	750 kPa (7.5 kgf/cm ² , 106.7 psi)
	#2 Cylinder	650 – 1 250 kPa (6.5 – 12.5 kgf/cm ² , 92 – 178 psi)	550 kPa (5.5 kgf/cm ² , 78.2 psi)
Piston-to-cylinder clearance	0.025 – 0.035 (0.0010 – 0.0014)		0.120 (0.0047)
Cylinder bore	96.000 – 96.015 (3.7795 – 3.7801)		Nicks or Scratches
Piston diam.	95.970 – 95.985 (3.7783 – 3.7789) Measure at 15 mm (0.6 in) from the skirt end.		95.88 (3.7748)
Cylinder distortion	—		0.05 (0.002)
Piston ring free end gap	1st	Approx. 11 (0.43)	8.8 (0.35)
	2nd	Approx. 11 (0.43)	8.8 (0.35)
Piston ring end gap	1st	0.10 – 0.25 (0.004 – 0.010)	0.5 (0.020)
	2nd	0.10 – 0.25 (0.004 – 0.010)	0.5 (0.020)
Piston ring-to-groove clearance	1st	—	0.180 (0.0071)
	2nd	—	0.150 (0.0059)
Piston ring groove width	1st	1.21 – 1.23 (0.0476 – 0.0484)	—
	2nd	1.01 – 1.03 (0.0398 – 0.0402)	—
	Oil	2.51 – 2.53 (0.0988 – 0.0996)	—
Piston ring thickness	1st	1.17 – 1.19 (0.046 – 0.047)	—
	2nd	0.97 – 0.99 (0.038 – 0.039)	—
Piston pin bore I.D.	22.002 – 22.008 (0.8662 – 0.8665)		22.030 (0.8673)
Piston pin O.D.	21.993 – 22.000 (0.8658 – 0.8661)		21.980 (0.8654)

Conrod + Crankshaft

Unit: mm (in)

Item	Standard	Limit
Conrod small end I.D.	22.010 – 22.018 (0.8665 – 0.8668)	22.040 (0.8677)
Conrod big end side clearance	0.100 – 0.200 (0.0039 – 0.0078)	0.30 (0.012)
Conrod big end width	19.95 – 20.00 (0.785 – 0.787)	—
Crank pin width	20.10 – 20.15 (0.791 – 0.793)	—
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	0.002 – 0.029 (0.00008 – 0.00114)	0.080 (0.0031)
Crankshaft journal O.D.	54.985 – 55.000 (2.1648 – 2.1654)	—
Crankshaft thrust bearing thickness	1.925 – 2.075 (0.0758 – 0.0817)	—
Crankshaft thrust clearance	0.100 – 0.150 (0.0039 – 0.0059)	—
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 800 kPa (8.0 kgf/cm ² , 114 psi) at 3 000 r/min	—

Clutch

Unit: mm (in)

Item	Standard	Limit	
Clutch cable play	10 – 15 (0.4 – 0.6)	—	
Clutch release arm play	6.0 (0.24)	2.0 (0.08)	
Clutch release screw	1/2 turn back	—	
Clutch drive plate thickness	No. 1	3.72 – 3.88 (0.146 – 0.153)	3.42 (0.135)
	No. 2	3.72 – 3.88 (0.146 – 0.153)	3.42 (0.135)
	No. 3	3.72 – 3.88 (0.146 – 0.153)	3.42 (0.135)
Clutch drive plate claw width	No. 1, 2, 3	13.9 – 14.0 (0.154 – 0.551)	13.1 (0.516)
Clutch driven plate distortion	—	0.10 (0.004)	
Clutch spring free length	38.79 (1.53)	36.9 (1.45)	

Thermostat + Radiator + Fan + Coolant

Item	Standard	Note	
Thermostat valve opening temperature	Approx. 88 °C (190 °F)	—	
Thermostat valve lift	Over 8 mm (0.31 in) at 100 °C (212 °F)	—	
ECT 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	108 – 137 kPa (1.1 – 1.4 kgf/cm ² , 15.6 – 19.5 psi)	—	
Cooling fan operating temperature	OFF → ON	Approx. 105 °C (221 °F)	—
	ON → OFF	Approx. 99 °C (210 °F)	—
Engine coolant type	Use an antifreeze/coolant compatible with aluminum radiator.	—	
Engine coolant	Reservoir tank side	Approx. 250 ml (0.3/0.2 US/Imp qt)	—
	Engine side	Approx. 2 400 ml (2.5/2.1 US/Imp qt)	—

Drive Train

Unit: mm (in) Except ratio

Item	Standard	Limit	
Primary reduction ratio	1.407 (76/54)	—	
Final reduction ratio	3.137 (20/17 x 32/12)	—	
Gear ratios	1st	2.187 (35/16)	—
	2nd	1.400 (28/20)	—
	3rd	1.038 (27/26)	—
	4th	0.875 (28/32)	—
	Top	0.787 (26/33)	—
Shift fork to groove clearance	0.1 – 0.3 (0.004 – 0.012)	0.5 (0.02)	
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	95 – 105 (3.7 – 4.1)	—	

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	—	20.5 (0.81)
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 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)	

FI Sensors

Item	Specification	Note
CKP sensor resistance	170 – 260 Ω	
CKP sensor peak voltage	3.0 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	0.1 – 4.85 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	0.1 – 4.6 V	
IAT sensor resistance	Approx. 2.5 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
GP switch voltage	0.6 V and more	When leaning 65° From 1st to Top
Injector voltage	Battery voltage	
STP sensor input voltage	4.5 – 5.5 V	
STP sensor output voltage	Closed	Approx. 0.6 V
	Opened	Approx. 4.2 V
STV actuator resistance	Approx. 7 Ω	
HO2 sensor output voltage	0.4 V and less at idle speed	If equipped
	0.6 V and more at 4 000 r/min	If equipped
HO2 sensor heater resistance	4.0 – 5.0 Ω at 23 °C (73 °F)	If equipped
PAIR solenoid valve resistance	18 – 22 Ω at 20 – 30 °C (68 – 86 °F)	
ISC valve resistance	Approx. 20 Ω at 20 °C (68 °F)	
EVAP system purge control solenoid valve resistance	Approx. 32 Ω at 20 °C (68 °F)	If equipped

Throttle Body

Item	Specification
Bore size	42 mm (2.0 in)
I.D. No.	40H1 (For E-33), 40H0 (For E-03)
Idle r/min	1 000 ± 100 r/min/Warmed engine
Throttle cable play	2.0 – 4.0 mm (0.08 – 0.16 in)

Electrical

Unit: mm (in)

Item	Specification	Note	
Firing order	1 · 2		
Spark plug	Type	NGK: CR6E DENSO: U20ESR-N	
	Gap	0.7 – 0.8 (0.028 – 0.031)	
Spark performance	Over 8 (0.3) at 1 atm.		
CKP sensor resistance	170 – 260 Ω		
CKP sensor peak voltage	3.0 V and more	When cranking	
Ignition coil resistance	Primary	1 – 5 Ω	
	Secondary	25 – 40 kΩ	
Ignition coil primary peak voltage	150 V and more	#2: (+) B, (–) Ground #1: (+) W/BI, (–) Ground	
Generator coil resistance	0.2 – 0.6 Ω		
Generator maximum output	Approx. 425 W at 5 000 r/min		
Generator no-load voltage (When engine is cold)	80 V (AC) and more at 5 000 r/min		
Regulated voltage	13.5 – 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	
	Signal	10 A	
	Fan motor	15 A	
	Main	30 A	
Starter motor brush length	Standard	12.5 (0.49)	
	Limit	6.0 (0.24)	
Starter torque limiter slip torque	Standard	19.6 – 39.2 N·m (1.96 – 3.92 kgf·m, 14.0 – 28.5 lbf·ft)	

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 light		LED
Turn signal indicator light		LED
High beam indicator light		LED
Neutral position indicator light		LED
Fuel level indicator light		LED
Coolant temperature indicator light		LED
Oil pressure indicator light		LED
FI indicator light		LED
License plate light		5

Brake + Wheel

Unit: mm (in)

Item	Standard		Limit
Rear brake pedal height	60 – 70 (2.4 – 2.8)		—
Brake disc thickness	Front	4.3 – 4.7 (0.169 – 0.185)	4.0 (0.16)
	Rear	6.6 – 7.0 (0.260 – 0.276)	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	15.870 – 15.913 (0.6248 – 0.6265)	—
Master cylinder piston diam.	Front	15.827 – 15.854 (0.6231 – 0.6242)	—
	Rear	15.827 – 15.854 (0.6231 – 0.6242)	—
Brake caliper cylinder bore	Front	30.230 – 30.306 (1.1902 – 1.1931)	—
	Rear	30.230 – 30.306 (1.1902 – 1.1931)	—
Brake caliper piston diam.	Front	30.150 – 30.200 (1.1870 – 1.1890)	—
	Rear	30.150 – 30.200 (1.1870 – 1.1890)	—
Brake fluid type	DOT 4		—
Wheel rim runout	Front & Rear	Axial	—
		Radial	
Wheel axle runout	Front & Rear	—	0.25 (0.010)
Wheel rim size	Front	18 M/C x MT 3.50	—
	Rear	17 M/C x MT 6.00	—

Suspension

Unit: mm (in)

Item	Standard	Limit
Front fork stroke	130 (5.1)	—
Front fork spring free length	338 (13.3)	331 (13.0)
Front fork inner tube O.D.	43 (1.7)	—
Front fork oil level (Without spring, inner tube fully compressed)	121 (4.8)	—
Front fork oil type	SUZUKI FORK OIL L01 or an equivalent fork oil	—
Front fork oil capacity (Each leg)	636 ml (21.5/22.4 US/Imp oz)	—
Rear shock absorber spring pre-set length	192 (7.56)	—
Rear wheel travel	108 (4.3)	—
Swingarm pivot shaft runout	—	0.3 (0.01)

Tire

Item		Standard	Limit
Cold inflation tire pressure (Solo riding)	Front	250 kPa (2.50 kgf/cm ² , 36 psi)	—
	Rear	250 kPa (2.50 kgf/cm ² , 36 psi)	—
Cold inflation tire pressure (Dual riding)	Front	250 kPa (2.50 kgf/cm ² , 36 psi)	—
	Rear	290 kPa (2.90 kgf/cm ² , 42 psi)	—
Tire size	Front	120/70ZR 18M/C (59W), tubeless	—
	Rear	200/50ZR 17M/C (75W), tubeless	—
Tire type	Front	BRIDGESTONE: G853 G	—
	Rear	BRIDGESTONE: G852 G	—
Tire tread depth (Recommended depth)	Front	—	1.6 mm (0.06 in)
	Rear	—	2.0 mm (0.08 in)

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.	
Fuel tank capacity	18 L (4.8/4.0 US/Imp gal)	
Engine oil type	SAE 10W-40, API SF/SG or SH/SJ with JASO MA	
Engine oil capacity	Change	3 000 ml (3.2/2.6 US/Imp qt)
	Filter change	3 200 ml (3.4/2.8 US/Imp qt)
	Overhaul	4 000 ml (4.2/3.5 US/Imp qt)

Tightening Torque List

Engine

Item		N·m	kgf-m	lbf-ft	
Cylinder head cover bolt		14	1.4	10.0	
Cylinder head cover bracket bolt		10	1.0	7.0	
Cylinder head bolt	[L160]	26	2.6	19.0	
	[L180]	26	2.6	19.0	
	[L190]	Initial	25	2.5	18.0
		Final	42	4.2	30.5
Cylinder head inspection cap bolts		10	1.0	7.0	
Water jacket plug (Cylinder head)		26	2.6	19.0	
Camshaft journal holder bolt		10	1.0	7.0	
Cam chain sprocket bolt		15	1.5	11.0	
Cam chain tension adjuster bolt (Front & Rear)		10	1.0	7.0	
Cam chain tension adjuster cap bolt		23	2.3	16.5	
Cam chain tensioner bolt (Front & Rear)		23	2.3	16.5	
Valve clearance adjuster lock-nut		15	1.5	11.0	
Cam chain guide bolt (Front & Rear)		23	2.3	16.5	
Exhaust pipe bolt		23	2.3	16.5	
HO2 sensor		48	4.8	34.5	
Spark plug		11	1.1	8.0	
Primary drive gear bolt		150	15.0	108.5	
Starter clutch bolt		25	2.5	18.0	
Conrod 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	[M6]	Initial	6	0.6	4.5
		Final	11	1.1	8.0
	[M8]	Initial	15	1.5	11.0
		Final	26	2.6	19.0
Oil gallery plug	[M8]	18	1.8	13.0	
	[M14]	23	2.3	16.5	
	[M16]	35	3.5	25.5	
Oil gallery plug (Transmission oil jet)	[M10]	18	1.8	13.0	
Oil pressure switch		14	1.4	10.0	
Oil pressure switch lead wire bolt		1.5	0.15	1.0	
Oil pump cover screw		1.3	0.13	1.0	
Clutch sleeve hub nut		95	9.5	68.5	
Clutch spring set bolt		10	1.0	7.0	
Clutch spring support bolt		23	2.3	16.5	
Clutch cable adjuster lock-nut		4.5	0.45	3.0	
Valve timing inspection plug		23	2.3	16.5	
Valve timing inspection cap bolt		10	1.0	7.0	
Gearshift cam stopper plate bolt		10	1.0	7.0	
Gearshift arm stopper		19	1.9	13.5	
Gearshift cam stopper bolt		10	1.0	7.0	
Gearshift lever bolt		50	5.0	36.0	
Generator cover plug		11	1.1	8.0	
Generator rotor bolt		160	16.0	115.5	
Generator stator set bolt		11	1.1	8.0	
Starter motor mounting bolt		10	1.0	7.0	
Starter motor housing bolt		5	0.5	3.5	
Starter motor lead wire mounting nut		6	0.6	4.5	
Brush holder nut		11	1.1	8.0	
Oil filter		20	2.0	14.5	

Item	N·m	kgf-m	lbf-ft
Engine mounting nut	55	5.5	40.0
Muffler connecting bolt	26	2.6	19.0
Muffler support nut	26	2.6	19.0
Muffler support bolt	26	2.6	19.0
Muffler joint bolt	26	2.6	19.0
Muffler mounting nut	26	2.6	19.0
Rear muffler upper cover mounting bolt	10	1.0	7.0
Air cleaner box mounting bolt	5.5	0.55	4.0

Driveline / Axle

Item	N·m	kgf-m	lbf-ft
Secondary drive gear bolt	160	16.0	115.5
Secondary driven bevel gear bearing stopper	105	10.5	76.0
Secondary bevel gear coupling nut	95	9.5	68.5
Secondary gear case bolt	Initial	15	1.5
	Final	26	2.6
Secondary driven gear bearing housing bolt	55	5.5	40.0
Final gear case nut	40	4.0	29.0
Final drive gear coupling nut	100	10.0	72.5
Final drive bevel gear bearing stopper	110	11.0	79.5
Final gear case bolt	[M8]	23	2.3
	[M10]	50	5.0
Final gear 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	5.5	0.55	4.0
Fuel pump mounting bolt	10	1.0	7.0
GP switch mounting bolt	6.5	0.65	4.5
TP sensor mounting screw	3.5	0.35	2.5
STP sensor mounting screw	3.5	0.35	2.5
IAT sensor mounting screw	1.3	0.13	1.0
ISC valve mounting bolt	4.5	0.45	3.0
Fuel delivery pipe mounting screw	5	0.5	3.5
EVAP system purge control solenoid valve mounting nut (For E-33)	7	0.7	5.0

Cooling System

Item	N·m	kgf-m	lbf-ft
ECT sensor	18	1.8	13.0
Water hose clamp screw	1.5	0.15	1.0
Water pump case screw	5.5	0.55	4.0
Cooling fan mounting bolt	6.5	0.65	4.5
Radiator heat shield mounting bolt (Left side)	5.5	0.55	4.0
Radiator heat shield mounting bolt (Right side)	10	1.0	7.0

Chassis

Item	N-m	kgf-m	lbf-ft
Handlebar clamp bolt	23	2.3	16.5
Handlebar holder bolt	45	4.5	32.5
Front fork clamp bolt (Upper & Lower)	23	2.3	16.5
Front fork cap bolt	23	2.3	16.5
Front fork cylinder bolt	30	3.0	21.5
Steering stem nut	45 N-m (4.5 kgf-m, 32.5 lbf-ft) then turn back 1/2 – 1/4		
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
Damper rod bolt	30	3.0	21.5
Front fork inner rod lock-nut	15	1.5	11.0
Brake disc bolt (Front & Rear)	23	2.3	16.5
Rear brake caliper bracket mounting bolt	94	9.4	68.0
Front brake caliper mounting bolt	39	3.9	28.0
Rear brake caliper mounting bolt	54	5.4	39.0
Air bleeder valve (Front brake)	7.5	0.75	5.5
Air bleeder valve (Rear brake)	7.5	0.75	5.5
Brake hose union bolt (Front & Rear)	23	2.3	16.5
Brake lever pivot bolt	1	0.1	0.7
Brake lever pivot bolt lock-nut	6	0.6	4.5
Front brake master cylinder holder bolt	10	1.0	7.0
Rear brake master cylinder mounting bolt	10	1.0	7.0
Rear master cylinder rod lock-nut	18	1.8	13.0
Rear brake pedal boss bolt	16	1.6	11.5
Frame down tube bolt	50	5.0	36.0
Rear frame bolt	50	5.0	36.0
Rear reflex reflector mounting nut	1.8	0.18	1.3
Front footrest bracket bolt	50	5.0	36.0
Swingarm pivot shaft nut	100	10.0	72.5
Cushion lever mounting nut	132	13.2	95.5
Cushion rod nut	132	13.2	95.5
Rear shock absorber mounting nut (Upper & Lower)	65	6.5	47.0
Rear axle nut	100	10.0	72.5
Rear brake master cylinder rod lock-nut	18	1.8	13.0
Brake pipe flare nut	16	1.6	11.5
Steering lock bracket bolt	26	2.6	19.0
Combination meter mounting bolt	10	1.0	7.0
Headlight cover mounting bolt	8.5	0.85	6.0

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