PRESS INFORMATION

October, 2016

Introduction

Introducing the all-new, 2017 Suzuki GSX-R1000 and GSX-R1000R.
It has been three decades and more than a million sold since the GSX-R line was born. A decade and a half since the first GSX-R1000 changed the open sportbike class forever.

Now, the 6th-generation GSX-R1000 is redefining what it means to be The Top Performer. It embodies the life work and professional ambition of Suzuki engineers who are passionate about the GSX-R1000 and its place in motorcycle history. Men who love riding and racing, enthusiasts determined to restore the GSX-R1000 to its proper title of The King of Sportbikes.

It is the most powerful, hardest-accelerating, cleanest-running GSX-R ever built.

It is also the most compact, the most aerodynamic and the best-handling GSX-R1000, with smoother throttle response and better combustion efficiency. With a supremely effective electronic engine management system that doesn't require a degree in engineering to understand--and doesn't need constant adjustment by a squad of computer technicians to work.

Above all, it is a GSX-R. By definition, it is built to run right and be reliable, and designed to help make everybody a better rider. By plan, it is engineered using experience gained during 30 Years of Domination in production-based Superbike, Superstock and Endurance races worldwide, combined with new proprietary technology developed in the MotoGP World Championship.

Available in two versions, the standard GSX-R1000 and the limited-production GSX-R1000R. Both versions come fully equipped for the street, ready for licensing. But take off the mirrors and the license plate and tape the lights and they're also ready for closed-course fun.

The heart of a racebike beats in every GSX-R1000 and GSX-R1000R, delivering an invitation: Own The Racetrack.

Continuing the Proud, Traditional GSX-R Philosophy of Performance

The new GSX-R1000 incorporates more than 600 new parts and components. But the proud, traditional, core engineering philosophy of producing the best possible performance has been inherited by the latest GSX-R1000.

Focusing On Great Sportbike Fundamentals: Run. Turn. Stop.

Throughout 30 years of GSX-R development, Suzuki engineers have focused on the fundamentals that make a great sportbike. Those fundamentals can be distilled down into three simple, yet powerful words: Run. Turn. Stop. The newest GSX-R1000 is built using the latest state-of-the-art technology to embody those fundamentals into the powerful combination of Acceleration, Cornering and Braking.

Endurance-proven durability, reliability and consistent performance

For three decades, the Suzuki GSX-R line has earned its reputation for durability, reliability and consistently excellent performance in endurance racing, overcoming the toughest conditions over incredible durations. The latest GSX-R1000 is engineered to continue that legacy of outstanding results over the long haul.

Racetrack potential

From the beginning, the GSX-R has been known for its racetrack potential. The first GSX-R was introduced as being Born On The Circuit, and ready to Return To The Circuit. Inspired by factory racebikes, the original GSX-R immediately proved itself racetrack capable. The new GSX-R1000 continues that tradition, whether set up in relatively stock form for track-day fun or modified for full-on races.

These were key elements in the development of the 2017 GSX-R1000. Its mission is to deliver streetbike fun and racetrack potential for every rider.


SUZUKI
SUZUKI

The product concept of the GSX-R1000 is:

No.1 Sportbike

The goal is, regain the King of Sportbikes crown.

The 6th-generation GSX-R1000 is redefining what it means to be The Top Performer. It embodies the personal and professional ambition of Suzuki engineers, who are determined to restore the GSX-R1000 to its proper title of The King of Sportbikes.
It is the most powerful, hardest-accelerating, cleanest-running GSX-R ever built.

Engine design

- The most powerful GSX-R engine ever built.
- Increased top-end without sacrificing low-to-mid range power.
- Optimized engine dimensions to enhance cornering performance.
- Increased performance and drivability with MotoGP derived technology.
- Endurance-race-proven durability and reliability.

Chassis design

- The most compact GSX-R1000 ever produced.
- Optimized dimensions to increase rider's confidence in Run. Turn. Stop.
- Rider-oriented handling.
- The most aerodynamic GSX-R1000 in history.

Electronics design

- Added rider confidence in Run. Turn. Stop.
- Increased rider usability and convenience.

Styling design

- Retained GSX-R styling identity.
- Refined wind tunnel R&D for aerodynamic performance.
- MotoGP-derived shape and color.
- Sleek bodywork enhances lightweight chassis.

GSX-R1000 and GSX-R1000R

Suzuki proudly offers the new GSX-R1000 in two versions to meet various demands. The engine performance, chassis platform, bodywork and racing potential are shared by both versions.

	GSX-R1000	GSX-R1000R
Engine	All-new 999.8 cm^3 liquid-cooled DOHC inline-four Max output: 148.6kw(202ps) Max torque: 117.6Nm(12.0kgfm)	← ← ←
Chassis /weight	All-new aluminum frame Curb weight :200kg(Non ABS) :202kg(ABS)	← 203kg(Only ABS)
Bodywork	New aerodynamic bodywork	←
Electronics	Ride by wire throttle bodies Motion Track Traction control S-DMS Motion Track Brake System	← ← ← ← Quick shift system Launch control system
Exhaust components	Titanium exhaust muffler	←
Chassis components	SHOWA BPF forks SHOWA Rear shock	SHOWA Balance Free Front forks SHOWA Balance Free lite shock Lightweight upper triple clamp
Electric	LED headlight LED Turn signals* Full LCD instrumentation *Not available in North America.	← ← ← (black LCD instrument panel face) LED position lights Lightweight battery

The GSX-R1000 is designed to deliver closed-course-ready potential and street practicality for racers and street riders. It is great as the basis for building a racebike and is also great for sport riding on tracks and winding roads.
The GSX-R1000R is designed for riders who want a fully-equipped, race-ready machine in stock trim. It is great for track-day use or as a Superstock class machine.

Engine Design target

All-new, Four-stroke, liquid-cooled, DOHC, 999.8cm^3 inline-four engine, is the most powerful, hardest accelerating, cleanest running GSX-R engine ever built.

In building the new power plant, the engine design targets were set as follows:

1. Increase top-end power without losing low-to-mid range power

To defeat the competition, increasing top-end power was an essential target. However, the GSX-R line has always been known for making broad power across the rev range, combining low-end and mid-range torque with an exciting top-end rush. The new GSX-R1000 engine is designed to produce the most top-end power without sacrificing low-end and mid-range power and torque. To achieve this target, technology developed in MotoGP racing has been used in the engine design.

2. Optimize engine dimensions and layout to enhance cornering performance.

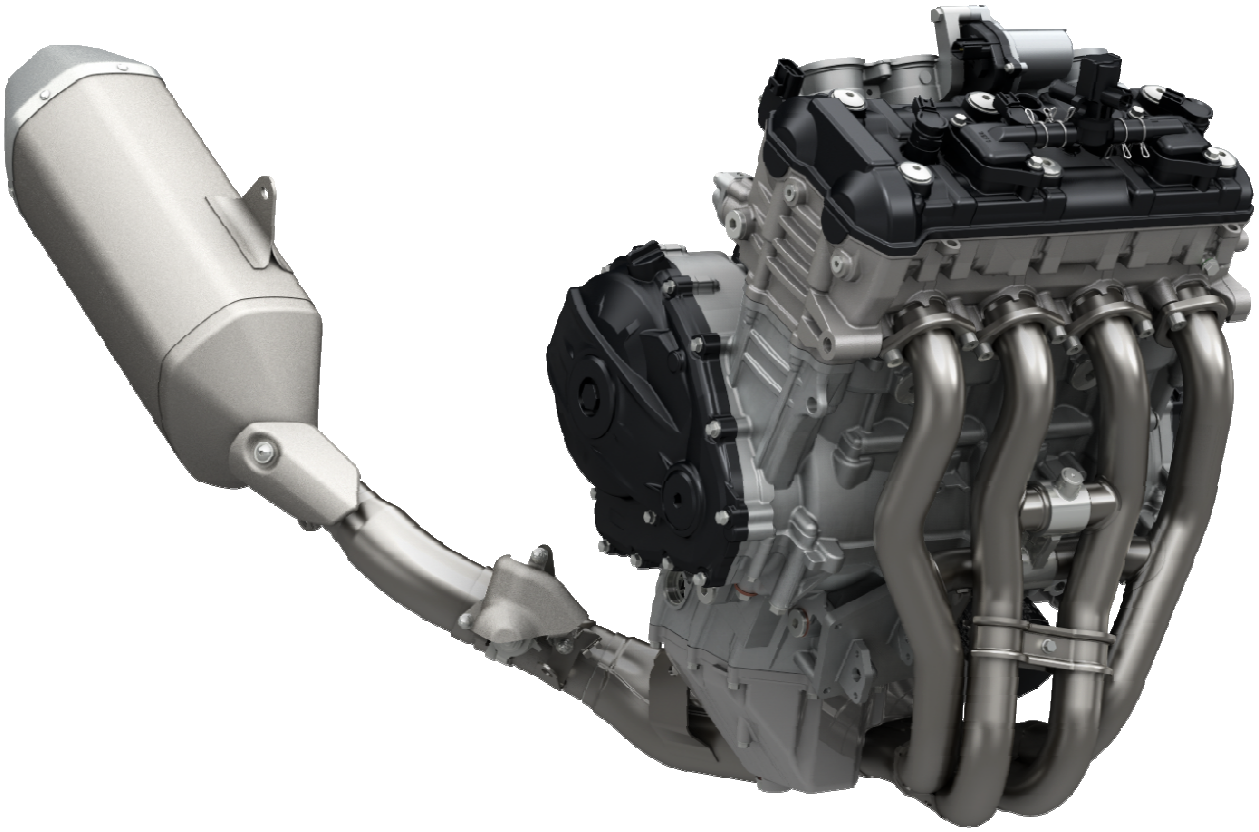
Conventional engine design focuses on power delivery. However, the dimensions and layout of the engine can heavily influence handling performance. That's why an integrated team of Suzuki engine and chassis designers worked together to ensure that the dimensions and layout of the new engine worked with the new chassis to improve cornering performance.

3. Increase drivability with advanced electronics.

To put more than 200ps to the ground, advanced electronics become essential. MotoGP-derived technology is used to increase the new GSX-R1000's drivability, without making the system too complicated.

4. Emphasize durability and reliability.

Historically, the GSX-R line has shown its strength in endurance racing, where long-distance durability and reliability at maximum performance are essential. Durability and reliability have been emphasized throughout the design of the new GSX-R1000 engine.

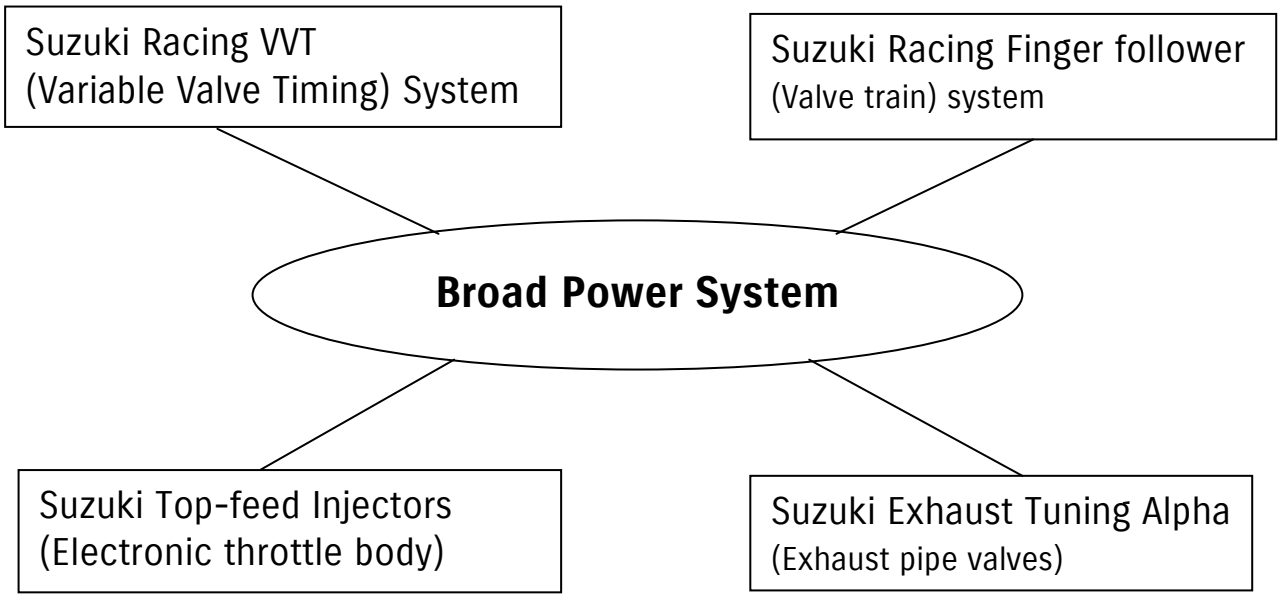


	New GSX-R1000	Current GSX-R1000
Displacement	999.8cm^3	999.1cm^3
Bore x Stroke	76.0 x 55.1mm	74.5 x 57.3 mm
Compression ratio	13.2 : 1	12.9 : 1
Valve train system	Finger follower	Bucket-tappet
Fuel delivery	Ride-by-wire Electronic throttle bodies	SDTV throttle bodies
Balancer shaft	No	Yes
RPM Red line	14,500rpm	13,500rpm
Max output	148.6kw / 13,200rpm (202ps)	136.4kW / 11,500rpm (185ps)
Max torque	117.6Nm / 10,800rpm (12.0kgf-m)	116.7Nm / 10,000rpm (11.9kgf-m)

Broad Power System – MotoGP technology

To achieve the first engine design target “Increasing top-end power without losing low-to-mid range output”, MotoGP derived technologies are built into new GSX-R power plant; that is the Broad Power System.

The combination of Suzuki Racing VVT (SR-VVT), Suzuki Racing Finger follower valve train, Suzuki Exhaust Tuning-Alpha (SET-A) and Suzuki Top Feed Injector (S-TFI) systems form the Broad Power System designed to increase high-rpm performance and top speed without detracting from lower-rpm and mid-range performance. The result is strong, linear power and enhanced acceleration throughout the rpm range.

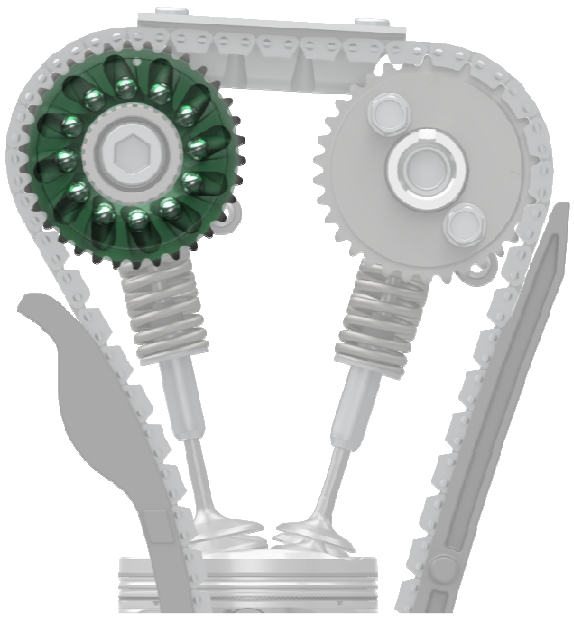


Suzuki Racing VVT (Variable valve timing system)

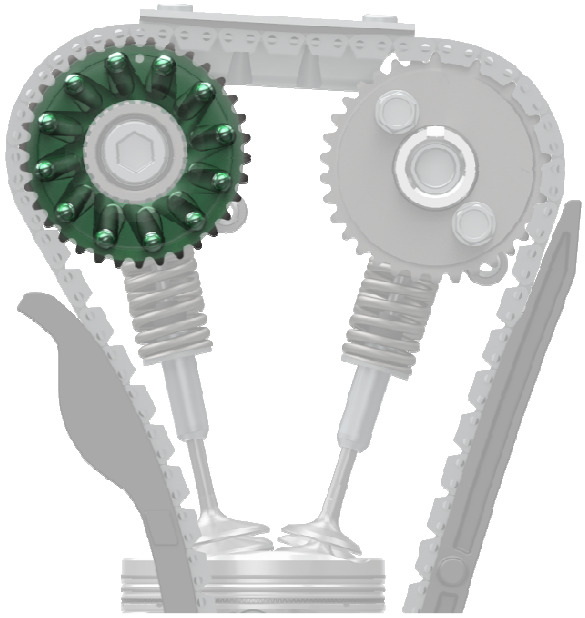
Exploiting the higher engine speed and increasing the high-rpm power without affecting lower and mid-rpm power presented a challenge. The valve timing typically needed for higher peak power also reduces mid-range and lower-rpm power, and vice versa. The answer came from the proprietary, proven Suzuki Racing VVT (SR-VVT) System developed for Moto GP racing. Unlike complicated variable valve timing systems used by other manufactures, the SR-VVT is simpler, more compact, lighter and more positive. The centrifugally operated system is built into the intake cam sprocket and an adjacent guide plate, using 12 steel balls and slanted grooves to rotate the sprocket and retard the intake valve timing at a pre-set rpm, adding significantly to high-rpm power.

The beauty of the SR- VVT system is in its compact simplicity, light weight, reliability and seamless operation. Centrifugal force is constantly produced any time the engine is running, and is free in the sense that it does not use power that could otherwise reach the rear wheel. From the start of development about a decade ago, Suzuki MotoGP racers have never been able to feel or detect when the system moved to change the valve timing. What they have been able to feel is a seamless, significant increase in high-rpm power, without sacrificing any low-rpm or mid-range performance.

Low rpm



High rpm



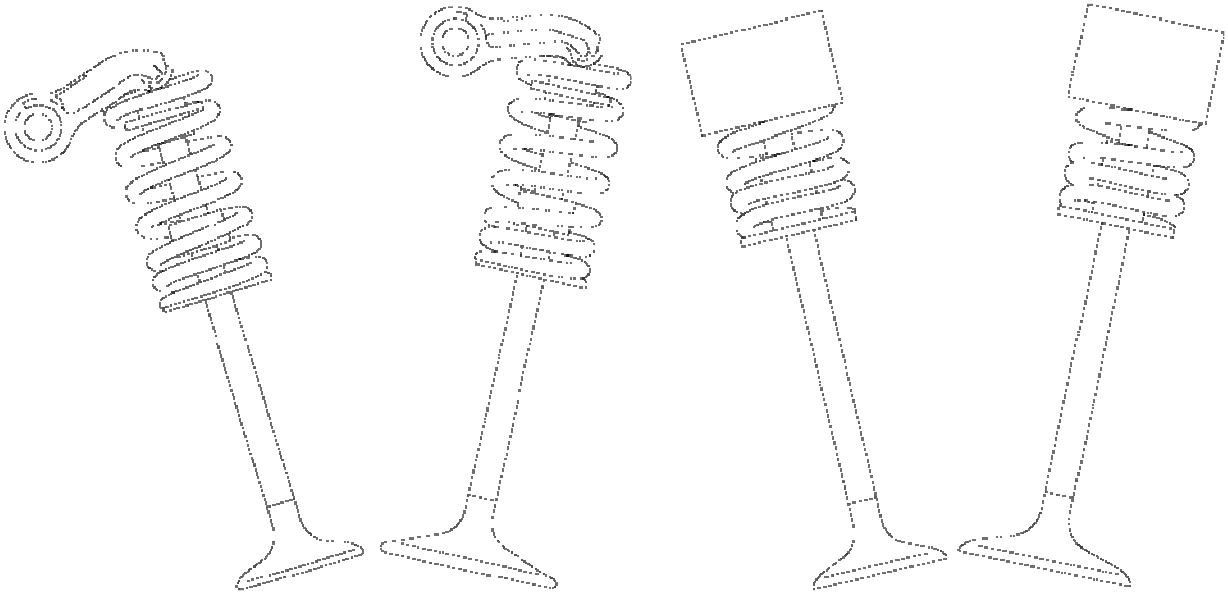
- 12 steel balls are positioned between slanted grooves in the intake cam sprocket and straight grooves in an adjacent guide plate attached directly to the camshaft. As centrifugal force moves the balls outward at high rpm, the offset grooves align, rotating the position of the cam sprocket on the camshaft and retarding intake cam timing.
- Intake cam timing is thus optimized for both high-rpm and low and mid-rpm ranges; extra top-end is added, without losing low-to-mid range power.
- The system is built into existing parts, taking up no extra room in the engine, and the weight increase is minimal.

Suzuki Racing Finger follower valve train

The new GSX-R1000 uses a valve train developed in MotoGP competition, using thinner-wall, hollow camshafts operating lighter, F1-style pivoting finger followers. Each finger follower is 6 grams lighter than a conventional bucket tappet (10 grams vs. 16 grams), and because each follower pivots on a fixed shaft, its moving mass is just 3 grams. The lighter moving mass allows maximum engine rpm and valve lift to be increased while improving valve response and maintaining accurate valve control. Each finger follower in the GSX-R1000 is designed based on the actual followers used in the GSX-RR MotoGP racebike, including a DLC coating to increase durability.

New valve train

Current valve train



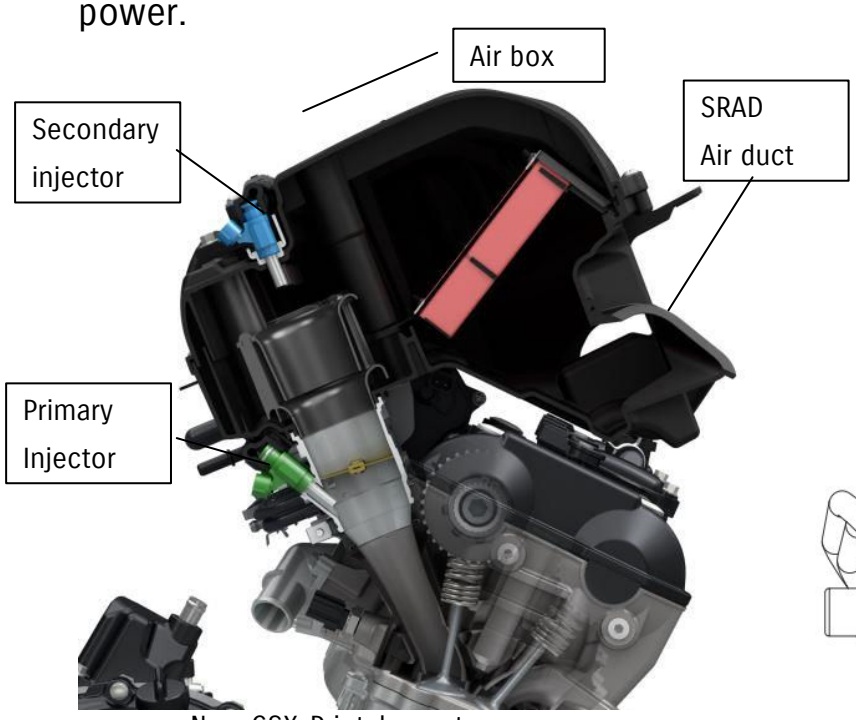
- The new GSX-R1000's valve train system has been changed from previous model's bucket-tappet system to a new finger follower rocker arm system to improve valve control and allow higher rpm.

- Because the rocker arm pivots on a fixed shaft, the moving mass per valve is significantly reduced compared to the bucket-tappet system.

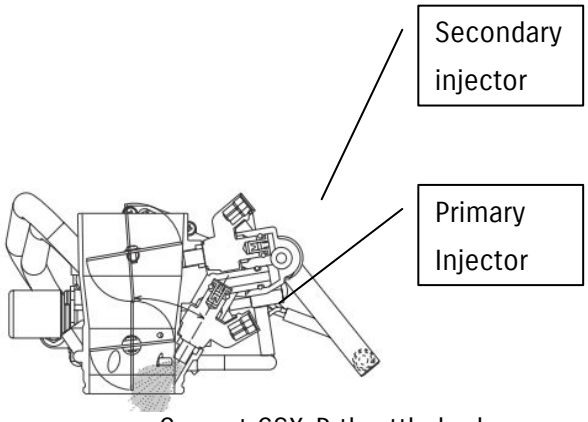
- The reduced moving mass also allows increased valve lift and higher peak rpm, increasing peak output. Valve response and control are also improved throughout the rev range.

Suzuki Top Feed Injectors (S-TFI)

New, ride-by-wire downdraft throttle bodies are 19 mm shorter, simpler, lighter and more compact than the previous model's throttle bodies, with a larger bore (46 mm versus 44 mm). The new throttle bodies each have a single butterfly valve controlled by an advanced electronic engine management system, and each cylinder is fed by two ultra-fine-atomization 10-hole injectors. One injector is mounted at a steep angle in the throttle body itself and operates any time the engine is running. A second showerhead Injector—also known as a Top Feed Injector (TFI)—is mounted in the top of the airbox, directly over each throttle body velocity stack, and operates at higher rpm. The TFI showerhead injector delivers fuel in an optimized spray pattern designed to enhance combustion efficiency, throttle response and top-end power.



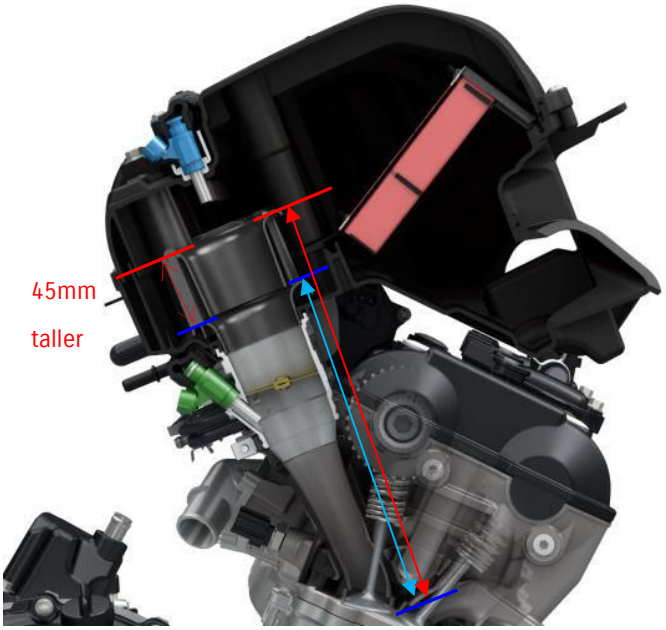
New GSX-R intake system

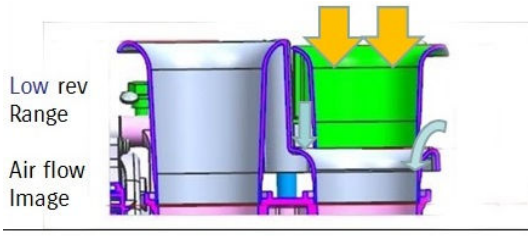


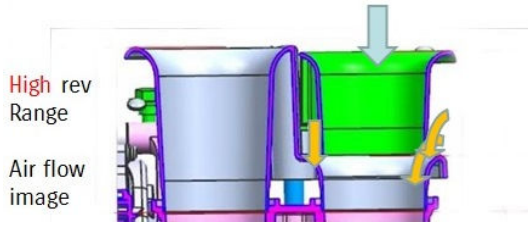
Current GSX-R throttle body

- The primary injector located in each throttle body operates any time the engine is running.
- The secondary injector located in the top of the air box operates at higher rpm and delivers finely atomized fuel to the combustion chamber. The dual-injector design helps produce greater top end power without detracting from low-rpm and mid-range power.
- The air cleaner is designed to flow more air, to match the increased intake capacity.

Stacked Intake Funnels





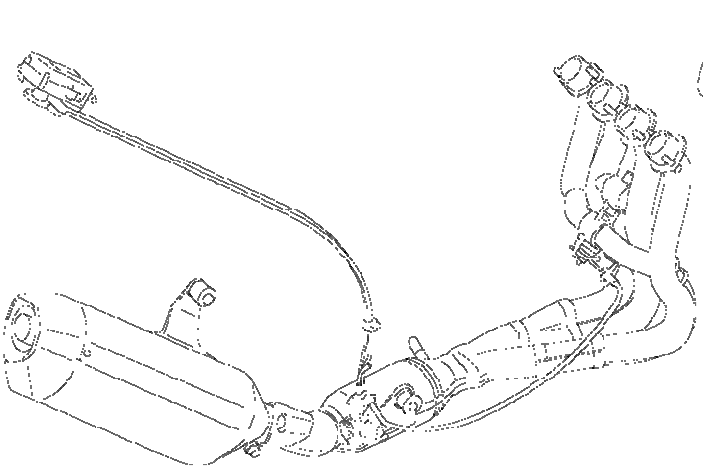


The new Suzuki Dual-Stage Intake (S-DSI) system delivers the advantages of variable-length intake funnels (also known as velocity stacks) without the extra weight, complexity and cost. Two of the four intake funnels use a new stacked, dual-stage design, with a longer funnel positioned above a short funnel, and a gap between the two parts.

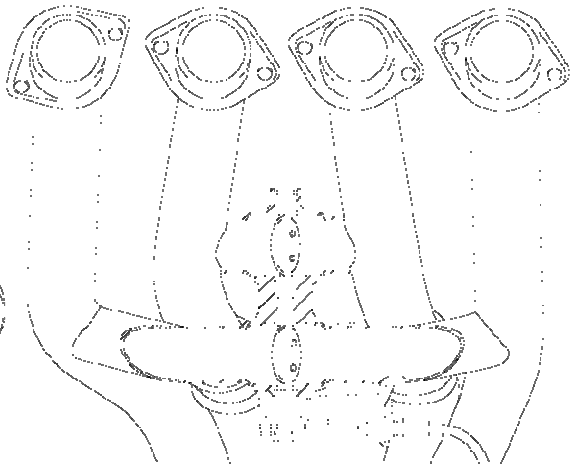
- The S-DSI system has dual-stage intake funnels for cylinders #1 and #4, and single-stage, conventional intake funnels for cylinders #2 and #3. Normally, shorter conventional intake funnels are better for high-rpm power while longer conventional intake funnels are better for low and mid-range power. Thanks to the physics of air flow, S-DSI intake funnels provide the best of both, acting like a longer intake funnel at low and mid rpm, and acting like a shorter intake funnel at higher rpm.
- At low and mid rpm, most of the air flows through the longer, upper funnel into the short funnel, increasing low-end and mid-range power and torque. At higher rpm, more air flows around the base of the longer upper funnel and directly into the short lower funnel, increasing top-end power and torque. The combination of two S-DSI funnels and two conventional funnels helps produce a broader, smoother powerband and a seamless transition from low and mid-range into the higher rpm range.

Suzuki Exhaust Tuning-Alpha (SET-A)

The new GSX-R1000's 4-into-2-into-1 thin-wall Suzuki Advanced Exhaust System (S-AES) is also designed to increase high-rpm horsepower without reducing mid-range and lower-rpm power and torque. GSX-R1000 models have long used a servo-operated Suzuki Exhaust Tuning (SET) butterfly valve built into the mid- pipe to help maximize torque throughout the rpm range by adjusting back pressure based on engine rpm, throttle position and gear position. But the new GSX-R1000's exhaust system improves on that idea with the addition of new Suzuki Exhaust Tuning-Alpha (SET-A) butterfly valves.
A header balance tube connects the head pipes for cylinders #1 and #4, and another header balance tube connects the head pipes for cylinders #2 and #3, a design feature that normally increases high-rpm power by reducing back pressure and adding volume, at the expense of mid-range and lower-rpm power. Suzuki engineers added two servo-operated SET-A butterfly valves, one in each header balance tube. The SET-A valve in each header balance tube remains closed to enhance lower-rpm and mid-range power, then opens to increase volume, reduce back pressure and work with pressure waves to add significant power at higher rpm.



New exhaust system



SET-A cutaway image

Even-firing-order in-line four engine

Suzuki engineers carefully considered using non-conventional, uneven-firing-order crankshaft phasing versus the GSX-R's traditional even-firing-order crankshaft phasing.

The theoretical advantages of uneven firing order can apply in MotoGP racing where engine output exceeds 230 horsepower and the biggest obstacle to turning good lap times is cornering traction and the rider's ability to feel how well the rear tire is hooked up at any giving throttle opening. But there are very real inherent engineering challenges that must be overcome with an uneven firing order. It's more difficult to produce strong power and torque with an uneven firing order, especially at low-rpm and in the mid-range. Vibration is increased, requiring much thicker and heavier crankcases and a counterbalancing shaft, and associated mechanical losses contribute to overheating.

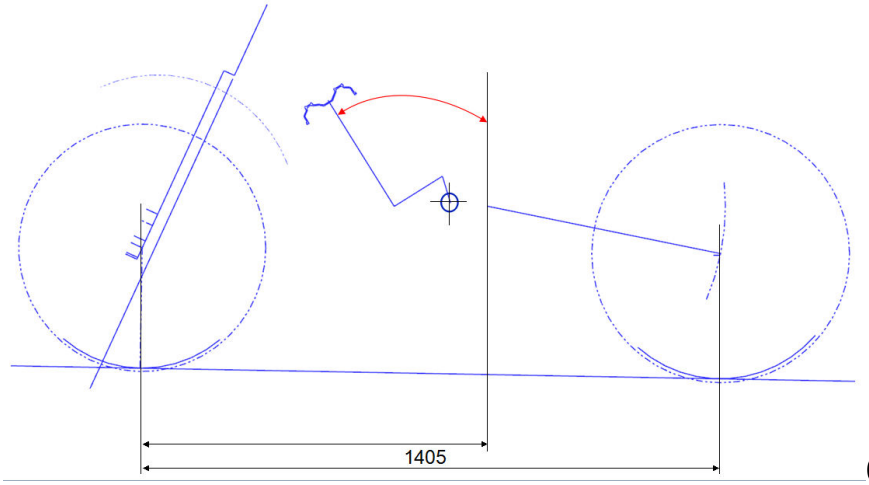
The big question Suzuki engineers faced was whether or not, for a production motorcycle, the theoretical advantages of an uneven firing order design outweighed the inherent complications. Including the fact that solving the problem of making strong power with an uneven firing order while controlling vibration, heat and weight gain would make the motorcycle more expensive, significantly increasing the retail price.

With testing, the engineers found that they could enhance traction and feel with a superb chassis design and effective electronics. And they decided that the even-firing-order, screamer engine sounded better, too.

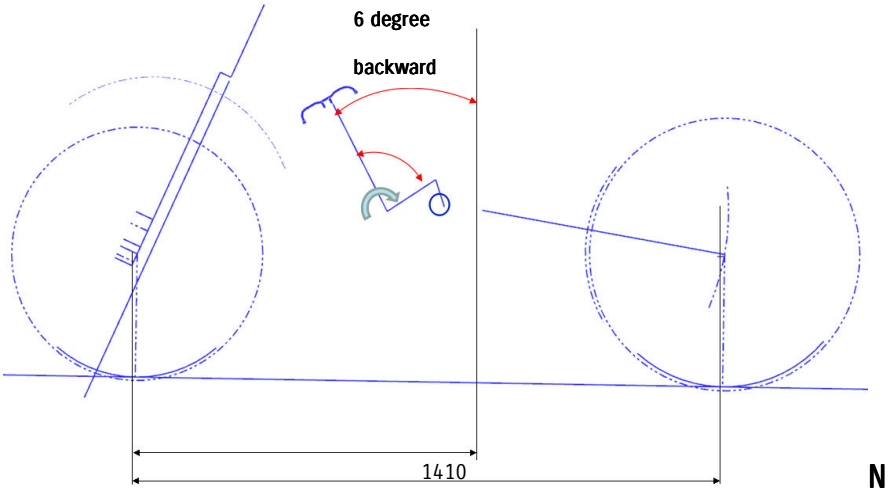
Designing the engine to help increase cornering performance

The previous generation GSX-R1000 has won its share of National Superbike and both National Championship and World Championship endurance races around the world. But professional racers and teams asked for more front-end feel and feedback under racing conditions. Testing with purpose-built racebikes revealed that length of the engine could improve the rider's ability to feel what the front tire was doing during hard cornering on the racetrack.

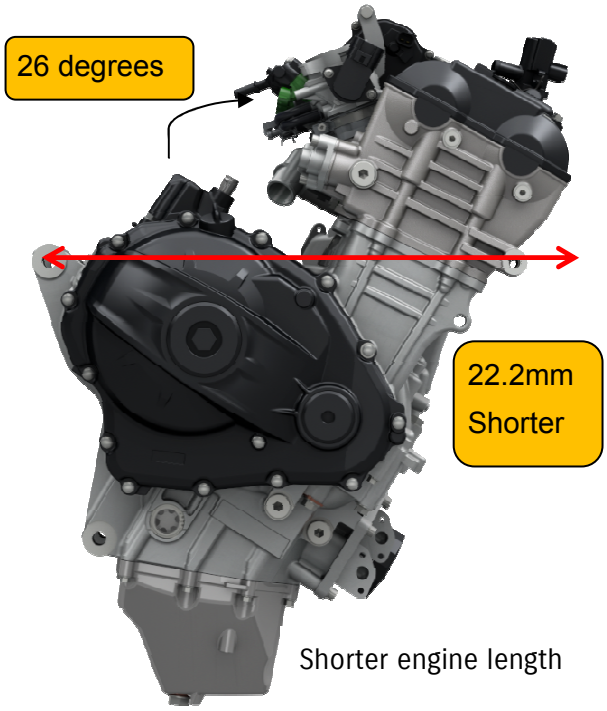
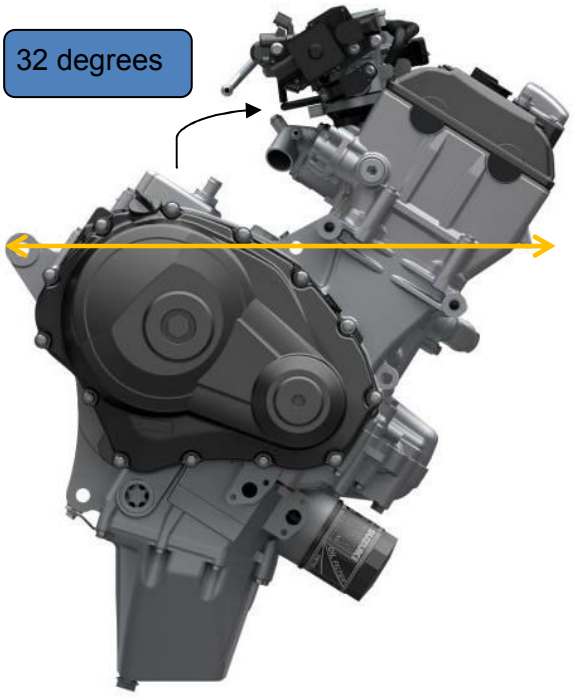
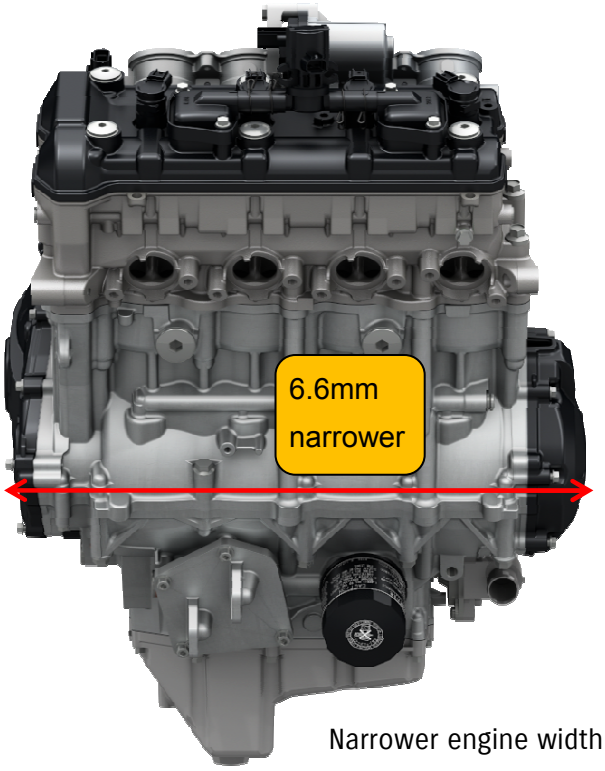
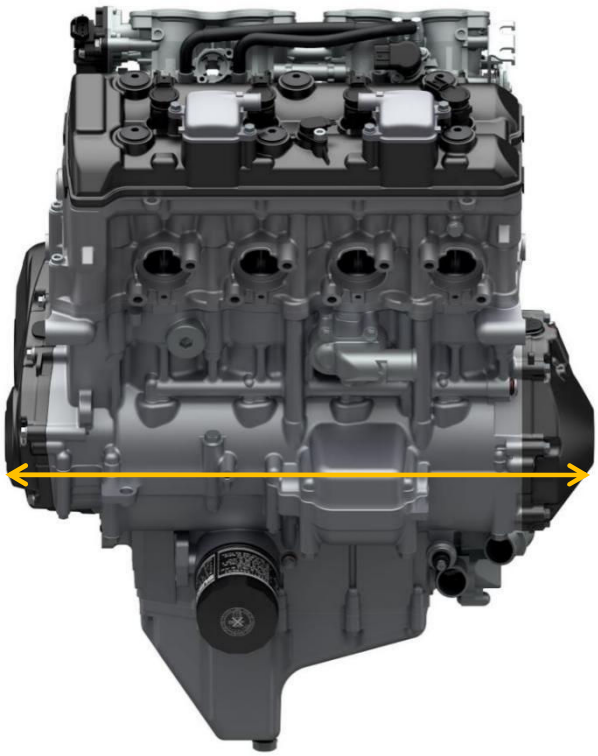
The engineers reduced the forward angle at which the cylinders are inclined from vertical, by 6 degrees. That change alone made the new engine 22.2 mm shorter from the front of the cylinder head to the rear of the crankcases when installed. In the process of making that change, the distance from the front axle to the swingarm pivot centerline was also reduced by 20 mm.



Current GSX-R1000



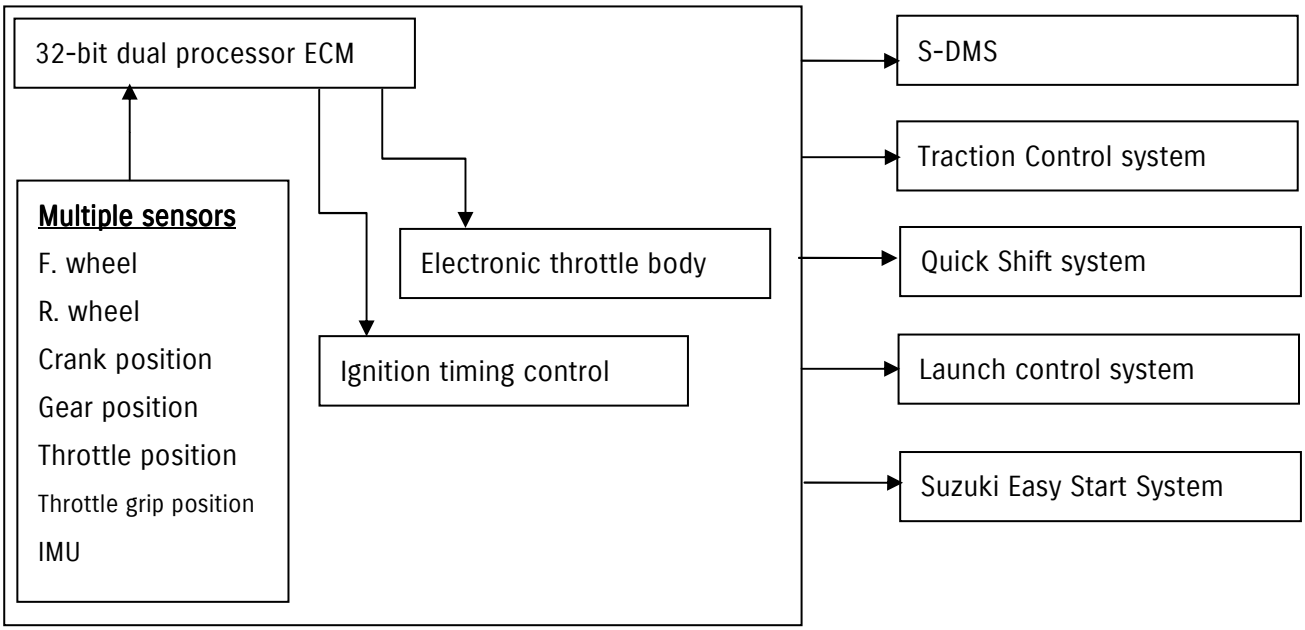
New GSX-R1000

New Engine	Current Engine
 Shorter engine length	
 Narrower engine width	

- Due to its shorter installed length, the engine can be moved closer to the front tire, improving front-end feel and feedback reaching the rider.
- The reduced width of the engine contributes to better aerodynamics with a smaller frontal projected area.

Advanced Electronics to work with more than 200 horsepower (ps)

The IMU-based advanced electronic management system is operated by a 32-bit dual processor ECM (Electronic Control Module). As the rider turns the handlebar twist grip, the ECM reads throttle position, crankshaft position and rpm, gear position, front and rear wheel speed, IMU position and exhaust oxygen content. The system then adjusts ignition timing, opens or closes the throttle valves, and adjusts the amount of injected fuel to work with the traction control system, maximize intake charge velocity, and produce more efficient and complete combustion. The result is effective traction control and more linear throttle response, along with more power, more torque and reduced emissions across the rpm range.

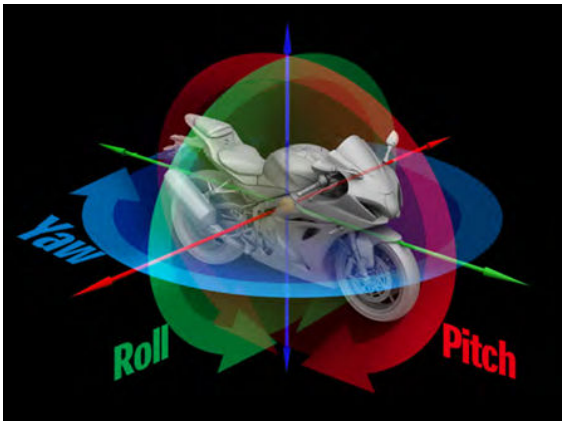


32-bit dual processor ECM

Electronic Throttle body

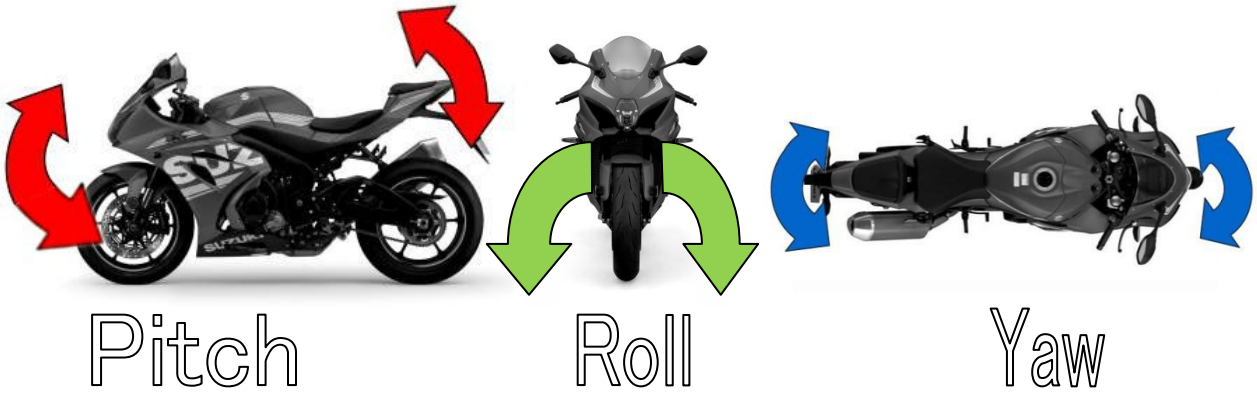
IMU sensor to track motorcycle motion

IMU (Inertial Measurement Unit)



6-direction, 3-axis motorcycle motion

The new GSX-R1000's advanced electronic management system incorporates feedback from a Continental Inertial Measurement Unit (IMU) which tracks the motion and position of the motorcycle in 6-directions, along 3-axis, Pitch, Roll and Yaw.

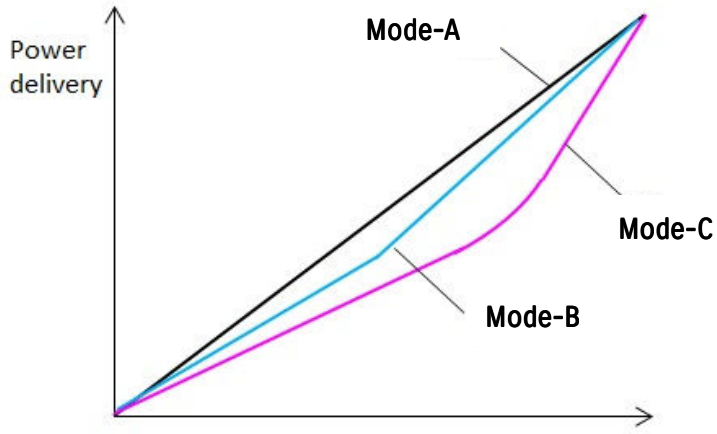


Monitoring these motorcycle motions in real time allows traction, braking and cornering control to be more precise and effective. IMU-based systems are a product of advanced engineering and MotoGP development.

Suzuki Drive Mode Selector (S-DMS)

The Suzuki Drive Mode Selector (S-DMS) allows the rider to pick from three available mapping and engine power delivery characteristic settings. The different settings can be used to tailor power delivery to suit ambient conditions as well as the rider's personal preferences in various situations, such as riding on different racetracks, or on tight and twisty roads, or in urban settings, or in traffic, or on straight and open highways. The rider can easily select the power mode by using a switch on the left handlebar.
Working with the 10-level traction control system, S-DMS offers a wide variety of power delivery choices. Full power is available in all three S-DMS modes.

Power delivery image by modes

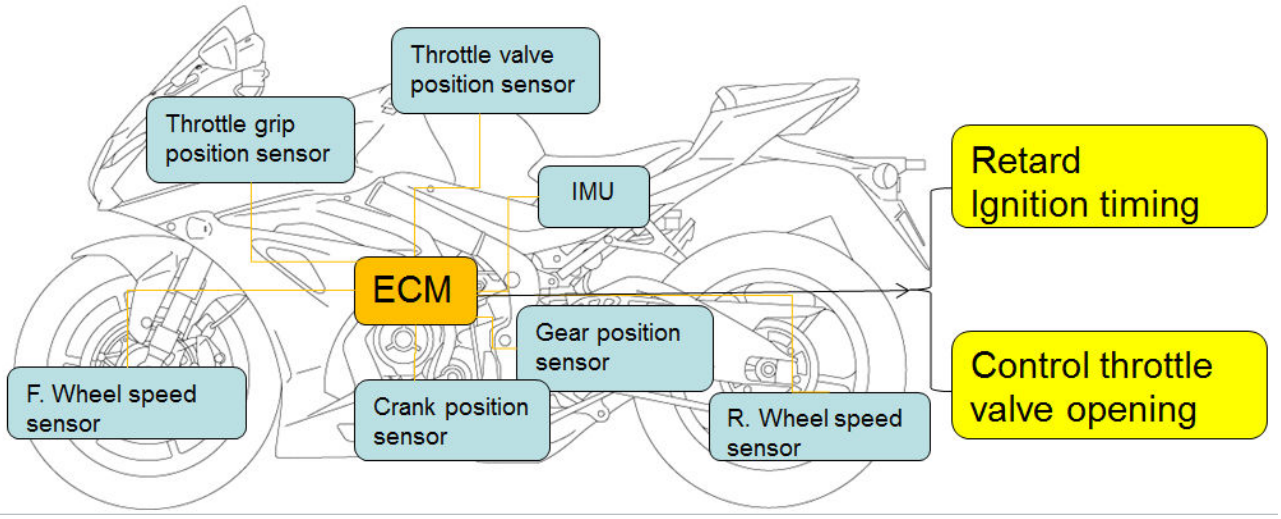


	DRY			WET	
Stage	Racetrack	Twisty roads	City street	Racetrack	Street
Mode	Mode-A				
	Mode-B				
		Mode-C			

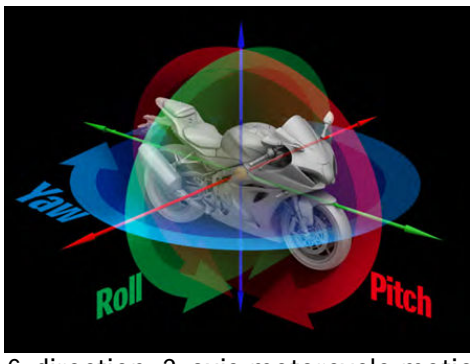
Motion Track TCS (Traction Control System)

Suzuki's advanced Motion Track TCS (Traction Control System) allows the rider to select 10 different levels of traction control intervention, depending upon road or racetrack conditions as well as personal preference and experience level. The power mode and level of TCS intervention can be changed while riding, as long as the throttle is closed.
The Motion Track TCS continuously monitors front and rear wheel speed, throttle position, crankshaft position, gear position and motorcycle motion, and quickly reduces engine power output when a loss of traction is detected or predicted. Power output is controlled by managing ignition timing and throttle valve position.

- Motion Track TCS reads input from various sensors every 4-milliseconds (0.004-second), for precise response.
- By using input from the IMU (Inertial Measurement Unit), the ECM can calculate the motorcycle's motion in six directions, (along three axis, Pitch, Roll and Yaw), for more precise traction control.

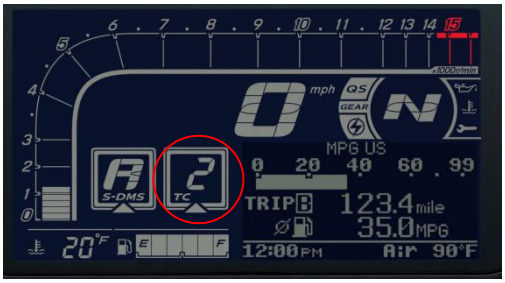



IMU (Inertial Measurement Unit)



6-direction, 3-axis motorcycle motion

- The rider can chose from 10 levels of Motion Track TCS intervention. Mode 1 is the minimum intervention level, and Mode 10 is the maximum intervention level. Modes 1-4 are designed for racetrack riding; Modes 5-8 are designed for street riding; and Modes 9-10 are designed for wet or bad road conditions.
- Modes 1-4 allow some level of rear wheel spin on the racetrack, and are designed for the experienced rider who prefers minimal electronic intervention.
- In Modes 5-8, Motion Track TCS intervenes earlier than it does in Modes 1-4. When the motorcycle reaches a specific lean angle, the system softens the throttle response and power delivery for easier control using the throttle twist grip. When wheel spin or slide is detected, the system immediately reduces power.
- Modes 9-10 are designed for wet or slippery road conditions, and the system activates earlier than in other modes.
- The instrument panel indicates what Motion Track TCS Mode has been selected, and a light shows when Motion Track TCS is active.



Stage	mode	Intervention level
Race track	1	minimum
	2	
	3	
	4	
Twisty roads or City Street	5	
	6	
	7	
	8	
Wet	9	
	10	Maximum

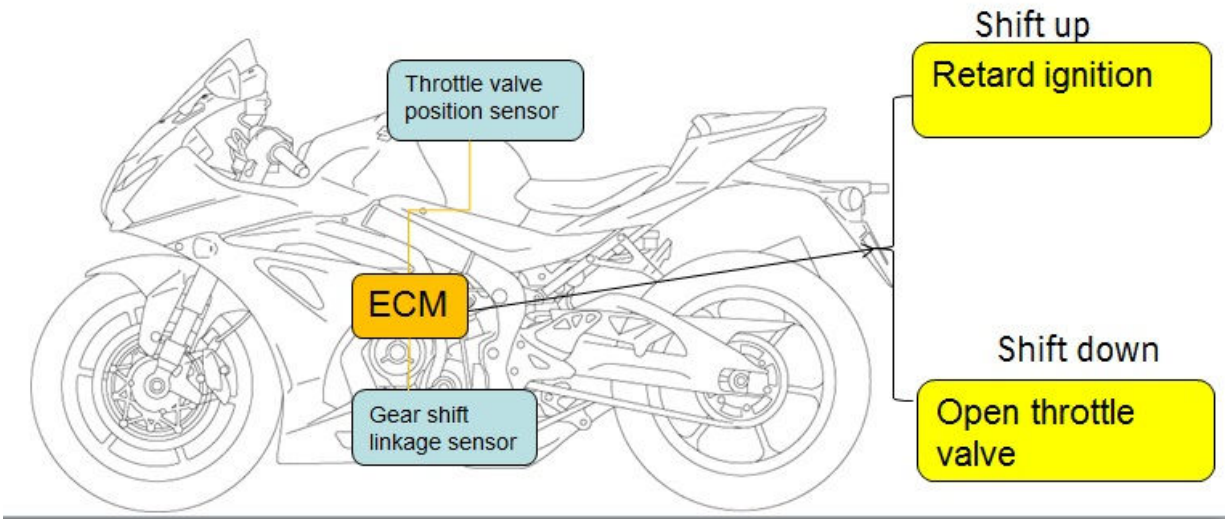
Bi-directional Quick shift system Featured on the GSX-R1000R

The GSX-R1000R model also has a new racing-type bi-directional quick shift system, allowing the rider to upshift and downshift without using the clutch or throttle operation.

The system automatically interrupts power delivery just long enough—between 50 and 75 milliseconds, depending upon the sensitivity adjustment—to unload the transmission gear dogs and allow a clean upshift, producing smoother, almost uninterrupted acceleration.

For quicker and smoother downshifts without manually blipping the throttle twist grip or using the clutch, the system automatically opens the throttle valves just enough to increase rpm and match engine speed to the next-lower gear ratio.

The quick-shift system monitors shift-linkage movement and stroke and shift-cam rotation as well as throttle valve position.



Launch Control system (Featured on the GSX-R1000R)

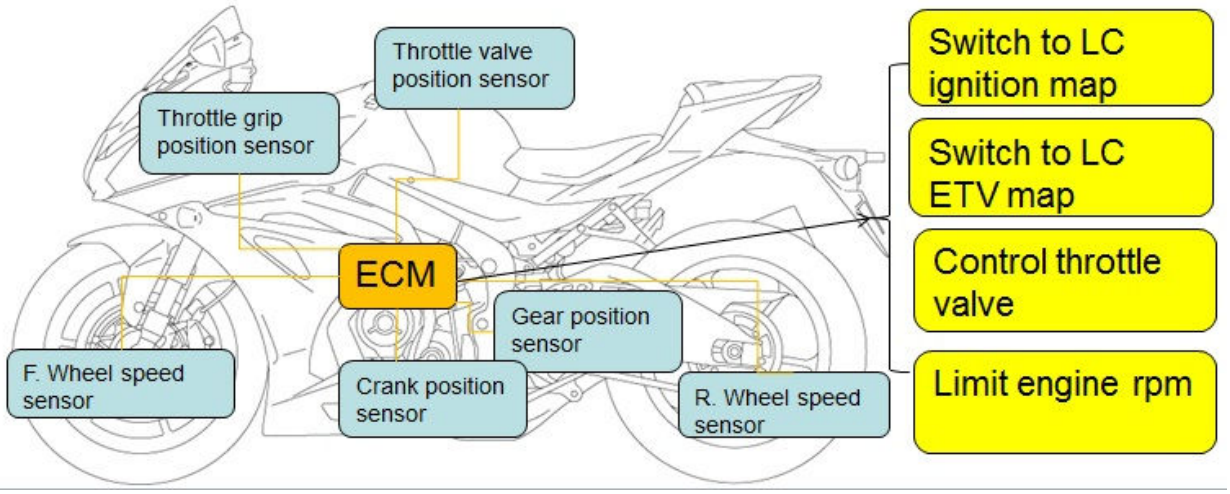
The GSX-R1000R model's launch control system makes it easier for a racer to get a good start in closed-course competition by automatically limiting engine rpm and optimizing torque delivery while the rider holds the throttle twist grip wide open and concentrates on feeding in the clutch lever.

Once the rider selects launch control using a switch on the left handlebar, the system engages special maps controlling throttle valve opening and ignition timing. The system monitors throttle twist grip position, throttle valve position, engine rpm, gear position, front wheel speed and rear wheel speed.

At the moment of launch, the system is set to hold the engine at ideal rpm for an effective launch. Once the clutch lever is released and the clutch engaged, rpm is no longer limited but throttle opening is controlled to keep the engine at the ideal torque for strong acceleration.

The launch control system not only helps the rider get a good initial launch, but also helps reduce the chance that a wheelie off the starting grid will require the rider to close the throttle twist grip. It does so by working with Motion Track TCS and controlling throttle valve opening and ignition timing while monitoring front and rear wheel speeds.

The launch control system automatically disengages when the rider upshifts into third gear or closes the throttle grip.



Suzuki Easy Start System

The Dual processor ECM also runs a new one-touch Suzuki Easy Start system, which automatically keeps the starter motor turning until the engine fires, and an idle-speed system, which improves cold starting, reduces cold-start emissions and stabilizes engine idle under various conditions, based on coolant temperature.

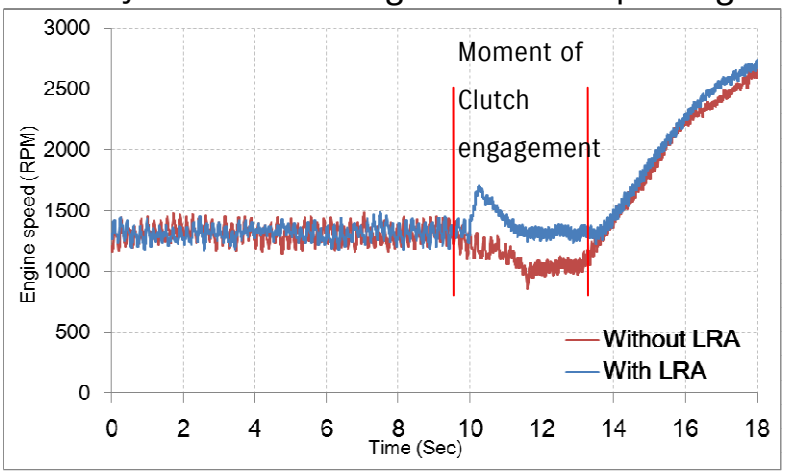
- The GSX-R1000 features a new Suzuki Easy Start system. The convenient system automatically starts the engine with one touch of the starter button mounted in the switch module on the right handlebar; there's no need to hold the button down until the engine fires.
- Thanks to the new system, the rider doesn't have to pull the clutch lever in to start the engine, as long as the transmission is in neutral.

Right handlebar switch


Dual processor ECM

Low RPM Assist

The Suzuki GSX-R1000's Low RPM Assist system monitors and automatically adjusts engine rpm when taking off from a stop or when riding slowly. The system makes it easier for the rider to pull away from a standstill or maneuver in heavy traffic or through a crowded parking lot.



New Pistons, Piston rings, and Connecting rods

- Each forged aluminum piston has short skirts, cutaway sides and a short, DLC coated wrist pin to reduce friction. A carefully shaped piston dome increases compression from 12.9:1 to 13.2:1 while also enhancing combustion efficiency.
- An L-shaped upper compression ring is pushed out against the cylinder wall by combustion pressure, reducing blow-by and improving cylinder sealing. The oil ring features a chrome-nitride coating, which is harder and smoother than conventional chrome plating, reducing friction, increasing durability and also enhancing cylinder sealing.
- The pistons are carried by chrome-molybdenum steel connecting rods with a carburized surface treatment to increase strength.

	New GSX-R1000	Current GSX-R1000
Piston diameter	76.0 mm	74.5 mm
Compression ratio	13.2 : 1	12.9 : 1
Piston pin	DLC coated	-

Redesigned Camshafts and valves

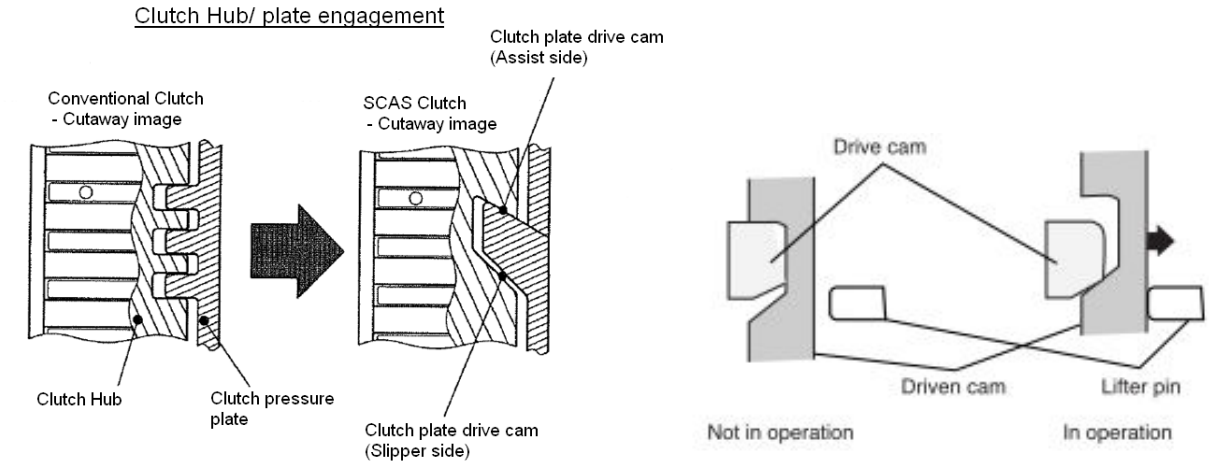
- Both intake and exhaust camshafts are redesigned to achieve the targeted performance.
- Both intake and exhaust valves are redesigned to increase combustion efficiency.

	New GSX-R1000	Current GSX-R1000
Valve train system	Finger follower	Bucket tappet
Intake valve diameter	31.5 mm	30.0 mm
Exhaust valve diameter	24 mm	25 mm
Exhaust valve material	Titanium	Steel

Redesigned Transmission gears

- Transmission gears are redesigned to match the increase in power.

New SCAS (Suzuki Clutch Assist System) Clutch



- The GSX-R1000 features a new SCAS (Suzuki Clutch Assist System).
- SCAS works as a slipper clutch during downshifts, reducing mechanical pressure on the plates, inducing slip and limiting back-torque.
- SCAS increases mechanical pressure on the plates during acceleration, allowing the use of lighter clutch springs and thus making it easier to pull in the clutch lever.

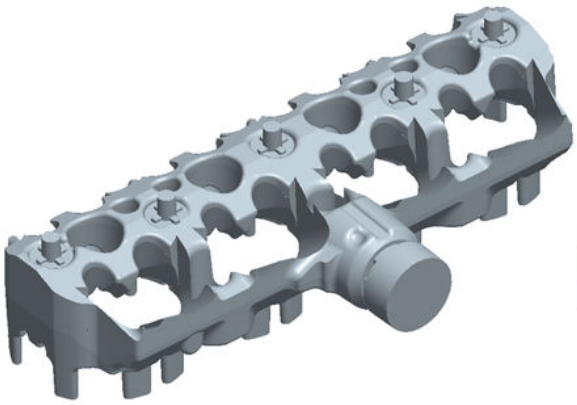
Refined final drive

- Final gear ratio is changed to match the new, larger rear tire dimensions.
- 525 drive chain is now used, instead of previous model's 530, reducing weight.

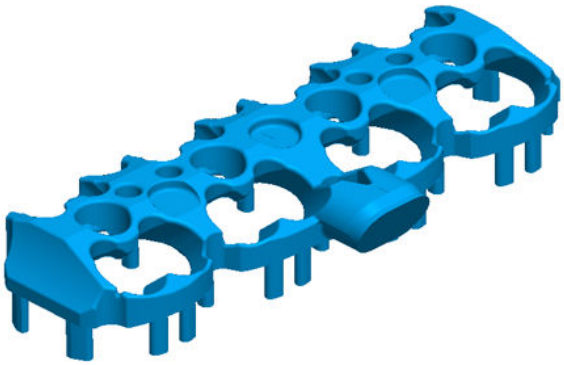
	New GSX-R1000	Current GSX-R1000
Primary gear ratio	1.652 (76/46)	1.617 (76/47)
Final gear ratio	2.647 (45/17)	2.470 (42/17)
Drive chain size	525	530
Clutch	Wet multi-plate, SCAS	Wet multi-plate

Cooling design

New water jacket design



Current model water jacket



New model water jacket

- The new GSX-R1000's cylinder head water jacket was designed to improve coolant flow and heat-transfer efficiency.
- The water jacket internal shape is smoother, and is designed to make the coolant flow faster. Areas where the coolant could stagnate were eliminated. Cooling efficiency was increased with less coolant required.
- Thanks to the new water jacket design, coolant volume is reduced by 400 cc, which contributes to weight savings without compromising cooling efficiency.

New Radiator

- A new, high-efficiency curved radiator has excellent cooling performance.
- The radiator carries dual electric fans instead of single fan on the current model.

New Oil cooler

- Racing has proven that the most effective way to reduce oil temperature is to use an efficient, air-cooled oil cooler, as fitted to the new GSX-R1000.

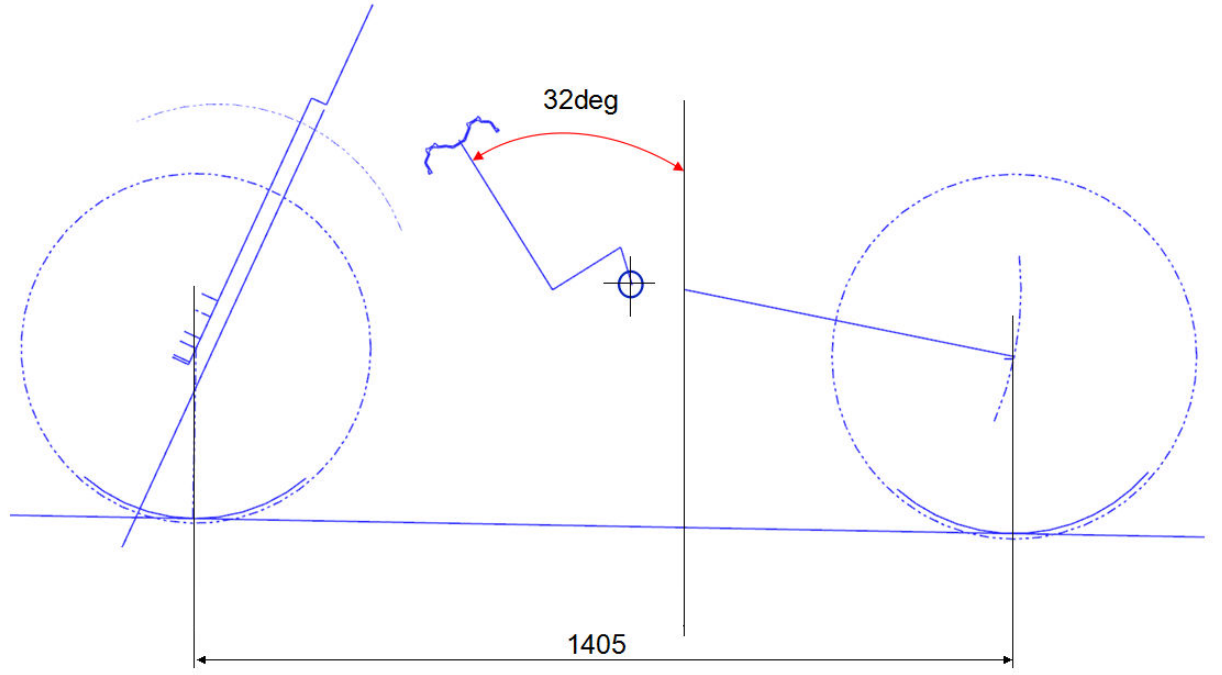
	New GSX-R1000	Current GSX-R1000
Radiator fan	Dual fan	Single fan
Oil cooler	Air-cooled	Air-cooled

All-New Chassis design

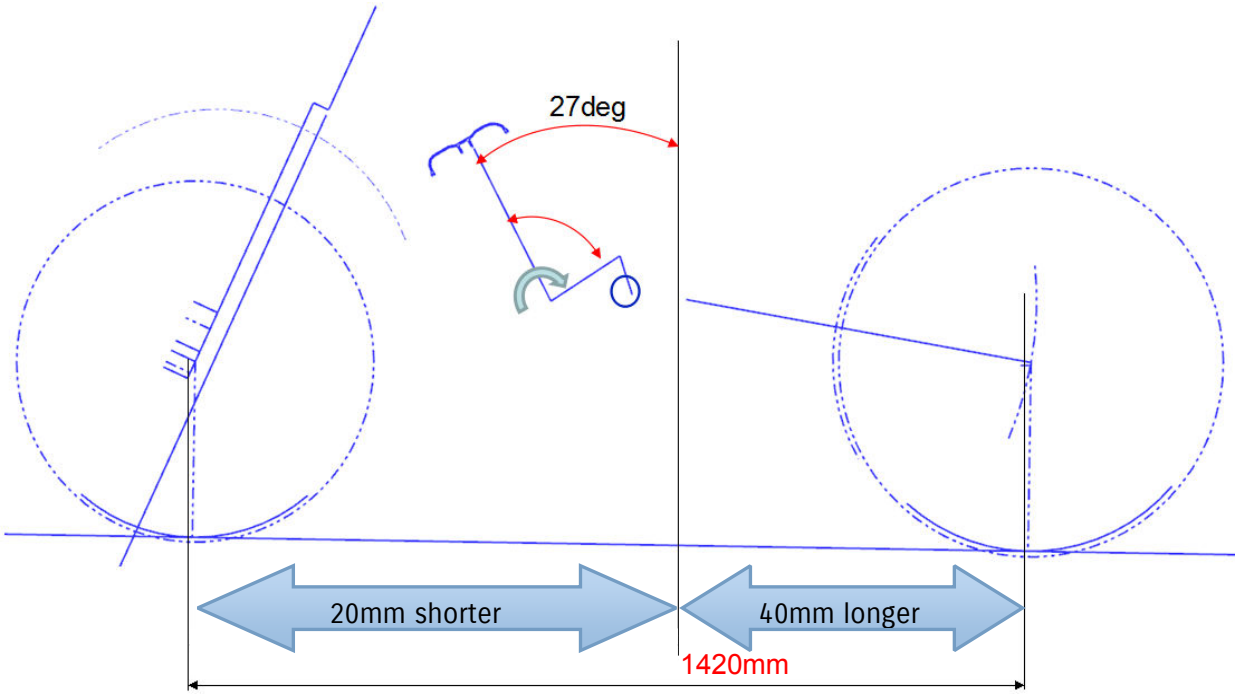
The new chassis is more compact and lighter, improving response and agility. It is designed to increase the rider's confidence in RUN, TURN, STOP performance on the racetrack.

Dimensions	New GSX-R1000/R	Current GSX-R1000
Wheelbase	1410 mm	1405 mm
Rake	23° 2'	23°50'
Trail	95 mm	98 mm
Lean angle	56°/56°	56°/56°
Ground clearance	130 mm	130 mm
Curb mass (Non-ABS) Curb mass (ABS model) Curb mass (GSX-R1000R)	200kg 202kg 203kg	203kg 205kg

Current GSX-R1000 dimensions



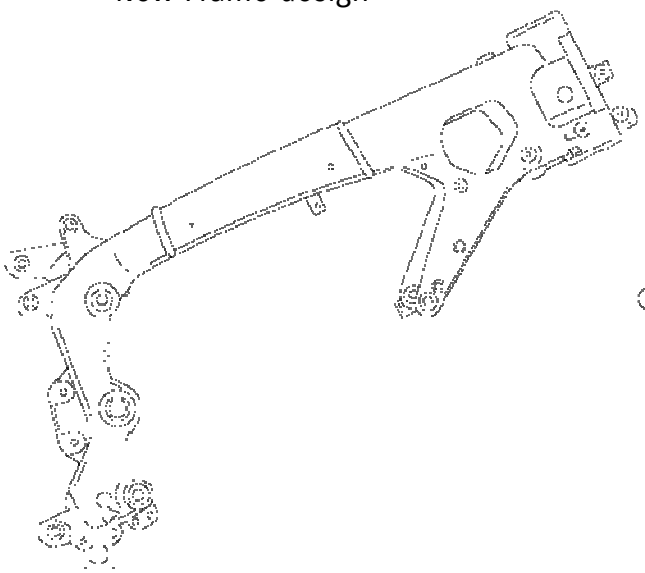
New GSX-R1000 dimensions



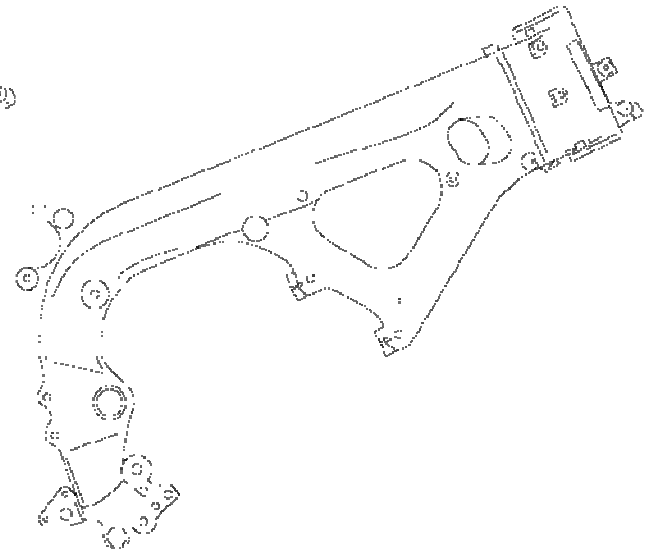
- With the reduced length of the engine, the center to center distance from the front axle to the swingarm pivot is shortened.
- The new, shorter engine installed length also moves the engine's center of mass closer to the front wheel, improving the front-end feel and feedback

All-new Aluminum Frame

New Frame design

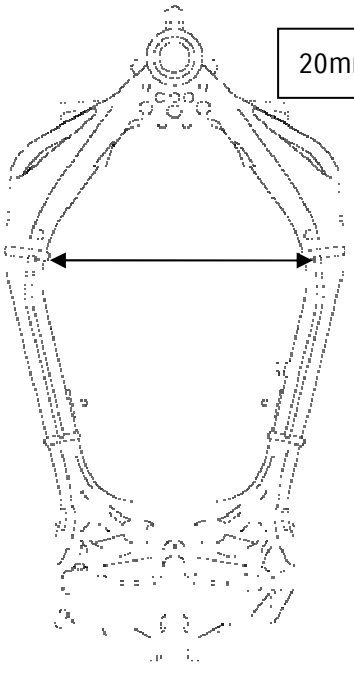


Current Frame design



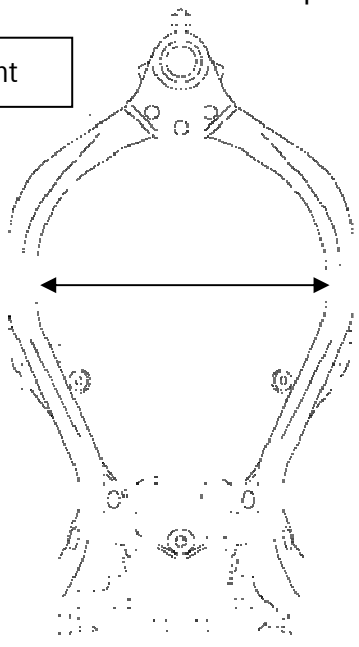
- Newly designed main frame is aimed to provide nimble handling and great road holding performance. It is significantly lighter and more compact.
- The new GSX-R1000's main frame has optimized rigidity and was designed using the latest FEM analysis technology and is 10% lighter than the frame of the current GSX-R1000.
- The design of frame components and the location of welding points have been changed. For example, the steering head and the front engine hanger on each side are now included as part of a single, one-piece cast structure.

New frame top view



20mm narrower at the widest point

Current frame top view



- The distance between fuel tank rails is 20mm narrower than that of current model.

New Swingarm

- The new, Superbike-braced swingarm has optimized rigidity and helps improve handling on the racetrack.

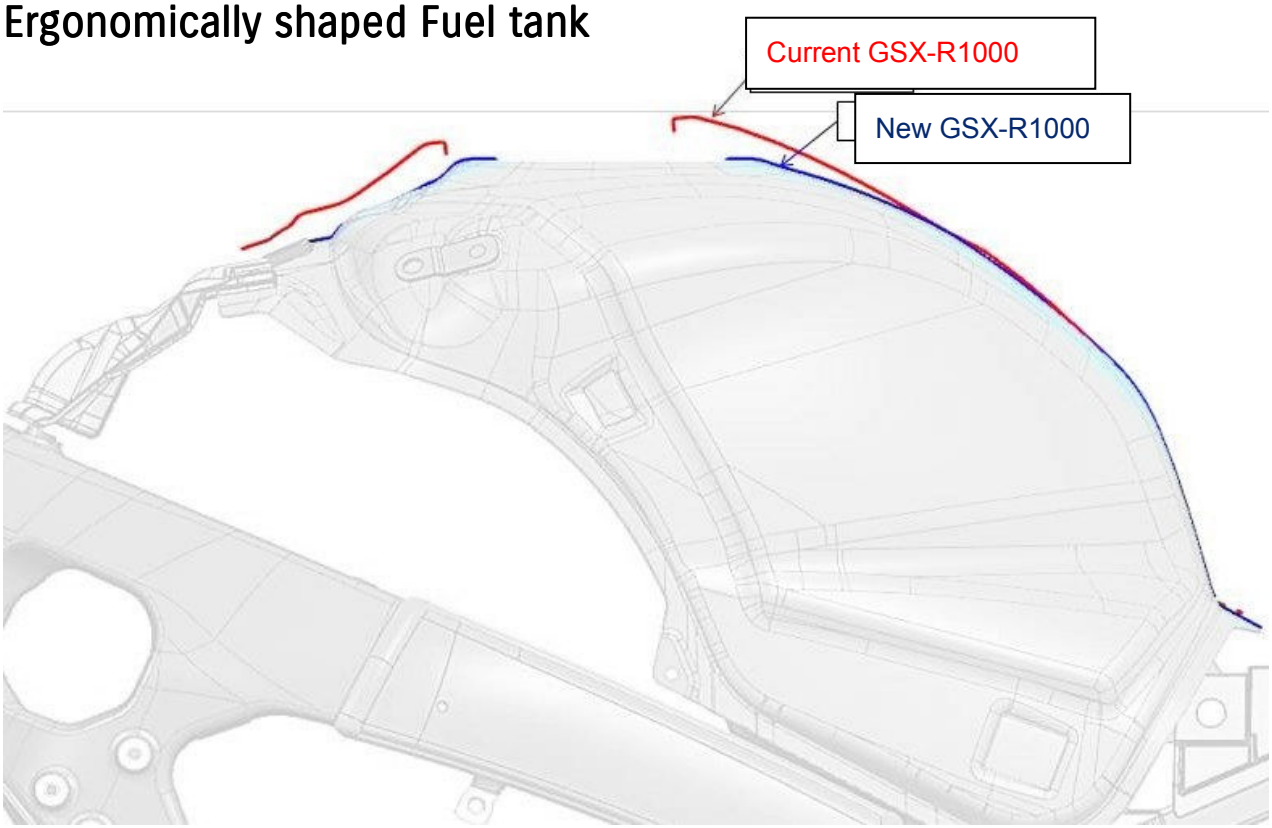
New Rear Sub frame

New seat rail

Current seat rail

- The new GSX-R1000's rear sub frame/tail section has been redesigned, replacing the previous model's die cast aluminum structure with a simpler and lighter aluminum tube design. Weight is reduced by 1 kg.

Ergonomically shaped Fuel tank



- The top of the new fuel tank is 21mm lower than the current model's tank, making it easier for the rider to tuck in on a racetrack straightway.
- The rear part of the fuel tank has been reshaped to make it easier for the rider to move back and forth while on the racetrack.
- The front of each side of the fuel tank has been reshaped to make it easier for the rider to brace against the tank during racetrack cornering.

Electronic Steering damper

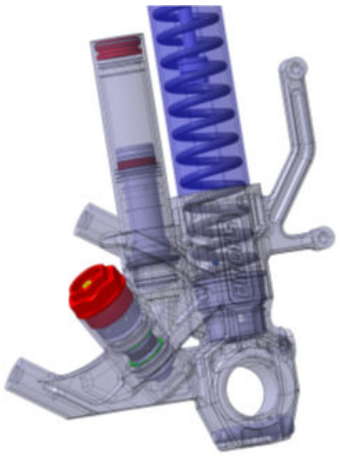
An electronically controlled steering damper fitted to the new GSX-R1000 automatically increases damping at higher speeds, and reduces damping at slower speeds. The result is an improved balance of precision and agility on faster and slower sections of the racetrack.

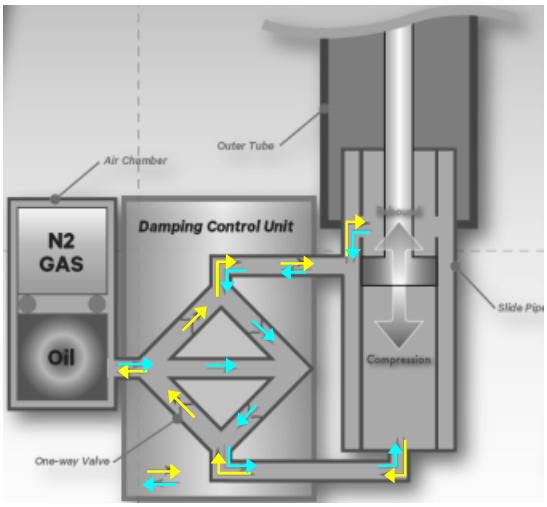
SHOWA BFF®(Balance Free Front) forks: Featured on the GSX-R1000R

The GSX-R1000R model features the latest Showa BFF (Balance Free Front) forks, which were developed for racing use and have now been adapted to mass production. BFF forks provide more consistent damping and enhanced performance, increasing cornering traction by delivering smoother, more controlled travel and doing a better job of dealing with pavement imperfections.
The BFF system balances (or equalizes) oil pressure above and below the solid internal piston as it moves up and down, pushing oil out of the fork leg and through external damping circuits that run to the other side of the piston, where it is drawn back into the fork leg.
The external compression and rebound damping circuits that the oil runs through are more precise than the valve stacks fitted above and below the piston in other types of forks, and damping control is “set free” (or isolated) from the influence of unequal pressure. It's a difference that can be felt, with riders reporting improved comfort on the road and better feel and cornering grip on the racetrack.
BFF rebound damping, compression damping and spring preload can be easily adjusted externally.

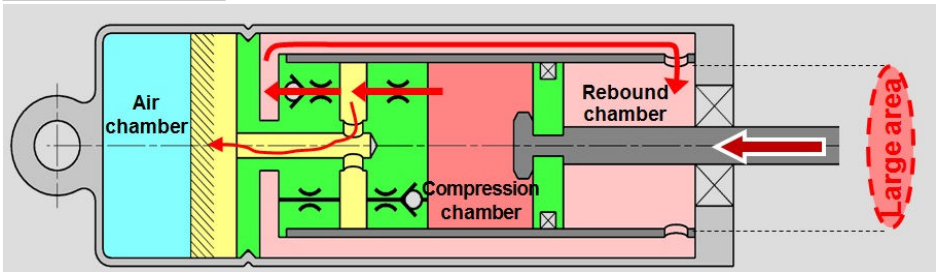
Diagram of External Damping Circuits (Featured On The GSX-R1000R)

The rebound and compression damping circuits for the Showa BFF forks are positioned externally, in the axle holder, instead of inside the fork cartridge itself. The Balance Free system equalizes (or balances) oil pressure above and below the solid internal piston as it moves, pushing oil out of the fork leg, through the damping circuits, and back into the fork leg, on the other side of the piston. The system avoids pressure imbalances that can create stiction and slow down fork response. The results include better road holding and cornering traction on the racetrack, and a more comfortable ride on the street.

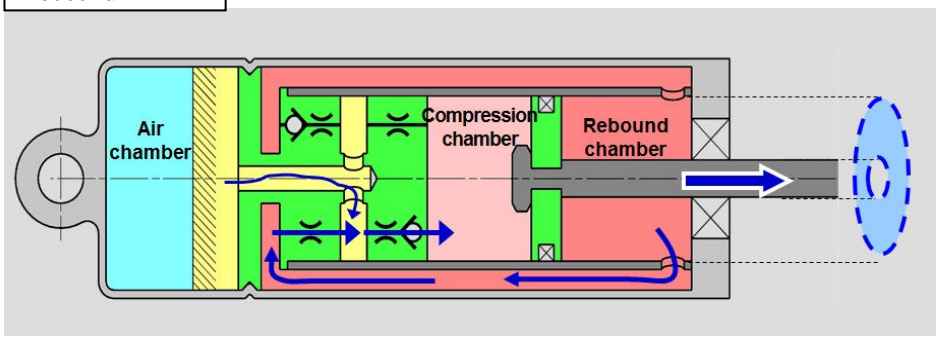




Compression



Rebound

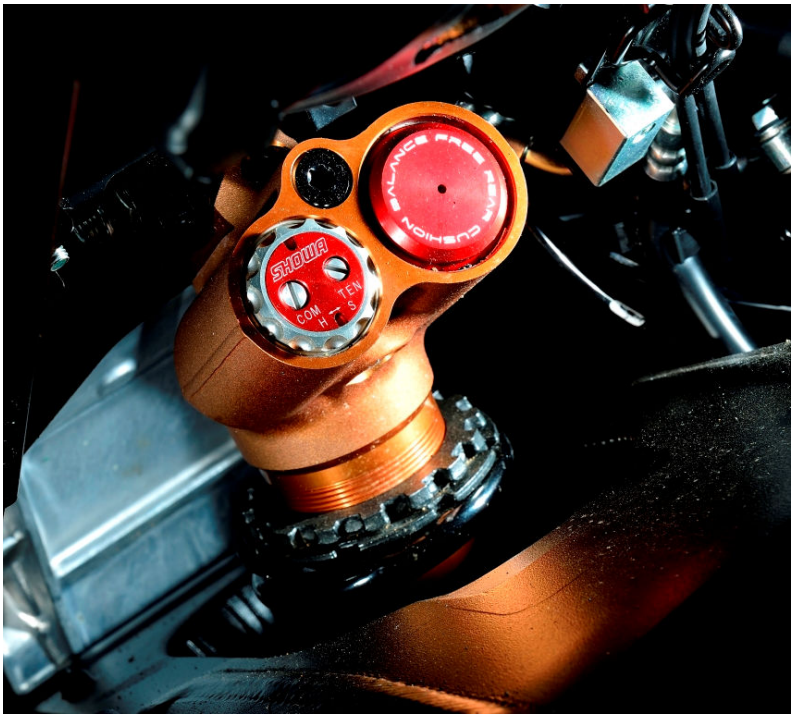


SHOWA BFRC® lite (Balance Free Rear Cushion lite)

Featured on GSX-R1000R

BFRC® lite rear shock absorber balances (equalizes) oil pressure above and below the solid internal piston as it moves. As the shock compresses, oil is pushed through the external damping circuit built into the upper shock body, through the compression valve stack and back into the shock body, on the other side of the piston. As the shock extends, oil is pushed through the external rebound damping circuit, through the rebound valve stack and back into the shock body, on the other side of the piston.

Compared to conventional shocks that generate damping by pushing oil through the internal piston and valve shim stacks fitted above and below the piston, damping control is isolated from the influence of unequal pressure. It's a difference that the rider can feel on the street and on the racetrack, with riders reporting better feel and drive grip that allowed them to initiate their drive sooner and accelerate out of racetrack corners harder. The improvement in damping control is so significant that it is no longer necessary to provide separate high-speed and low-speed compression damping adjustments, and the rear shock is lighter as a result. On the street, the BFRC lite shock absorber is more responsive and improves traction and rider comfort. Damping adjustment controls are conveniently located and clearly labeled on the upper shock body, and the BFRC lite shock absorber works with a progressive linkage.



BFRC lite shock absorber damping adjustment controls.

SHOWA BPF (Big Piston Front) forks (Featured on GSX-R1000)

The standard-model GSX-R1000's Showa BPF (Big Piston Front) forks have been well-proven and out-perform the suspension fitted to standard models sold by many competitors. The design eliminates the internal cartridge assembly used in conventional forks and instead uses a larger, 39.6 mm piston riding against the inside wall of the inner fork tube itself, reducing weight (by about 720 grams) and stiction (also known as resistance to initial fork movement). The BPF design also relocates the fork springs to the bottom of each fork leg, where they are completely submerged in oil, reducing oil foaming and improving damping control. The design also produces more precise response from the start of fork compression, delivering better feel and feedback to the rider, and makes maintenance easier.

SHOWA rear shock (Featured on GSX-R1000)

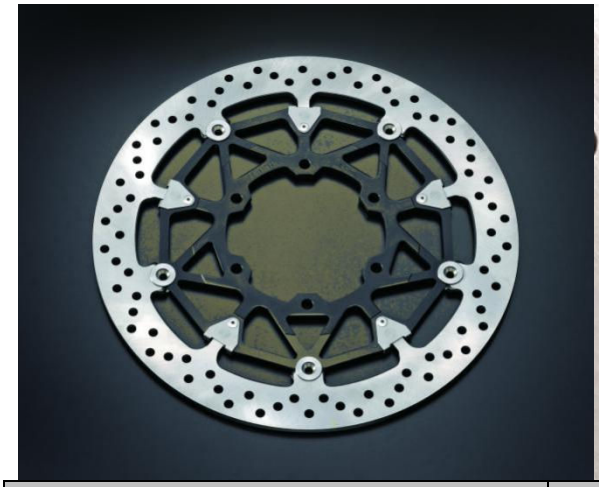
The standard GSX-R1000 model's Showa rear shock works with a new progressive linkage that makes the suspension more responsive and increases traction over uneven pavement ripples as well as over larger bumps. Spring preload, rebound damping, and both high-speed and low-speed compression damping are externally adjustable. The linkage dog-bones are made of extruded aluminum alloy.

SHOWA BPF forks


SHOWA rear shock

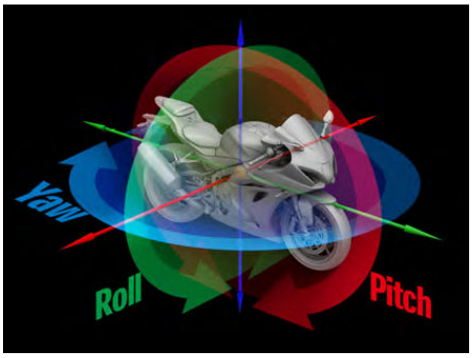
New Brembo discs and Brembo radial mount calipers

- New Brembo stainless steel brake discs are 10 mm larger in diameter, measuring 320mm.
- Each disc features a new hybrid mounting system using a 50/50 combination of 5 conventional spring-loaded floating pin mounts and 5 Brembo T-drive floating mounts.
- The Brembo T-drive floating mounts are lighter yet produce a larger contact area between the disc and the inner disc carrier, requiring fewer mounts (10) than conventional mounts alone (12), minimizing the weight gain from the larger discs.
- But T-drive mounts can also produce an audible rattle under certain conditions. Conventional spring-loaded pin mounts are slightly heavier and produce a smaller contact area, but are quieter. Using a combination of T-drive and pin mounts reduces rattle and requires fewer mounting points.
- The GSX-R1000's Brembo radial-mount, monoblock front brake calipers each have four 32 mm pistons and work with a radial-pump, 19 mm master cylinder.



	New GSX-R1000	Current GSX-R1000
Front brake disc brand diameter	Brembo 320 mm	Sunstar 310 mm
Front disc floating pin	5 T-drive and 5 floating pins	12 floating-pins
Front brake calipers	Brembo Monoblock radial mount type	←
R. brake disc diameter	220mm	←
Rear brake caliper	Nissin Single piston	←

Motion Track Brake System



- The GSX-R1000R model and the ABS version of the standard GSX-R1000 model come with the new Motion Track Brake System, which works with the IMU (Inertial Measurement Unit). The IMU constantly monitors motorcycle movement in 6-directions along 3-axis, Pitch, Roll and Yaw.
- Motion track Brake System reduces rear-wheel lift during very hard braking on the racetrack, and is especially effective during hard braking on downhill sections of track. For racetrack use, reducing rear-wheel lift allows the use of more aggressive brake pads, producing more initial bite and more total braking force, and helps keep the rear wheel in line.
- The system also optimizes the brake pressure when the motorcycle is leaning. (featured on the GSX-R1000R)

*This system is available on the ABS version of the GSX-R1000 model and is included as standard equipment on the GSX-R1000R model.

When the IMU detects rear-wheel-lift, the ABS unit immediately adjusts front brake pressure to reduce rear-wheel-lift.

When the front brake is applied while the motorcycle is leaned over, the ABS unit immediately optimizes front brake pressure.

Featured on the GSX-R1000R

Wheels and tires

- New light-weight, 6-spoke cast aluminum wheels contribute to nimble handling and sporty appearance.
- Bridgestone RS10 radial tires have earned a good reputation worldwide for producing consistent performance and durability across a wide range of ambient conditions.
- The new GSX-R1000 comes with a 120/70ZR-17 front tire. A larger, 190/55ZR-17 rear tire replaces the existing model's 190/50ZR-17 rear tire and is designed to work with the increase in horsepower and torque.

	New GSX-R1000		Current GSX-R1000	
	Size	Brand	Size	Brand
Front tire	120/70ZR17	Bridgestone BATTLAX STREET RS10	120/70ZR17	Bridgestone S20 series
Rear tire	190/55ZR17		190/50ZR17	

New GSX-R1000 Front wheel

Current GSX-R1000 Front wheel

Bridgestone BATTLAX STREET RS10 radial tires

Aerodynamic bodywork

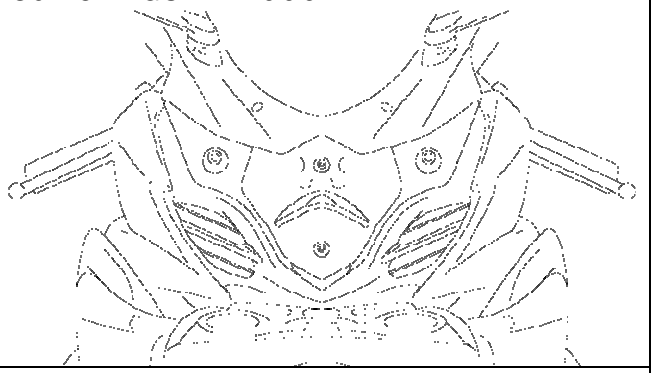
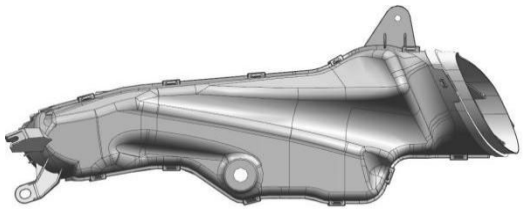
The 2017 GSX-R1000 is fitted with MotoGP-inspired, more aerodynamic bodywork designed to contribute to better overall racetrack performance by increasing handling and top speed on the racetrack.

- The new bodywork is more compact, sleeker and narrower, to increase aerodynamic efficiency.
- Lift has been reduced and CdA has been improved compared to the current model's bodywork, thanks to a smaller frontal projected area.
- The new fairing is 16mm narrower at its widest point.
- Even the fairing mounting bolts have been redesigned, with a new flat-top shape to reduce air resistance.
- The new fuel tank has a lower top and a sleeker shape, helping the rider tuck in more completely and easily. The improved rider tuck contributes to improved aerodynamic performance of the motorcycle.

New GSX-R1000

Current GSX-R1000

Suzuki Ram Air Direct (SRAD)

New GSX-R1000	Current GSX-R1000
	
New SRAD duct	Current SRAD duct
	

- New SRAD intake ducts are positioned closer to the center of the fairing nose, where air pressure is highest. The intake ducts are also larger, thanks to the compact LED headlight.
- New SRAD ducts are also smoother internally, increasing the volumetric flow of air into the air box, and overall intake efficiency is increased.

Slotted brake lever

- The new front brake lever is slotted at the end to reduce the chance that wind pressure will induce brake drag at high speed on the racetrack.

Mirrors

New Mirror

Current Mirror

- The new GSX-R1000's mirrors have been redesigned with a more aerodynamic shape and are lighter. The front turn signals are no longer integrated into the mirrors.

Fairing mount bolts

New fairing bolt

Current fairing bolt

- New fairing mount bolts have a flat top design, to reduce weight and air resistance.

Full LCD multi-function Instrument panel

New Standard-model GSX-R1000 instrument panel

Current GSX-R1000 instrument panel

- The GSX-R1000's full-LCD instrument panel is light weight and compact. Thanks to its full-LCD design, much more information is now available to the rider.
- The instrument panel is adjustable, with six levels of brightness available.
- The shift-up indicator light has been redesigned and relocated above the panel, for better visibility. The rpm at which the shift light illuminates can be customized to suit the rider's personal preference.
- The LCD panel's white background improves readability for night-time riding.
- LED turn signal, high-beam, neutral, malfunction, ABS, traction control and coolant-temperature/oil-pressure indicator lights are located to the right and the left of the LCD panel, and are designed to be easily seen and recognized.
- A segmented bar-type tachometer features a "peak-hold" function, which shows the peak rpm reached at the last moment before closing the throttle or downshifting.
- The GSX-R1000R model features a unique black instrument panel background. Instruments are brightness-adjustable in six levels.

New GSX-R1000R instrument panel

Instrument comparison

		New Model		Current model
		GSX-R1000	GSX-R1000R	
LCD readout	**Speedometer**	Yes	←	←
	Odometer	Yes	←	←
	Trip meter	Yes	←	←
	Tachometer	Yes	←	←
	Traction Control mode	Yes	←	**No**
	Quick shift	No	Yes	**No**
	Launch Control mode	No	Yes	**No**
	Fuel gauge	Yes	←	**No**
	Fuel consumption (Average/Instant)	Yes	←	**No**
	Gear position	Yes	←	←
	Lap time	Yes	←	←
	Water temperature	Yes	←	←
	Ambient temperature	Yes	←	**No**
	Clock	Yes	←	←
Indicators	**Traction Control**	Yes	←	**No**
	RPM indicator (Shift light)	Yes (Relocated)	←	←
	Freeze indicator	Yes	←	**No**
	Neutral	Yes	←	←
	High beam	Yes	←	←
	Turn	Yes	←	←
	Service reminder	Yes	←	**No**
	ABS indicator	Yes	←	←

LED Headlight

- The GSX-R1000 and GSX-R1000R feature a new LED headlight.
- Thanks to the high-illumination LED, the new GSX-R1000 and GSX-R1000R headlight is much more compact than the current GSX-R1000 model's headlight.

LED position lights

- The GSX-R1000R model features sharp looking LED position lights.
- The LED position lights enhance the distinctive, exciting look of the GSX-R1000R.

LED Tail/Stop and license lights

- Both GSX-R1000 models feature new LED tail/stop and license lights.
- The vertical layout of the tail/stop light contributes to a slim tail section.
- The LED license light is about half the size of a conventional bulb-type license light.
- Because the LED is very vibration resistant, the rear fender can be lighter and simpler.

LED Turn signals

- Both GSX-R1000 models feature sharp, clean and lightweight LED turn signals*.

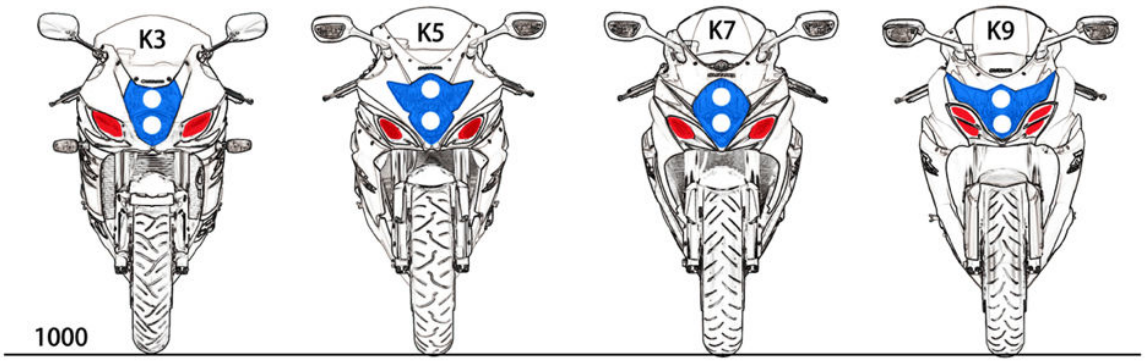
*Not available in North American spec.

Styling design concept:

“Shaped for Performance”

The styling of the new GSX-R1000 is based on aerodynamic performance, as determined in wind tunnel and racetrack testing, with feedback from experienced test riders and racers.
Styling designers worked alongside the engineering team to create a very functional shape with the theme “Solid & Sleek” to express the beauty of high performance in a purpose-built Super Sportbike. Design cues from the GSX-RR MotoGP racebike are reflected in the bodywork design as well.

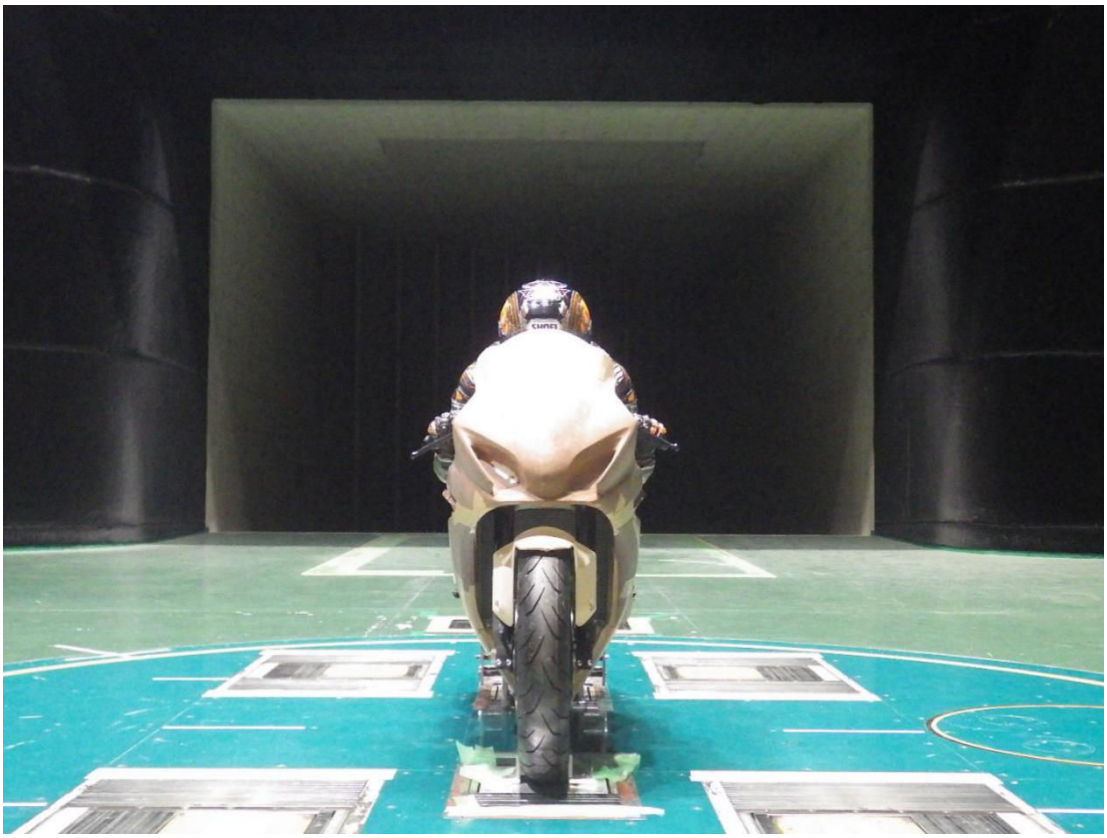
Inherited GSX-R styling identity



To reflect the GSX-R1000 heritage of performance, the newest GSX-R inherits headlight and intake duct styling cues from previous models.

Shaped in the wind tunnels and on the racetrack

Suzuki engineers and designers did extensive aerodynamic research and testing in the wind tunnel and on the racetrack during the development of the new GSX-R1000's bodywork. The result is the most aerodynamic GSX-R1000 ever built.



GSX-R1000: The King Of Sportbikes

The King Of Sportbikes is back, better than ever, ready to reign.

It is the culmination of 30 years of reliable GSX-R performance, innovation, domination and unmatched value.

It is the physical embodiment of the pride and passion and expertise and determination of a Suzuki engineering team that loves riding and racing like life itself. Built with pride and passion in what the name GSX-R represents. With expertise developed over 30 years of GSX-R performance. With determination to see the GSX-R1000 reclaim its rightful title as The King Of Sportbikes.

It is a machine designed to turn a simple expression of what really matters—Run, Turn, Stop — into the powerful combination of acceleration, cornering and braking that makes this the most awesome GSX-R ever produced.

Offered with the certain knowledge that--if you're ready--the new GSX-R1000 will Own The Racetrack.

GSX-R1000/A

Metallic Triton Blue (YSF)

Pearl Mira Red (YVZ)

Metallic Mat Black No.2 (YKV)

GSX-R1000R

Metallic Triton Blue (YSF)

Glass Sparkle Black (YVB)

Tentative Specifications

Overall Length			2075 mm
Overall width			710 mm
Overall height			1150 mm
Wheelbase			1410 mm
Ground clearance			130 mm
Seat height			825 mm
Curb mass		GSX-R1000 (non-ABS)	200 kg
		GSX-R1000 (with ABS)	202 kg
		GSX-R1000R (with ABS)	203 kg
Engine type			4-stroke, 4-cylinder, liquid-cooled, DOHC
Bore x stroke			76.0mm x 55.1mm
Engine displacement			999.8cm^3
Compression ratio			13.2 : 1
Fuel system			Fuel injection
Starter system			Electric
Lubrication system			Wet-sump
Transmission			6-speed constant mesh
Suspension	**Front**		Inverted telescopic, coil spring, oil damped
	Rear		Link type, coil spring, oil damped
Rake / trail			23.2° / 95mm
Brakes	**Front**		Disc brake, twin
	Rear		Disc brake
Tires	**Front**		120/70ZR17M/C (58W) tubeless
	Rear		190/55ZR17M/C (75W) tubeless
Ignition system			Electronic ignition
Fuel tank capacity			16 L