# Features & Specifications 2018 Boulevard S40



### **Overview**

The Suzuki Boulevard S40 takes a timeless single-cylinder design, a blacked-out treatment, and adds a shot of advanced Suzuki technology to create a bike that combines exciting performance and a bold appearance with rock-solid reliability. It features a strong, rigid chassis for agile handling and lightweight responsiveness that makes it great for cruising down the boulevard or beyond the city limits. Best of all, one twist of the throttle rewards you with a strong blast torque from the 40-cubic-inch engine.

## **Key Features**

- New, bright Metallic Mystic Silver or rich Pearl Splendor Violet colors.
- Blacked-out engine with highlighted cylinder head cooling fins.
- Blacked-out handlebars, upper fork clamp, headlight shell and other components deliver a bold, custom look.
- Shiny black finish on the wheel rims is set off by bright, stainless steel spokes.
- Black lower fork legs and rear fender stays match the wheels' black rims, further impressing the S40's strong style.

## **Engine Features**

- A 652cc, SOHC, single-cylinder, air-cooled four-stroke engine with TSCC (Twin Swirl Combustion Chambers) cylinder head and high mass crankshaft produces strong low-end power and torque.
- An electric starter with automatic decompression system provides quick, easy engine starting.
- · Precise electronic ignition system with maintenance-free battery.
- A smooth-shifting 5-speed transmission is complemented by a low-maintenance belt-drive system that's quiet, durable, and simple to adjust and clean.
- Sculpted engine features a rich, blacked-out treatment with a large, visually striking cylinder and head with highlighted cooling fins.

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## **Chassis Features**

- Strong steel frame with tubular backbone that supports the chopper-style chassis.
- Black-finish drag-style handlebar with upper fork clamp and custom-style rear view mirrors provide a striking appearance (similar to the larger Suzuki Boulevard models).
- Attractive tear drop-shaped fuel tank (2.8 gal capacity) with flush-mounted speedometer.
- Neatly painted steel front/rear fenders and side covers complement the fuel tank.
- One-piece saddle adds to streamlined appearance. The deeply cushioned seat has a low 27.6 inches seat height that's great for smaller or entry-level riders.
- A wide 15" rear tire and slim 19" front tire provide a classic cruiser look.
- Light weight (381 lbs.) for easy maneuverability.
- A hydraulic front disc brake and drum-type rear brake provide strong, reliable braking performance.
- The rear reflector is integrated with the taillight for a clean, finished appearance to the rear section of the bike.
- Convenient hazard and passing light switches.

## **Additional Features**

- A variety of Genuine Suzuki Accessories for Boulevard owners are available including a large selection of Suzuki logo apparel.
- 12-month, unlimited mileage, limited warranty.
- Longer warranty coverage period and other benefits are available through the Suzuki Extended Protection Plan (SEP).

• For more details, please visit <u>www.suzukicycles.com</u>.

# **Specifications LS650BL8** E-03: USA, E-33: California

## **DIMENSIONS AND CURB MASS**

Overall length	
Overall width	720 mm (28.3 in)
Overall height	1 105 mm (43.5 in)
Wheelbase	1 480 mm (58.3 in)
Ground clearance	135 mm (̀5.3 in) ´
Seat height	700 mm (27.6 in)
Curb mass	173 kg (381 lbs)

## ENGINE

Туре	4-stroke, air-cooled, OHC
Number of cylinders	1
Bore	
Stroke	94.0 mm (3.701 in)
Stroke Displacement	652 cm³ (39.8 cu. in)
Compression ratio	
Carburetor	MIKUNI BS40, single
Air cleaner	Non-woven fabric element
Starter system	
Lubrication system	
Idle speed	
•	

#### **DRIVE TRAIN**

Clutch	Wet multi-plate type
Transmission	5-speed constant mesh
Gearshift pattern	1-down, 4-up
Primary reduction ratio	1.810 (67/37)
Gear ratios, Low	2.333 (35/15)
2nd	
3rd	1.142 (24/21)
4th	0.956 (22/23)
Тор	
Final reduction ratio	
Drive system	



# **Specifications LS650BL8** E-03: USA, E-33: California

#### CHASSIS

Front suspension	
Rear suspension	
Front suspension stroke	
Rear wheel travel	80 mm (3.1 in)
Caster	35°
Trail	147 mm (5.79 in)
Steering angle	42° (right & left)
Turning radius	2.6 m (8.5 ft)
Front brake	Disc brake
Rear brake	Drum brake
Front tire size	100/90-19 M/C 57H, tube type
Rear tire size	

#### ELECTRICAL

Ignition type	
Ignition timing	5° B.T.D.C. at 1 100 r/min
Spark plug	NGK DPR8EA-9 or DENSO X24EPR-U9
Battery	
Generator	
Fuse	20/20Å
Headlight	12V 60/55W
Turn signal light Front	12V 21/5W
Rear	12V 21W
Brake light/Taillight	12V 21/5W
License plate light	
Speedometer light	12V 3W
Neutral indicator light	12V 3W
High beam indicator light	
Turn signal indicator light	

### CAPACITIES

Fuel tank including reserve	10.5 L (2.8/2.3 US/Imp gal) E-03
-	10.0 L (2.6/2.2 US/Imp gal) E-33
Reserve	2.5 L (0.6/0.5 US/Imp gal)
Engine oil , oil change	1 800 ml (1.9/1.6 US/Imp qt)
With filter change	2 000 ml (2.1/1.8 US/Imp qt)
Overhaul	2 400 ml (2.5/2.1 US/Imp qt)

# Service Data LS650BL8 E-03: USA, E-33: California

## **VALVE + GUIDE**

Unit: mm (in)

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ITEM		LIMIT	
Valve diam.	IN.	33 (1.3)	_
	EX.	28 (1.1)	—
Valve lift	IN.	8.5 (0.33)	—
	EX.	8.5 (0.33)	—
Valve clearance (when cold)	IN. & EX.	0.08 – 0.13 (0.003 – 0.005)	—
Valve guide to valve stem clearance	IN.	0.025 - 0.055 (0.0010 - 0.0022)	—
	EX.	0.040 – 0.070 (0.0016 – 0.0028)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve guide I.D.	IN. & EX.	7.000 – 7.015 (0.2756 – 0.2762)	—
Valve stem O.D.	IN.	6.960 – 6.975 (0.2740 – 0.2746)	—
	EX.	6.945 – 6.960 (0.2734 – 0.2740)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	2.9 (0.11)
Valve seat width	IN. & EX.	1.0 – 1.2 (0.039 – 0.047)	_
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.6 (1.40)
	OUTER	—	40.4 (1.59)
Valve spring tension (IN. & EX.)	INNER	68 – 83 N (6.9 – 8.5 kgf, 15.2 – 18.7 lbs) at length 31.0 mm (1.2 in)	_
	OUTER	160 – 184 N (16.4 – 18.8 kgf, 36.2 – 41.4 lbs) at length 33.0 mm (1.3 in)	_

# **CAMSHAFT + CYLINDER HEAD**

ITEM		STANDARD	
			LIMIT
Cam height	IN.	36.174 – 36.228 (1.4242 – 1.4263)	35.880 (1.4126)
	EX.	36.419 - 36.473 (1.4338 - 1.4359)	36.120 (1.4220)
Camshaft journal oil clearance		0.032 - 0.066 (0.0013 - 0.0026)	0.150 (0.0060)
Camshaft journal holder I.D.	Left	20.012 - 22.025 (0.7879 - 0.7884)	_
	Right & Center	25.012 – 25.025 (0.9847 – 0.9852)	_
Camshaft journal O.D.	Left	19.959 – 19.976 (0.7858 – 0.7865)	_
	Right & Center	24.959 - 24.976 (0.9826 - 0.9833)	_
Camshaft runout		—	0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000 – 12.018 (0.4724 – 0.4731)	_
Rocker arm shaft O.D.	IN. & EX.	11.966 – 11.984 (0.4711 – 0.4718)	_
Cylinder head distortion		_	
Cylinder head cover distortion		_	
De-comp. cable play	3 - 5 (0.12 - 0.20)		

# **CYLINDER + PISTON + PISTON RING**

Unit: mm (in)

ITEM			LIMIT	
Compression pressure		(1	800 kPa (8 kgf/cm², 114 psi)	
Piston to cylinder clearance			0.050 - 0.060 (0.0020 - 0.0024)	0.120 (0.0047)
Cylinder bore			94.000 – 94.015 (3.7008 – 3.7014)	94.080 (3.7039)
Piston diam.	Mea	asure	93.880 (3.6961)	
Cylinder distortion		_		0.05 (0.002)
Piston ring free end gap	1st	Т	Approx. 11.5 (0.45)	9.2 (0.36)
	2nd	Т	Approx. 14.0 (0.55)	11.2 (0.44)
Piston ring end gap	1st		0.30 - 0.45 (0.012 - 0.018)	1.00 (0.039)
	2no	d	0.25 - 0.40 (0.010 - 0.016)	1.00 (0.039)
Piston ring to groove clearance	1s	t		0.18 (0.007)
	2no	d		0.15 (0.006)



ITEM		STANDARD	
Piston ring groove width	1st	1.23 – 1.25 (0.0484 – 0.0492)	—
	2nd	1.21 – 1.23 (0.0476 – 0.0484)	_
	Oil	2.81 – 2.83 (0.1106 – 0.1114)	_
Piston ring thickness	1st	1.175 – 1.190 (0.0463 – 0.0469)	_
	2nd	1.175 – 1.190 (0.0463 – 0.0469)	_
Piston pin bore		23.000 – 23.006 (0.9055 – 0.9057)	
Piston pin O.D.		22.996 – 23.000 (0.9054 – 0.9055)	

## **CONROD + CRANKSHAFT + BALANCER**

Unit: mm (in) ITEM LIMIT STANDARD 23.006 - 23.014 (0.9057 - 0.9061) Corod small end I.D. 23.040 (0.9071)3.0 Conrod deflection (0.12) Conrod big end side clearance 0.10 - 0.65 (0.004 - 0.026) 1.0 (0.039)24.95 - 25.00(0.982 - 0.984) Conrod big end width  $\begin{array}{c} 70.0 \pm 0.1 \\ (2.756 \pm 0.004) \end{array}$ Crank web to web width \_\_\_\_ Crankshaft runout 0.05 (0.002)Balancer spring free length 10.0 \_\_\_\_ (0.39)

## **OIL PUMP**

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	2.203 (68/36 × 35/30)	—
Oil pressure (at 60 °C, 140 °F)	Above 50 kPa (0.50 kgf/cm², 7.1 psi) Below 75 kPa (0.75 kgf/cm², 10.7 psi) at 3 000 r/min	_

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CLUTCH			Unit: mm (in)
ITEM		STANDARD	LIMIT
Clutch lever play		10 – 15 (0.4 – 0.6)	_
Drive plate thickness	No. 1	2.92 – 3.08 (0.115 – 0.121)	2.62 (0.103)
	No. 2	3.45 – 3.55 (0.136 – 0.140)	3.15 (0.124)

ITEM		STANDARD		
Drive plate claw width	No. 1	15.8 – 16.0 (0.622 – 0.630)	15.0 (0.591)	
	No. 2	15.9 – 16.0 (0.626 – 0.630)	15.1 (0.594)	
Driven plate distortion		_		
Clutch spring free length				

# **DRIVE TRAIN**

Unit: mm (in) Except ratio

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ITEM			STANDARD	LIMIT
Primary reduction ratio		1.810 (67/37)		—
Final reduction ratio			2.956 (68/23)	—
Gear ratios	Low		2.333 (35/15)	_
	2nd		1.578 (30/19)	_
	3rd		1.142 (24/21)	_
	4th		0.956 (22/23)	_
	Тор		0.884 (23/26)	_
Shift fork to groove clea	arance	0.10 - 0.30 (0.004 - 0.012)		0.50 (0.020)
Shift fork groove width		3rd drive gear	5.50 – 5.60 (0.217 – 0.220)	_
		4th driven gear	5.50 – 5.60 (0.217 – 0.220)	—
		Top driven gear	5.50 – 5.60 (0.217 – 0.220)	—
Shift fork thickness		No. 1, No. 2 5.30 – 5.40 & No. 3 (0.209 – 0.213)		_
Drive belt		Type BANDO: 133U-14M 40.0		_
		Number of 133		_
Gearshift lever height		60 (2.4)		—

# CARBURETOR

ITEM		SPECIFICATION		
		E-03	E-33	
Carburetor type		MIKUNI BS40SS	$\leftarrow$	
Bore size		40 mm	$\leftarrow$	
I.D. No.		24C4	24C5	
Idle r/min		1 100 ± 100 r/min	$\leftarrow$	
Float height		27.95 ± 1.0 mm (1.1 ± 0.04 in)	$\leftarrow$	
Main jet	(M.J.)	#145	$\leftarrow$	
Jet needle	(J.N.)	5C39	5C39	
Needle jet	(N.J.)	X-7M	$\leftarrow$	
Throttle valve	(Th.V.)	#120	$\leftarrow$	
Pilot jet	(P.J.)	#52.5	$\leftarrow$	
Pilot screw	(P.S.)	PRE-SET (1 and 1/8 turns back)	PRE-SET (1 and 1/8 turns back)	
Throttle cable play		2.0 – 4.0 mm (0.08 – 0.16 in)	←	

# ELECTRICAL

Unit: mm (in)

GILLIK

	ITEM		SPECIFICATION	NOTE
Spark plug		Type NGK: DPR8EA-9 N.D.: X24EPR-U9		
		Gap	0.8 – 0.9 (0.031 – 0.035)	
Spark perform	ance		Over 8 (0.3) at 1 atm.	
Solenoid resis	tance		0.1 – 1.0 Ω	
Pick-up coil re	sistance		170 – 270 Ω	O/G
Ignition coil re	sistance	Primary $1 - 7 \Omega$		O/W – Ground
		Secondary 10 – 25 kΩ		Plug cap – Ground
Generator no-	load voltage	More	than 100 V (AC) at 5 000 r/min	
Regulated volt	tage	14	4.0 – 15.5 V at 5 000 r/min	
Starter relay re	esistance		2-6Ω	
Battery	Type designation		YB14L-B2	
	Voltage	12 V		
	Capacity	50.4 kC (14 Ah)/10 HR		
	Standard electrolyte S.G.	1.28 at 20 °C (68 °F)		
Fuse size			20 A	

WATTAGE		Unit: W
ITEM		SPECIFICATION
		E-03, 33
Headlight	HI	60
	LO	55
Brake light/Taillight		21/5
Turn signal light		21
Running light (within front turn signal ligh	t)	5
Speedometer light		3
Turn signal indicator light		3
High beam indicator light		1.7
Neutral indicator light		3
License light		8

# **BRAKE + WHEEL**

Unit: mm (in)

ITEM		STANDARD		
Rear brake pedal free travel		20 – 30 (0.8 – 1.2)		
Rear brake pedal height		60 (2.4)	_	
Brake drum I.D.	Rear	—	160.7 (6.33)	
Brake lining thickness	Rear	—	1.5 (0.06)	
Brake disc thickness	Front	4.5 ± 0.2 (0.18 ± 0.01)	4.0 (0.16)	
Brake disc runout	Front	—	0.30 (0.012)	
Master cylinder bore	Front	12.700 – 12.743 (0.4999 – 0.5017)	_	
Master cylinder piston diam.	Front	12.657 – 12.684 (0.4983 – 0.4994)	_	
Brake caliper cylinder bore	Front	42.850 – 42.926 (1.6870 – 1.6900)	_	
Brake caliper piston diam.	Front	42.770 – 42.820 (1.6839 – 1.6858)	_	
Wheel rim runout	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	19 × 2.15	_	
	Rear	15M/C × 2.75	—	
Tire size	Front	100/90-19M/C 57H	_	
	Rear	140/80-15 M/C 67H	_	

ITEM		LIMIT	
Tire tread depth	Front	—	1.6 (0.06)
	Rear	—	2.0 (0.08)

## **SUSPENSION**

Unit: mm (in)

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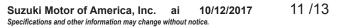
ITEM	STANDARD	LIMIT	
Front fork stroke	140 (5.5)	_	
Front fork spring free length		401 (15.79)	
Front fork oil level	75.0 (2.95)	_	
Rear wheel travel	80 (3.1)		
Swingarm pivot shaft runout		0.3 (0.001)	

# TIRE PRESSURE

COLD INFLATION	SOLO RIDING			DUAL RIDING		
TIRE PRESSURE	kPa	kgf/cm <sup>2</sup>	psi	kPa	kgf/cm <sup>2</sup>	psi
FRONT	200	2.00	29	200	2.00	29
REAR	225	2.25	33	250	2.50	36

## FUEL + OIL

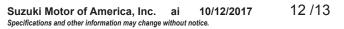
ITEM		SPECIFICATION	NOTE	
Fuel type	Use only unle octane (R/2 + the research m Gasoline cont Ether), less th methanol with sion inhibitor is			
Fuel tank capacity	Including	10.5 L (2.8/2.3 US/Imp gal)	E-03	
	reserve	10.0 L (2.6/2.2 US/Imp gal)	E-33	
	Only 2.5 L reserve (0.66/0.55 US/Imp gal)			
Engine oil type	SAE 10W-40,	SAE 10W-40, API SF/SG or SH/SJ with JASO MA		
Engine oil capacity	Oil change	1 800 ml (1.9/1.6 US/Imp qt)		
	Oil and filter change	2 000 ml (2.1/1.8 US/Imp qt)		
	Engine 2 400 ml overhaul 2.5/2.1 US/Imp qt)			
Front fork oil type				
Front fork oil capacity (each leg)	(*	Spacer		
Brake fluid type		DOT 4		



# TIGHTENING TORQUE ENGINE

ITEM	N⋅m	kgf-m	lbf-ft
Cylinder head cover bolt	8 – 12	0.8 – 1.2	6.0 - 8.5
Camshaft sprocket bolt	14 – 16	1.4 – 1.6	10.0 – 11.5
Cylinder head nut 9 mm Diam.	29 – 33	2.9 - 3.3	21.0 - 24.0
Cylinder head nut 8 mm Diam.	23 – 27	2.3 – 2.7	16.5 – 19.5
Cylinder base nut	8 – 12	0.8 – 1.2	6.0 - 8.5
Cam drive chain tensioner set bolt	20 – 25	2.0 – 2.5	14.5 – 18.0
Generator rotor bolt	140 – 160	14.0 – 16.0	101.5 – 115.5
Primary drive gear nut	90 – 110	9.0 - 11.0	65.0 – 79.5
Clutch spring mounting bolt	11 – 13	1.1 – 1.3	8.0 - 9.5
Clutch sleeve hub nut	50 – 70	5.0 - 7.0	36.0 - 50.5
Gearshift arm stopper	15 – 23	1.5 – 2.3	11.0 – 16.5
Oil filter cap nut and oil sump filter cap bolt	6 – 8	0.6 - 0.8	4.5 - 6.0
Engine pully nut	100 – 130	10.0 – 13.0	72.5 – 94.0
Engine mounting nut (cylinder head)	37 – 45	3.7 – 4.5	27.0 – 32.5
Engine mounting nut	70 – 88	7.0 - 8.8	50.5 - 63.5
Engine mounting bracket bolt	20 – 30	2.0 - 3.0	14.5 – 21.5
Exhaust pipe bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
Muffler mounting nut	18 – 28	1.8 – 2.8	13.0 – 20.0
Crankcase bolt 6 mm	9 – 13	0.9 – 1.3	6.5 – 9.5
Oil gallery plug 14 mm	20 – 25	2.0 – 2.5	14.5 – 18.0
Oil gallery plug 10 mm	12 – 18	1.2 – 1.8	8.5 – 13.0
Crankshaft hole plug 36 mm	12 – 18	1.2 – 1.8	8.5 – 13.0
Engine oil drain plug 12 mm	18 – 23	1.8 – 2.3	13.0 – 16.5
Starter clutch Allen bolt	23 – 28	2.3 – 2.8	16.5 – 20.0
Flywheel nut	140 – 160	14.0 – 16.0	101.5 – 115.5
Counter balancer set bolt	40 - 50	4.0 - 5.0	29.0 - 36.0
Crankshaft right end oil seal retainer bolt	5 – 6	0.5 – 0.6	3.5 – 4.5
Cam chain tensioner plate bolt	8 – 12	0.8 – 1.2	6.0 - 8.5
Exhaust rocker arm shaft set bolt	8 – 10	0.8 – 1.0	6.0 - 7.0
Cylinder head cover plug	25 – 30	2.5 – 3.0	18.0 – 21.5
De-comp lever nut	15 – 20	1.5 – 2.0	11.0 – 14.5
Tappet adjuster lock-nut	13 – 16	1.3 – 1.6	9.5 – 11.5
Driveshaft oil seal retainer bolt	9 – 13	0.9 – 1.3	6.5 – 9.5

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# **CHASSIS**

ITEM	N⋅m	kgf-m	lbf-ft
Front axle	44	4.4	32.0
Front axle pinch bolt	23	2.3	16.5
Front axle clamp bolt	15 – 25	1.5 – 2.5	11.0 – 18.0
Front fork damper rod bolt	30	3.0	21.5
Front fork lower clamp bolt	33	3.3	24.0
Front fork cap bolt	45	4.5	32.5
Steering stem head nut	65	6.5	47.0
Handlebar clamp bolt	23	2.3	16.5
Handlebar holder bolt	20 – 30	2.0 - 3.0	14.5 – 21.5
Handlebar holder nut	25	2.5	18.0
Front brake master cylinder mounting bolt	5 – 8	0.5 - 0.8	3.5 - 6.0
Front brake master cylinder mounting nut	10	1.0	7.0
Front brake caliper mounting bolt	25 – 40	2.5 - 4.0	18.0 – 29.0
Front brake caliper mounting nut	35	3.5	25.5
Front brake pad mounting bolt	18	1.8	13.0
Brake hose union bolt	23	2.3	16.5
Air bleeder valve	6	0.6	4.5
Front disc mounting bolt	23	2.3	16.5
Swingarm pivot nut	78	7.8	56.5
Front footrest bolt (6 mm)	10	1.0	7.3
Front footrest mounting bolt	65	6.5	47.0
Rear shock absorber mounting nut (Upper & Lower)	29	2.9	21.0
Rear axle nut	72	7.2	52.0
Rear pulley mounting nut	60	6.0	43.5
Rear pulley plate bolt	11	1.1	8.0
Rear brake cam lever bolt	7	0.7	5.0
Spoke nipple	5	0.5	3.7
Muffler stay bolt	31	3.1	22.5
Muffler stay mounting bolt	28 – 33	2.8 - 3.3	20.0 - 24.0
Front footrest mounting nut	50 - 80	5.0 - 8.0	36.0 - 58.0

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