

**PRESS INFORMATION**

**Nov 2015**

**SV650**



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## Introduction - Suzuki V-twin Sport heritage

In 1999, Suzuki released the original SV650. The motorcycle was designed to deliver fun of V-twin sport riding for all riders. The SV650 instantly became a rider's phenomenon around the world. Not only was this universal motorcycle well-suited for streets but it was right at home on the racetrack too.

It was an extremely light and quick turning motorcycle and throttle response is immediate and strong. But it's also forgiving and easy to ride. Therefore, any rider can ride with confidence, and anyone can feel the fun of lightweight V-twin Sport on winding roads or racetrack.



In 2003, Suzuki updated the SV650/S with higher performance and more sporty character with fuel injection.

Even in today's V-twin cup of local club racing, the starting grids are still filled with many SV650's.

The SV650 is arguably the best motorcycle for many people.



In 2009, Suzuki introduced SFV650 to meet the growing demands for more fashionable and more reasonable priced middle-class street bike.



These lightweight sport roadsters are powered by 90-degree V-twin engine. In today's 600-700cc class, models from other brands are mostly powered by parallel two or four cylinder engine. The reason why Suzuki keeps offering the V-twin roadster is, we value the uniqueness that only V-twin engine can offer.

- Linear power character throughout the rev range
- Slim and lightweight chassis
- V-twin's unique beat and rumble
- The great package any rider can feel joy of riding

For 2016, Suzuki introduces SV650 once again with more clear focus on the above mentioned V-twin character. New SV 650 has greater engine performance, class-leading fuel economy, lighter weight and sportier package in an affordable price range.

Raising the original "V-twin fun machine" concept even higher with latest Suzuki innovations, the SV650's newest version now sets a higher standard.

The product concept of SV650 is;

## **“Back to its origin”**

The core of SV650’s concept is delivering the fun of V-twin sports for all riders, in slim, simple and lightweight package.

### **Fun to ride**

- Only in the class\*, 645cc DOHC 90° V-twin engine of SFV650 is refined with more than 60 new parts, it produces increased max-power while conforming Euro4 emission requirement.
- The V-twin engine delivers deep rumble in low rev range, strong and linear torque in mid-range, smoothly runs up to high rpm range in controllable manner.
- By redesigning more than 140 parts and components (engine and chassis parts combined), the curb mass is reduced by 8kg (ABS model) with the “Back to its origin” concept. Its slim and lightweight chassis provides super-agile handling performance, yet it has forgiving character.

### **Easy riding**

- Newly featured, “Low RPM Assist” helps rider in launching and running at lower rpm.
- Newly featured, “Suzuki Easy Start” simplifies rider’s operation in engine starting.
- Narrow bodyworks and lightweight chassis is easy to maneuver.
- Seat height is 785mm, one of the lowest in the class\*.

### **Functional**

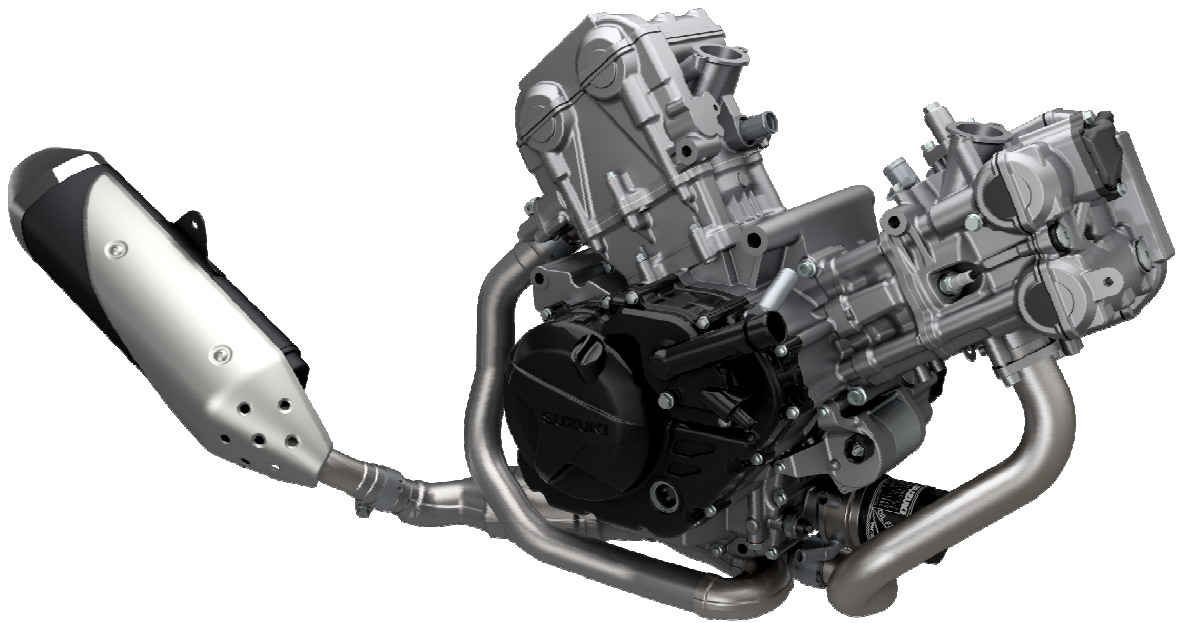
- Fuel economy is improved, the best in class\* 3.84L/100km.
- New full LCD instrument cluster provides a lot of information.

\* 600cc-800cc, on-road street bike class. In WMTTC mode test cycle.

## Engine design overview

The liquid-cooled, DOHC, 645cm<sup>3</sup> 90° V-twin engine comes with more than 60 pieces of redesigned parts and components. It delivers strong torque in the low-to-mid rpm range and higher max power and better fuel economy while meeting new EURO4 emission control.

The new engine runs smoothly up to high rpm and features powerful yet controllable engine characteristics ensuring in a wide range of riding scenes from winding roads to highway cruising and riding along a congested street.



	SV650	SFV650
Displacement	645cm <sup>3</sup>	←
Bore x Stroke	81.0 mm x 62.6 mm	←
Compression ratio	11.2 : 1	←
Max power	56.0kW / 8500rpm	53kW / 8400rpm
Max torque	64Nm / 8100rpm	64Nm / 6400rpm
Fuel economy in WMTc mode	26.05km/L (3.84L/100km)	24.0km/L (4.16L/100km)
Emission level	Euro 4	Euro 3

### Pistons and piston rings



- The new pistons were engineered with use of FEM (Finite Element Method) analysis to achieve optimal rigidity and weight.
- Each piston skirts were resin coated, and the other sliding part are tinned for less friction and greater durability. (First in the motorcycle industry)
- The Suzuki's original L-shaped piston rings contribute to reduce blow-by gas, resulting in less emissions and greater combustion efficiency.

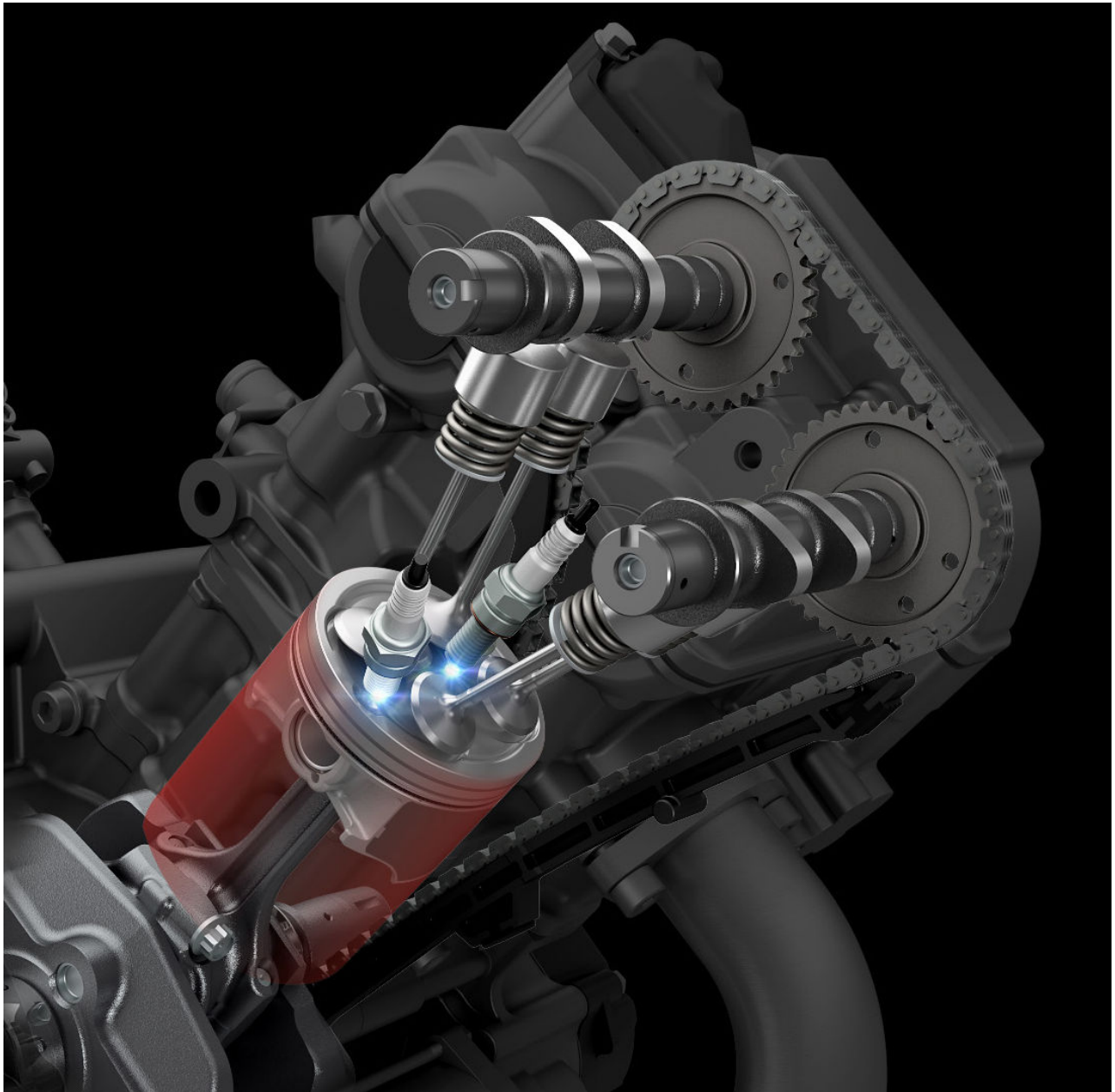
### SCEM plated cylinders



SCEM (Suzuki Composite Electrochemical Material)-plated cylinders reduce friction and improve heat transfer and durability.

## Dual Spark Cylinder head

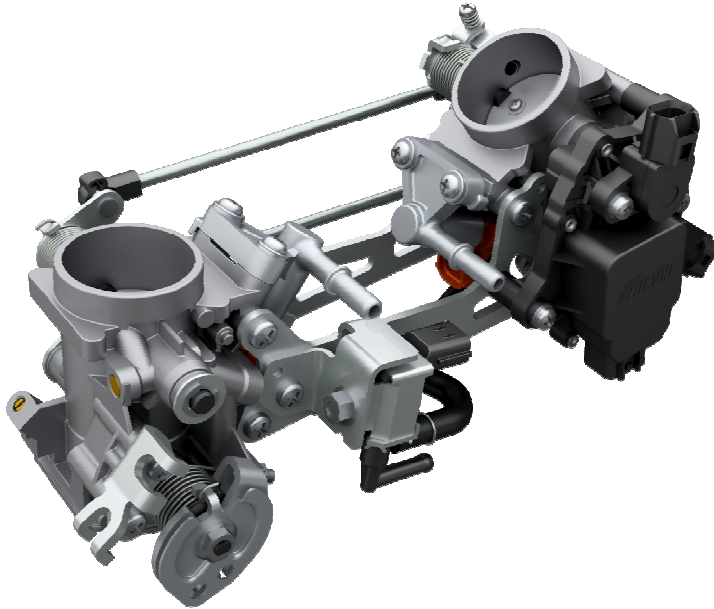
Cylinder head



- The cylinder heads feature Suzuki's original Dual Spark Technology for greater combustion efficiency, better fuel economy and cleaner emission.



### SDTV Fuel injection



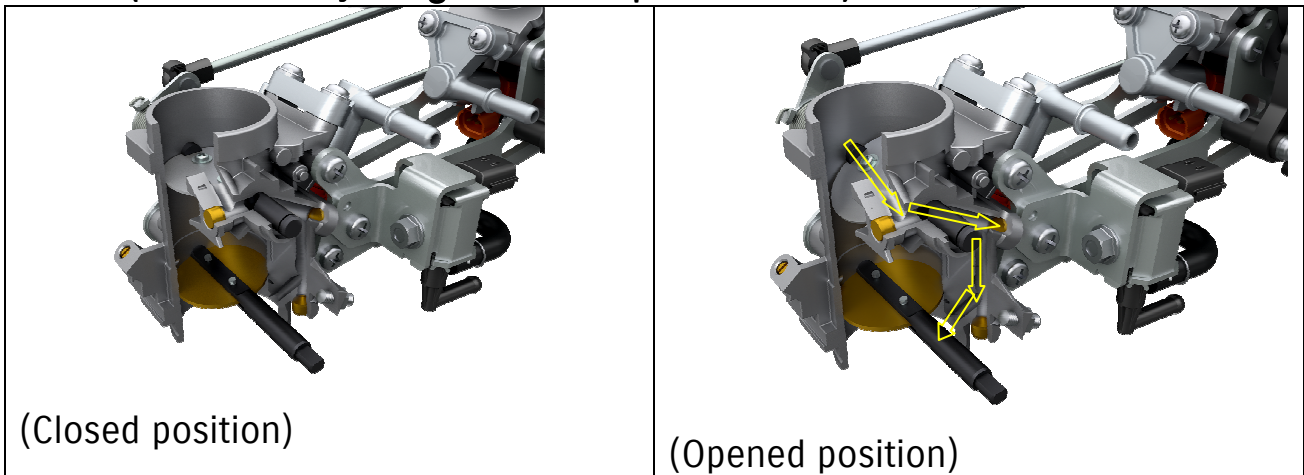
SDTV Throttle body



10-hole injector

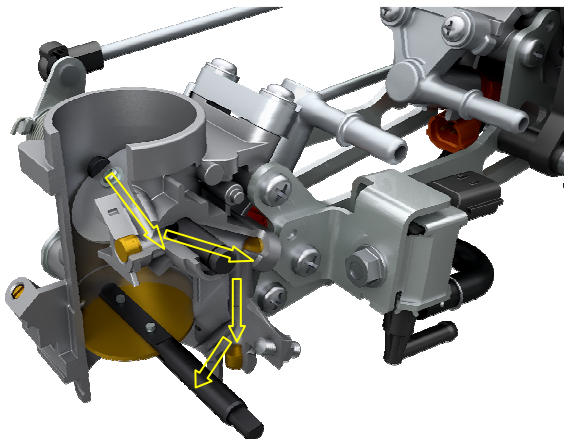
- Fuel injection system employs Suzuki's original, SDTV (Suzuki Dual Throttle Valve) 39mm throttle bodies, and the secondary throttle valves are controlled by servo motor for smooth power delivery and optimum combustion efficiency.
- 10-hole; long-nosed type fuel injectors used on each throttle body improve fuel atomization for better combustion efficiency and while reducing fuel consumption.
- Fuel injection works with O2 feedback system and intake pressure sensor for optimum combustion efficiency in various conditions, reduces emissions to meet Euro 4 requirement.

### TI-ISC (Throttle body Integrated Idle Speed Control)



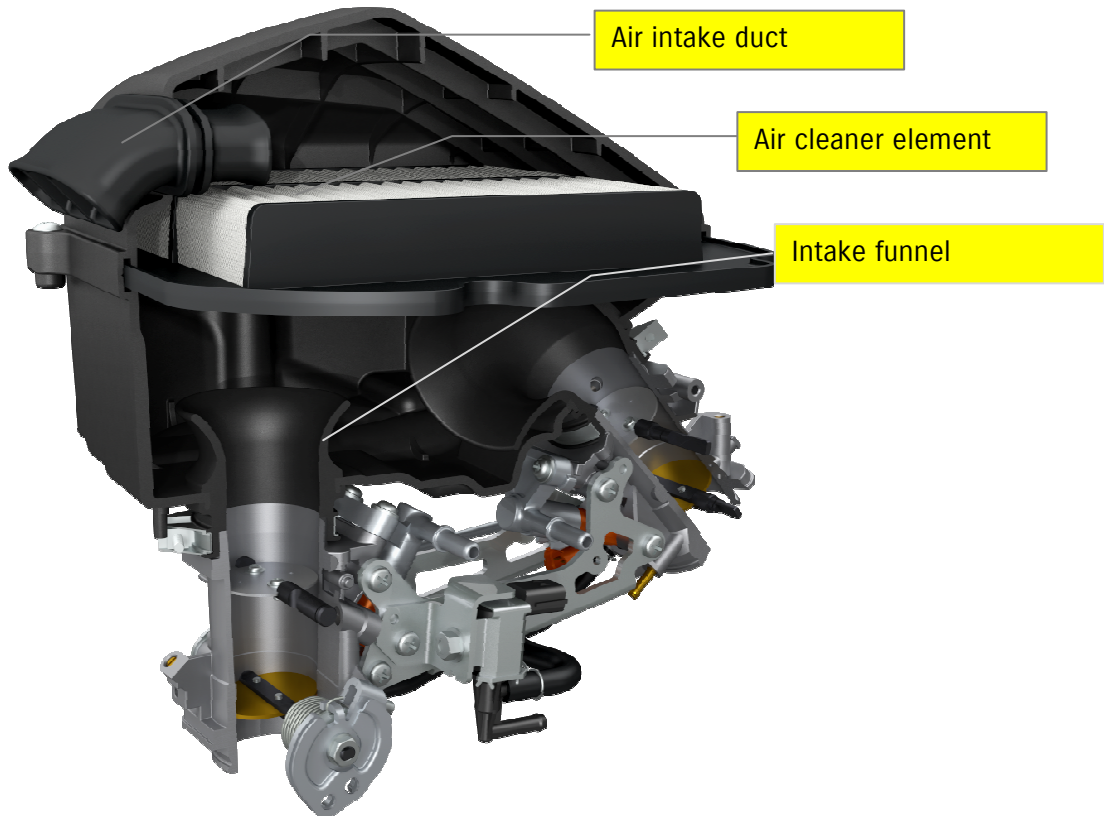
- Suzuki's patented, Throttle-body Integrated Idle Speed Control (TI-ISC) contributes to better startability and stability as well as lower emissions after starting the engine. It is also compact and lightweight.
- Idling air flow is regulated by the shaft notch section through rotating secondary butterfly valve.

### Low RPM Assist



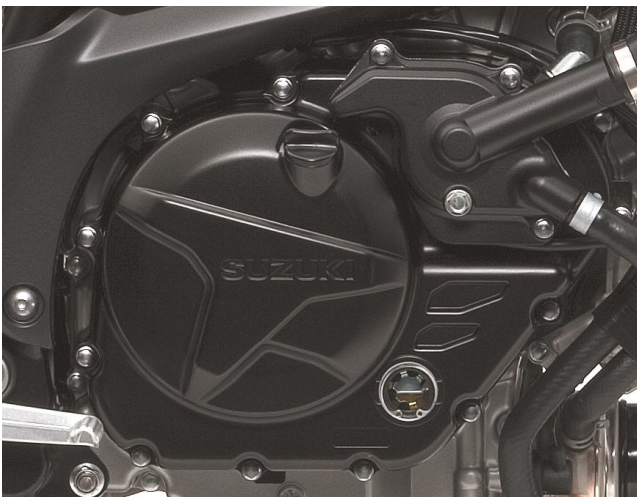
- New technology is featured on the new SV650, TI-ISC has the Low RPM Assist control function.
- In launching operation or running at low rpm, engine rpm sensor sends signal to ECM, and activate ISC system. By opening the ISC circuits, engine rpm slightly raises.
- Normally in launching the motorcycle, engine rpm drops when the clutch is engaged. This general behavior causes engine stall. The Low RPM Assist helps rider for smoother launching operation in low rpm range.
- It also makes easy to ride at low speed in stop and go traffic.

## Air Cleaner



- Air cleaner is also newly designed to match with required intake capacity.
- The funnels in the air box are of staggered lengths to heighten mid-range torque.

## Clutch cover



SV650 clutch cover



SFV650 clutch cover

## Exhaust system



Above: SV650 exhaust system;

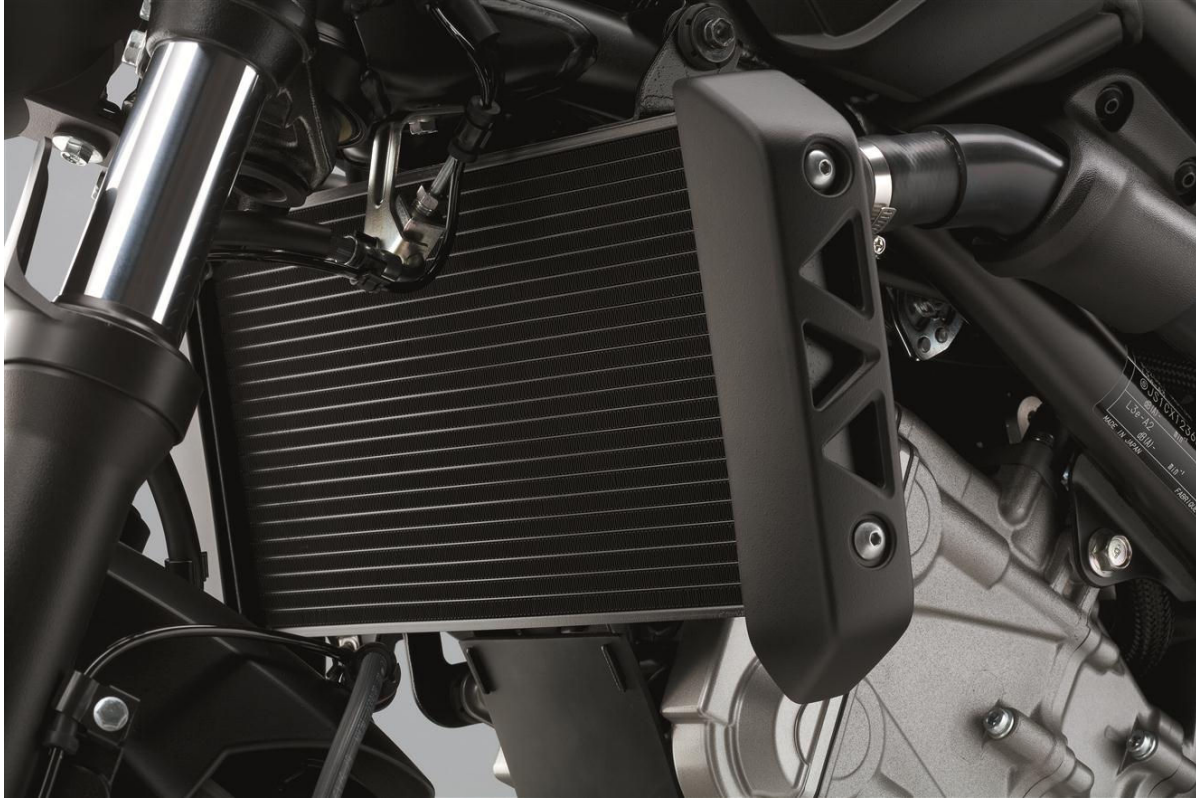


Above: SFV650 exhaust system

- Exhaust system is newly designed to achieve lighter weight, clean looks, and brisk acceleration performance.
- The exhaust system is 2 into-1 system. Lower chamber found on Gladius is eliminated. The design contributes to lighter weight, and stronger low-to-mid range output.
- Triangle shaped muffler body enhances its sporty character and produces unique V-twin rumble.
- The exhaust system contains catalyzer for clean emission. It conforms to the strict Euro 4 emission regulations. (European spec)

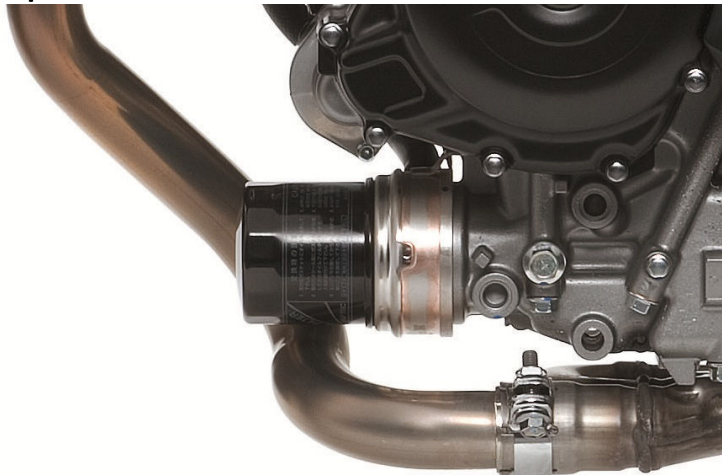
## Cooling system

### Radiator



- The Newly designed, high-efficiency radiator with enlarged cooling fan; has strong cooling performance.

### Liquid-cooled Oil cooler



- Liquid-to-liquid oil cooler is used on SV650.

## Multi-function Instrument panel



- Newly designed, full LCD Instrument cluster is lightweight and compact. Thanks to its full-LCD design, it eliminates motor and needle mechanics, it weighs only 275g.
  - Instruments are brightness-adjustable full LCD. The LCD readouts includes;
    - Speedometer
    - Tachometer
    - Odometer
    - Dual trip meter
    - Gear position
    - Water temperature
    - Driving range
    - Average fuel consumption
    - Instant fuel consumption
    - Fuel gauge
    - Clock
- The image shows three different LCD readouts for fuel consumption and range:

  - 1. Instant fuel consumption: Shows a fuel gauge with a needle and a digital readout of 20.0 km/L.
  - 2. Average Fuel consumption: Shows a fuel gauge with a needle and a digital readout of 5.0 L/100km.
  - 3. Driving Range: Shows a fuel gauge with a needle and a digital readout of 200 km.
- White back light for good visibility in night time riding.
  - LED indicators include a turn signal, high-beam, Neutral, Malfunction indicator, ABS and coolant temperature /oil pressure indicator lights are designed to easy to recognize.
  - Bar-type tachometer features “peak-hold” function, which shows peak rpm when rpm drops. So rider can recognize the peak rpm of the last moment when downshifting.

## Suzuki Easy Start system



ECM



Starter switch

- SV650 features a new Suzuki Easy Start system, first featured on GSX-S1000.
- On the regular motorcycle engine starting, rider need to press-hold the starter switch until the engine fires up. On the SV650, all you need to do is just one-push the starter switch just like the recent automobile's engine start system. The ECM recognizes the signals and keeps starter motor working for a certain time.

## Chassis design

Newly designed chassis is engineered in compact, lightweight package to provide agile, fun-to-ride character for variety of riders. And it is aimed to perform best in real world riding conditions - all roads which riders meet on public roads, city traffic, highway, rural roads and winding roads.



Model	Curb weight
SV650/ABS	195kg (430lbs) / 197kg (434lbs)
SFV650/ABS	202kg (445lbs) / 205kg/(452lbs)

- The curb weight of ABS model is reduced by 8kg from SFV650ABS, non-ABS model is lighter than SFV650 by 6kg.
- More than 70 new parts and components are built into new chassis to achieve lighter weight and slimmer bodyworks.



## Slim bodywork



New SV650



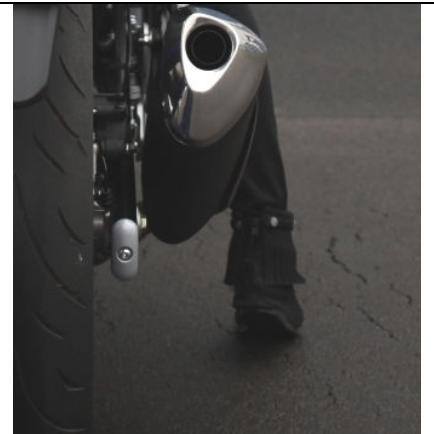
SFV650

- Thanks to its V-twin engine, the seat and fuel tank meet slim, it makes feet reach easier.
- Fuel tank width (at widest point) is reduced by 64.5mm while maintaining the 14.5L (for north american spec) fuel capacity.  
(Fuel capacity of the European spec and California spec are 13.8L because of the canister system)

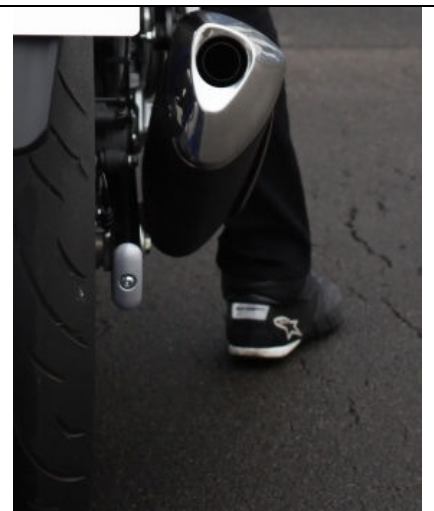
## Seat height and Riding position



165cm tall rider



170cm tall rider



- The seat height is 785mm, the lowest in the 600-800cc street bike class.
- Rider can put their feet on the ground easier as the new side covers are made slimmer. The seat to fuel tank interface has a slim design too.
- Riding position is designed for sporting comfort. Sporty yet upright riding position reduces rider's fatigue and increase the visibility.

### Front forks



- 41mm front fork has 125mm stroke, provide sporty yet plush ride.

### Rear suspension



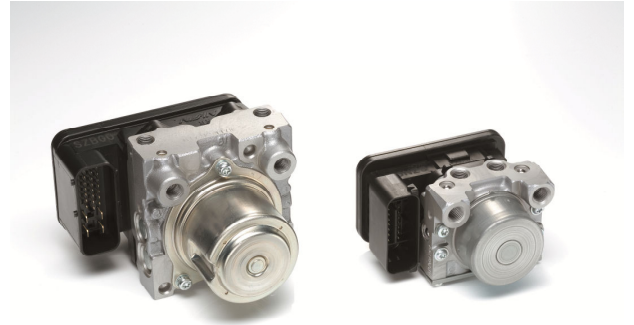
- Link-type shock unit has 63 mm stroke, tuned for a superb progressive feel, reacts efficiently to road conditions, delivering an agile and stable feel.
- Spring pre-load is 7-way adjustable.

## Brakes and ABS

Dual disc front brakes



ABS control unit



Left: SFV650

ABS Unit

Right: SV650

ABS Unit

- Two piston front brake calipers are mated with 290mm floating-mount dual discs provides strong braking performance.
- Antilock Brake System (ABS)\* monitors wheel speed 50 times per wheel rotation, and matches stopping power to available traction.
- New ABS control unit, produced by NISSIN, is compact and lightweight design, which is lighter than that of SFV650 by 830g.

\* Please note that ABS is a supplemental device for brake operation, not a device for shortening stopping distance. Always remember to reduce speed sufficiently before approaching curves and corners.

## Wheels and tires



- 5-spoke cast aluminum wheels, manufactured by TPR, are made light weight, provide nimble handling and sporty appearance.
- Dunlop radial tires provide great grip in sport riding on the public roads.

	Rim Size	Tire size	Tire Brand
Front	17M/C x 3.50MT	120/70ZR17M/C (58W)	DUNLOP
Rear	17M/C x 5.00MT	160/60ZR17M/C (69W)	DUNLOP

Styling design concept:

## “Clean, Slim and Simple”

It impresses you its clean, slim, simple looks of body lines.

- Overall shape is designed to express its slim, lightweight design and to enhance the strength of V-twin engine.
- Clean, neatly shaped body lines are aimed to be accepted by wide range of riders.
- A combination of black plastics and painted parts emphasize its slim, sporty and lightweight looks.
- The body lines are made of flat line on the top and angular line from front axle to tail section.



Image sketch



## Headlight and Turn signal lights



- Round shaped headlight is multi-reflector type with 12V60/55W bulb.

## LED rear combination lights



- Thin, flatly shaped rear combination lights use LED instead of Gladius's bulb -type tail/stop lights.
- LED lights are high visibility and long life.



## Fuel tank and cockpit



- The fuel tank is narrowly shaped while maintaining the 14.5L fuel capacity.
- Sporty racing stripes featured on the fuel tank enhances its sporty character.

## Seat



- Seat shape is tailored for sporty riding – easy to move around, good grip of seat skin.
- Underneath the pillion seat, two luggage loops are installed. It helps rider to carry item on the pillion seat.



**Color Variations**



Pearl Glacier White



Metallic Triton Blue



Pearl Mira Red



Metallic Mat Black



## Specifications

<b>Overall Length</b>		2140 mm
<b>Overall width</b>		760 mm
<b>Overall height</b>		1090 mm
<b>Wheelbase</b>		1445 mm
<b>Ground clearance</b>		135 mm
<b>Seat height</b>		785 mm
<b>Curb mass</b>		195kg (non-ABS model) 197kg (ABS model)
<b>Engine type</b>		Four-stroke, liquid-cooled, DOHC, V-twin
<b>Bore x stroke</b>		81.0 mm x 62.6 mm
<b>Engine displacement</b>		645 cm <sup>3</sup>
<b>Compression ratio</b>		11.2:1
<b>Fuel system</b>		Fuel injection
<b>Starter system</b>		Electric
<b>Lubrication system</b>		Wet-sump
<b>Transmission</b>		6-speed constant mesh
<b>Primary drive ratio</b>		2.088 (71/34)
<b>Final drive ratio</b>		3.066 (46/15)
<b>Suspension</b>	<b>Front</b>	Telescopic, coil spring, oil damped
	<b>Rear</b>	Link type, coil spring, oil damped
<b>Rake / trail</b>		25° /104 mm
<b>Brakes</b>	<b>Front</b>	Disc brake, twin
	<b>Rear</b>	Disc brake
<b>Tires</b>	<b>Front</b>	120/70R17M/C (58W) tubeless
	<b>Rear</b>	160/60R17M/C (69W) tubeless
<b>Ignition system</b>		Electronic ignition
<b>Fuel tank capacity</b>		14.5 L (North American spec) 13.8 L (European, California spec)