

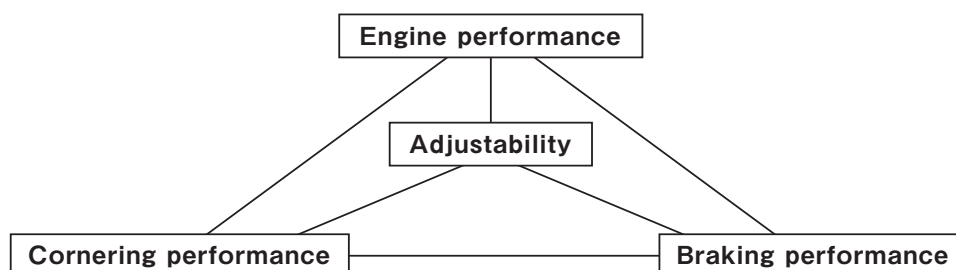
GSX-R 600



Concept

2008 GSX-R600 【Core concept】

The new GSX-R600's development concept is, simply, "The Top Performer," with an emphasis on three basic elements – "Engine performance", "Cornering performance" and "Braking performance" – along with extensive adjustability as a means to bring out each of the basic performance elements efficiently. Along with these performance elements which were maintained as key objectives throughout the course of the development of this machine, the latest GSX-R600 model change also especially focused on two aspects: "Enhancement of circuit performance" and "Further evolution of the styling design".



【Aim of the latest model change】

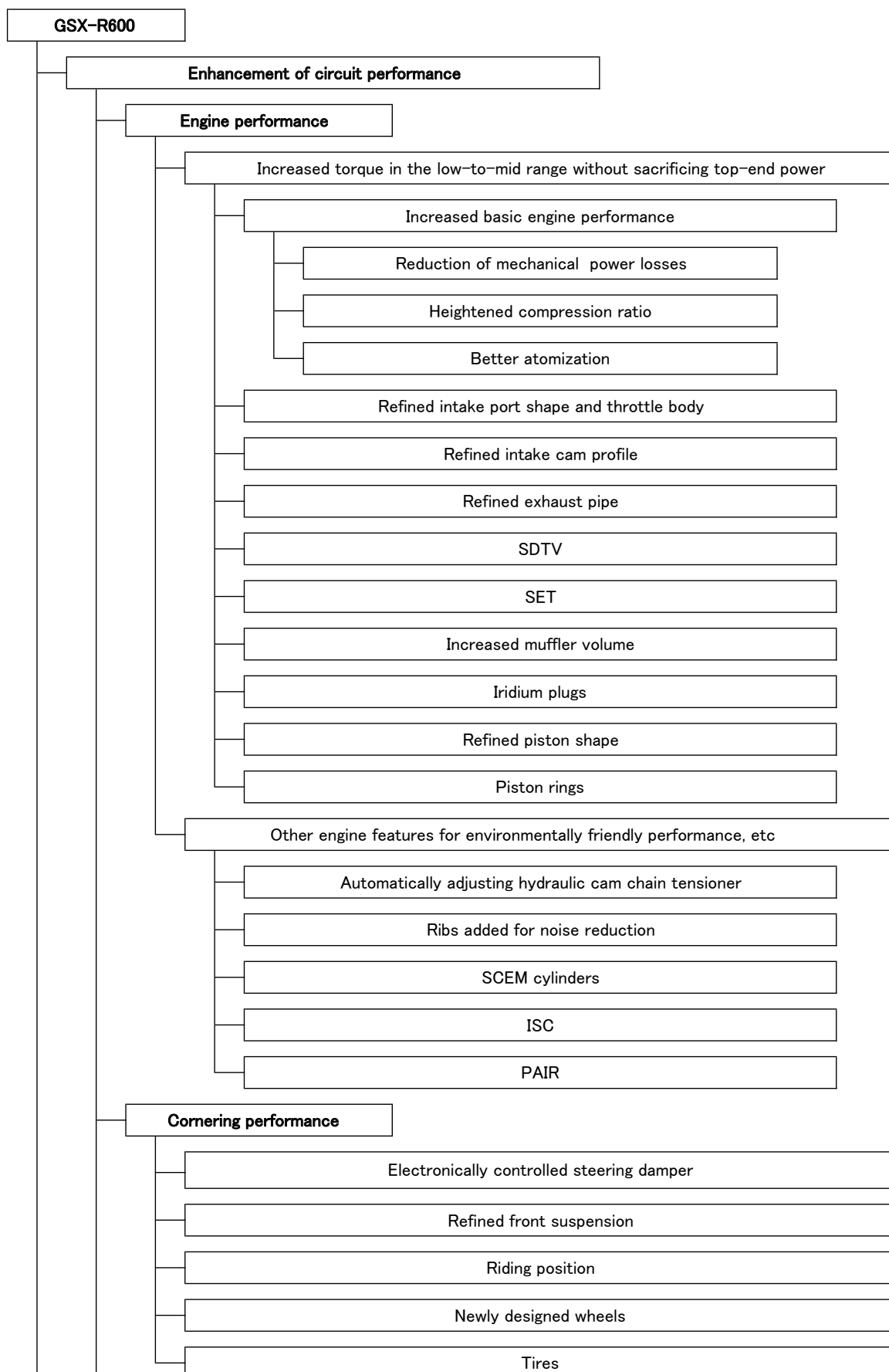
1. Enhancement of circuit performance

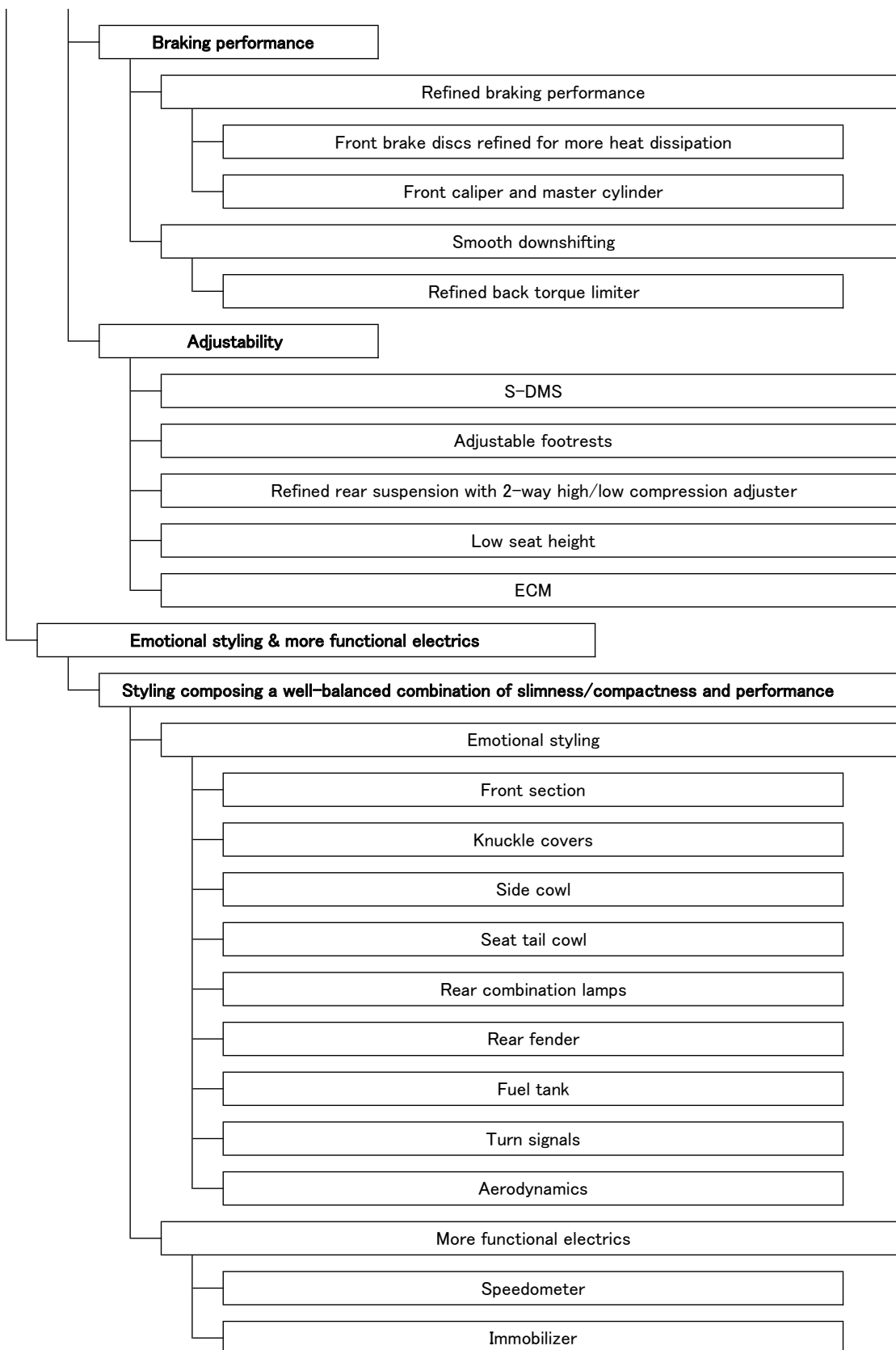
	Changes		Results
Engine	Greater compression ratio, modified combustion chamber...etc	⇒	Higher torque at low to mid range
Cornering	Refined suspension, electronically controlled steering damper..etc	⇒	Refined cornering performance
Braking	Refined back torque limiter, front brake discs refined for more heat dissipation..etc	⇒	Refined braking performance
Adjustability	Suzuki Drive Mode Selector (S-DMS)	⇒	Better suit rider preferences

2. Further evolution of the styling design

Styling composing a well-balanced combination of slimness/compactness and performance

2008 GSX-R600 Concept chart

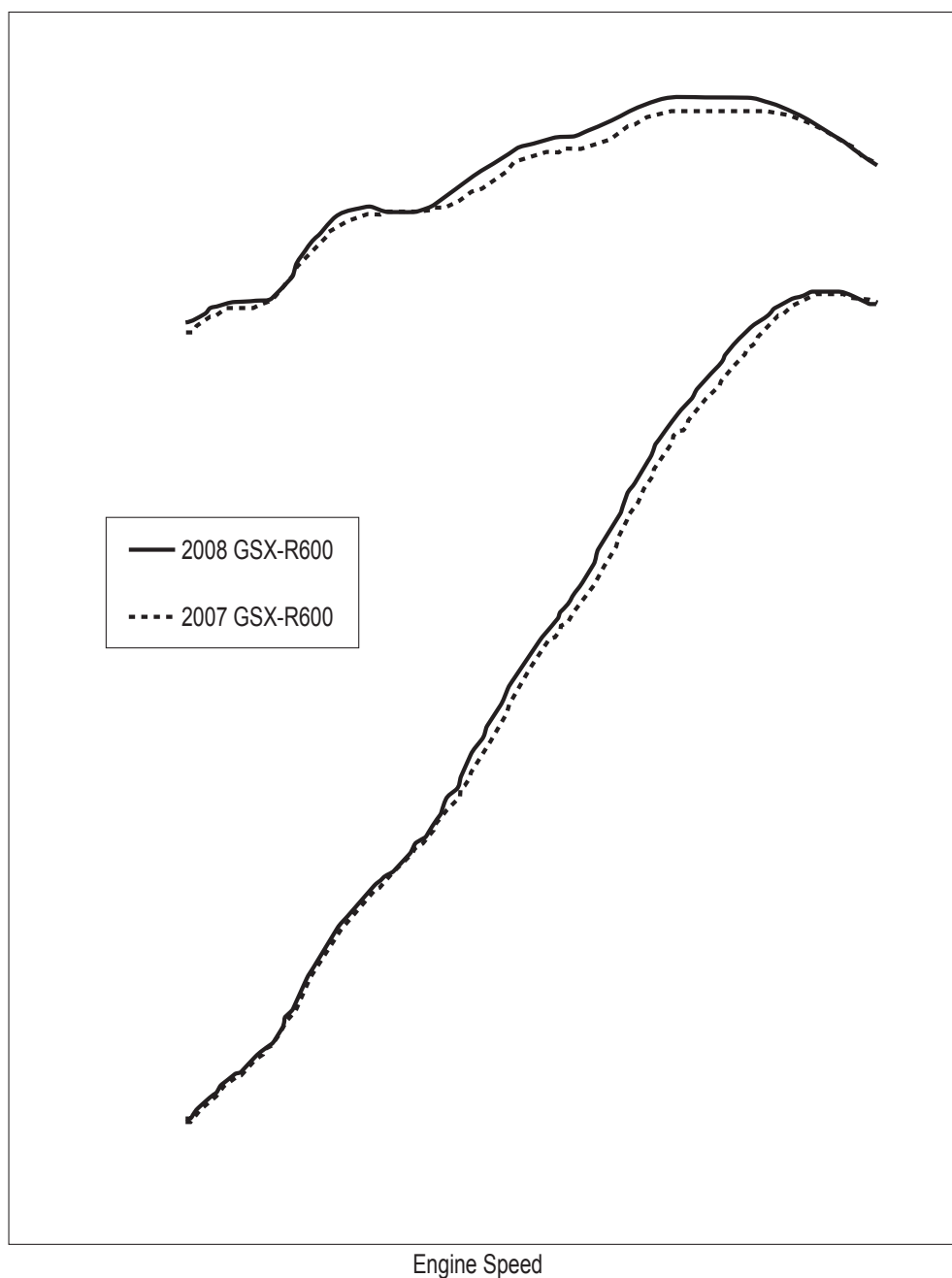




A. Enhancement of circuit performance

1. Engine performance

1-1. Increased torque in the low-to-mid range without sacrificing top-end power



One of the biggest highlights of the latest GSX-R600 engine evolution is the increased low-to-mid-range torque.



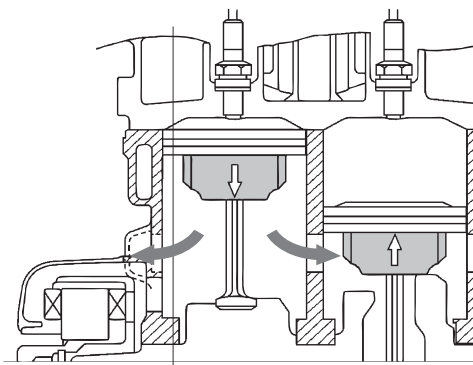
	2008 GSX-R600	2007 GSX-R600
Displacement	→	599cm ³
Bore	→	67.0mm
Stroke	→	42.5mm
Bore / Stroke	→	0.634
Cylinder Pitch	→	76-76-76
Compression Ratio	12.8 : 1	12.5 : 1

- **Increased basic engine performance**

Increased basic engine performance brings more torque in the low-to-mid-range without sacrificing top end power.

- **Reduction of mechanical power losses (larger ventilation holes)**

Ventilation holes are opened on the cylinder walls. With conventional cylinders, a descending piston increases air pressure in the crankcase, causing pumping losses. The GSX-R600 design reduces such pumping losses by letting the compressed air escape from these ventilation holes to adjacent cylinders (where the pistons are rising). The diameter of these holes is increased from 39mm on the current model to 41mm, with the aim of letting the compressed air escape more smoothly.

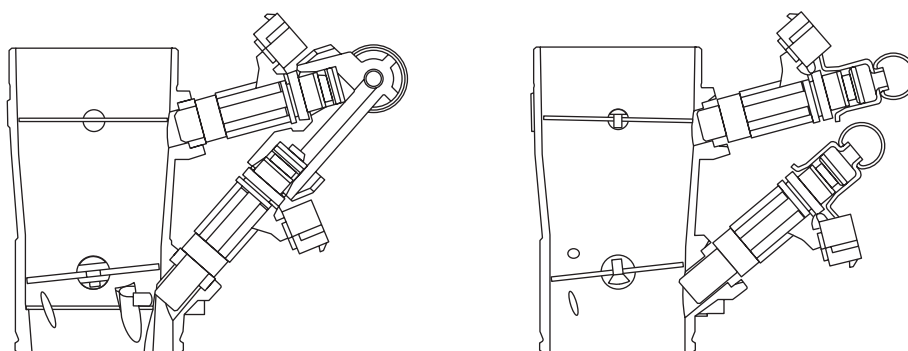


• Heightened compression ratio

Combustion chamber shape was modified, and compression ratio was heightened from 12.5 to 12.8, to increase power output across the powerband. To make the maximum use of the across-the-powerband torque increase delivered by the heightened compression ratio, we chose to keep the power in the peak-output range about the same as the current model, and put more emphasis on low-to-mid-range torque through changes to the exhaust system and cams, with the overall objective of achieving increased low-to-mid-range power output.

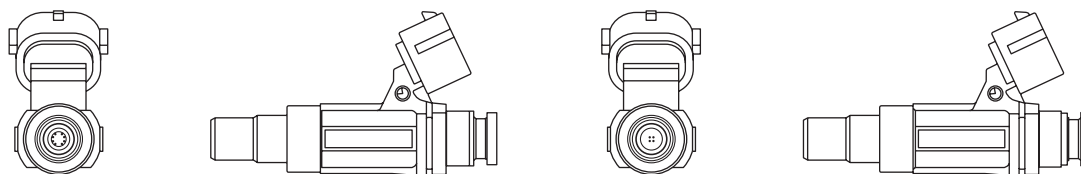
• Better atomization

The latest-design fuel-injection system, employing twin injectors and SDTV (Suzuki Dual Throttle Valve).



2008 GSX-R600 twin injector system 2007 GSX-R600 twin injector system

The primary injectors are now the compact and lightweight 8-hole, fine-spray type. Two injectors are used for each throttle body. The design improves atomization performance and contributes to increased power output and reduced exhaust emissions.



2008 GSX-R600 8-hole fuel injector

2007 GSX-R600 4-hole fuel injector

	2008 GSX-R600	2007 GSX-R600
Number of injector holes	8	4

The primary injector, positioned closer to the intake port, operates constantly; the secondary injector, located closer to the air cleaner box, operates at high rpm and high loading conditions to help the engine deliver higher power.

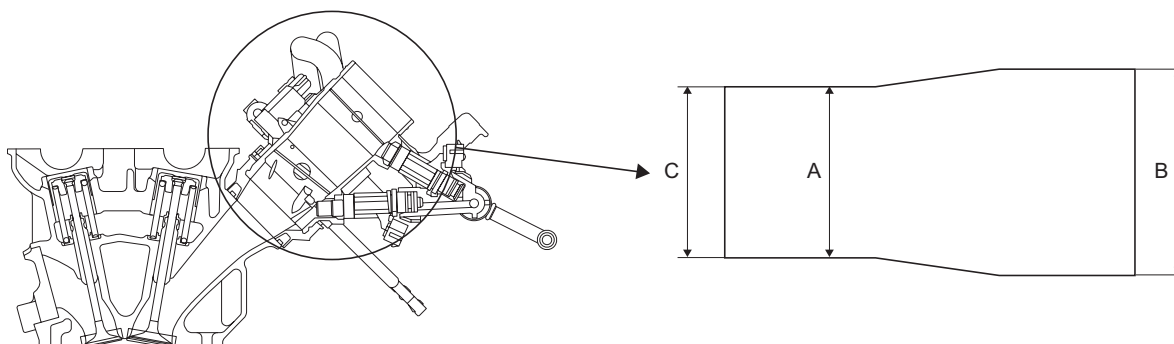
The primary injector's on-time (the duration of the injector on-time determines the volume of fuel supplied to the engine) is calculated by the ECM based on engine rpm, intake pressure and throttle position. The secondary injector's on-time is calculated based on engine rpm and throttle position.

- **Refined intake port shape and throttle body**

The throttle body/intake connecting section now has a tapered shape forming a smooth match with the port shape downstream, to help maintain a smooth intake flow. As a result, intake airflow velocity in the injector opening area is increased, which helps enhance atomization for smooth engine response.

Each throttle body has a large diameter along with a tapered shape (46mm at the air cleaner box attaching section; 36.5mm at the intake manifold).

	2008 GSX-R600	2007 GSX-R600
Pitch	→	71-76-71
A) Primary Valve Diameter	→	40mm
B) Inlet Diameter	→	46mm
C) Outlet Diameter	36.5mm	40mm



- **Refined intake cam profile**

The cam profile is changed so that the amount of lift is changed from 8.6mm to 8.2mm to deliver increased mid-range power output.

- **Refined exhaust pipe**

Exhaust pipe diameter is changed from 38.1mm to 35mm, to adjust exhaust pulses for increased power output in the low-range, around the peak-torque rpm range.

- **Suzuki Dual Throttle Valve (SDTV)**

The Suzuki Dual Throttle Valve (SDTV) design has two butterfly valves in each throttle body. The primary valve is connected to the throttle cable, while the opening position of the secondary valve is regulated by a motor controlled by the ECM based on engine rpm, gear position and primary-valve position.

The secondary valve opens/closes to constantly maintain optimum intake velocity, thus resulting in a close-to-linear throttle response, increased low-to-mid range torque and high combustion efficiency.

- **Suzuki Exhaust Tuning (SET)**

Suzuki Exhaust Tuning (SET) is an exhaust device that opens/closes a butterfly valve in accordance with the engine rpm to maximize the exhaust-pulse effect, especially at low-to-mid rpm, to increase power output.

- **Increased muffler volume**

Muffler and chamber volume are increased to heighten low-to-mid range torque. Newly equipped distinctly shaped triangular silencers and covers over the front and rear sections of the silencers present a fresh new image along with an impression of being designed as compact and short as possible.

- **Iridium plugs**

The new GSX-R600 uses NGK-made CR9EIA-9 iridium plugs.



- **Refined piston shape**

Piston shape is reviewed, in accordance with the raised compression ratio, modified combustion chamber shape and new iridium plugs.

- **Piston rings**

The piston rings (upper compression ring and oil control ring) are made with ion-plating processing using Physical Vapor Deposition (PVD) method.

- PVD method involves vaporizing chrome nitride inside a vacuum chamber and letting it attach to a surface. Compared to conventional chrome-plating, PVD method makes possible a more uniform plating-surface thickness and a smoother surface processing, resulting in reduced friction losses and reduced oil consumption, together with increased durability.

	2008 GSX-R600	2007 GSX-R600
Piston Top Ring Surface Treatment	→	PVD Plating
Piston Top Ring Cross-Section Shape	→	Rectangular

1-2. Other engine features for environmentally friendly performance, etc

- **Automatically adjusting hydraulic cam chain tensioner**

Cam chain tensioner is changed to an automatically adjusting hydraulic type to improve quietness of operation while also reducing mechanical losses. Cam chain guide no. 1 is changed to plastic to reduce weight.

- **Ribs added for noise reduction**

Ribs added to the clutch cover and oil pan increase rigidity, helping to prevent resonances and thus reduce engine noise.

- **Suzuki Composite Electrochemical Material (SCEM)-plated cylinders**

The cylinders are plated with Suzuki Composite Electrochemical Material (SCEM), Suzuki's well-proven, racing-derived, nickel-phosphorus-silicon-carbide coating technology. SCEM offers efficient heat dissipation and allows smaller piston-to-cylinder clearances, resulting in superb wear resistance for increased durability.

- **Idle Speed Control (ISC)**

Idle Speed Control (ISC) constantly maintains stable idling operation, greatly enhancing user comfort. ISC functions as a replacement for the idle jet on carburetors. The ECM senses and calculates the difference between actual idling rpm and normal idling rpm; an ISC valve located in the throttle body bypass circuit is opened/closed by a stepping motor to regulate the amount of intake airflow and thus compensate to reach the normal idling rpm. When starting in cold climates, the system also conducts fast-idle control by increasing the volume of intake airflow based on engine coolant temperature information from the sensor.

- **Pulsed-AIR (PAIR) injection**

Built-in PAIR (Pulsed-AIR) system greatly contributes to environmentally friendly performance.

- PAIR system directly injects fresh air from the air cleaner box into the cylinder head exhaust port – through a PAIR control solenoid valve which is controlled by the ECM in accordance with throttle position and engine rpm - to ignite unburned hydrocarbons (HC) and thus reduces carbon monoxide (CO) emissions.

2. Cornering performance

Various items related to cornering ability, added and refined to realize exhilarating cornering performance.

- **Electronically controlled steering damper**

Electronically controlled steering damper, the same type as on the 2007 GSX-R1000. The ECM controls, in relation to vehicle speed, the amount of force used for closing the solenoid valve to vary resistance in the oil route and thus increase/decrease the damping force. The result is strong damping force delivered at high speeds and small damping force at low speeds to help maintain a rider-friendly handling character.



- **Refined front suspension**

Front suspension retains the current model's well-accepted SHOWA-made 41mm-diameter inner-cartridge-type inverted forks, but with further refined settings. As with the current model, spring preload, rebound and compression damping are all fully adjustable.

	2008 GSX-R600	2007 GSX-R600
Brand	→	SHOWA
Type	→	Inverted, Cartridge
Inner Tube Diameter	→	41mm
Stroke	→	120mm
Preload Adjustment	→	Fully Adjustable
Compression Adjustment	→	Fully Adjustable
Rebound Adjustment	→	Fully Adjustable

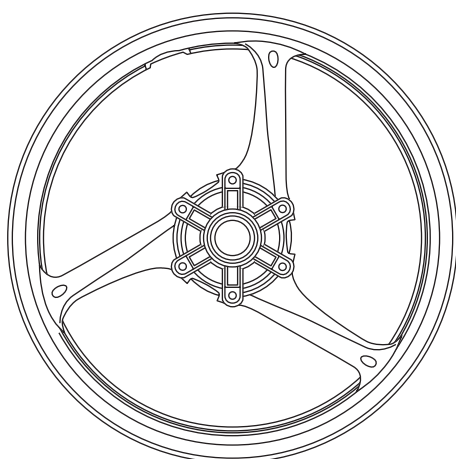
- **Riding position**

The compact riding position with a short distance between the handlebars and the hip point is retained from the current model. The GSX-R600 design does not sacrifice practicality such as ease of riders' legs reaching the ground, and achieves the desired circuit handling performance with a different approach, such as extensively reviewing and refining the chassis dimensions.

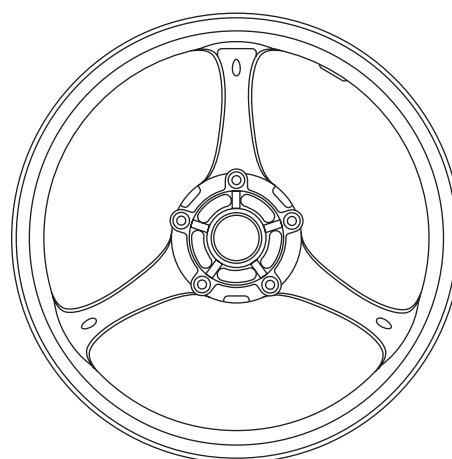
- **Newly designed wheels**

New wheels front and rear, designed pursuing increased rigidity and reduced weight. Compared to the current model's wheels having spokes attaching vertically to the rims and hubs, the new GSX-R600 wheels have spokes attaching to the rims and hubs in an offset manner, at an angle. This mitigates external shocks, especially at the rim sections. The lighter design means reduced unsprung weight which helps contribute to the new GSX-R600's handling and acceleration performance.

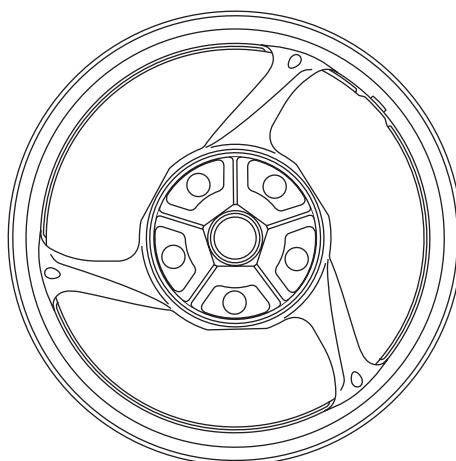
Wheel sizes remain the same as current model: front 17 M/C x MT3.5, rear 17 M/C x MT5.5.



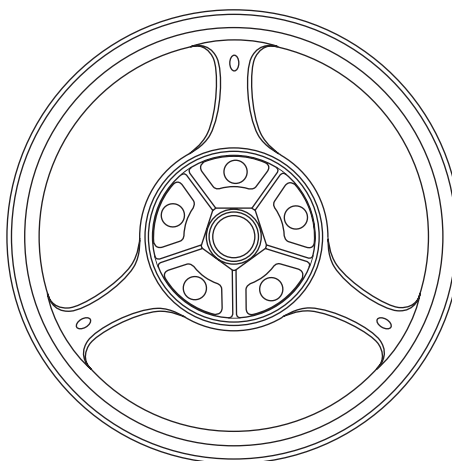
2008 GSX-R600 Front wheel



2007 GSX-R600 Front wheel



2008 GSX-R600 Rear wheel



2007 GSX-R600 Rear wheel

- **Tires**

New Bridgestone high-performance sport tires are employed to realize running performance – the handling and grip – befitting the model’s concept “The Top Performer”. Sizes remain the same as current model: 120/70ZR17 M/C front and 180/55ZR17 M/C rear.

3. Braking performance

3-1. Refined braking performance

Various items refined to make braking operation even more efficient, smooth and rider friendly.

- **Front brake discs refined for more heat dissipation**

The number of floating pins are increased to 12 from 8 for more heat dissipation and to help mitigate heat – caused distortion of the discs. In order to help offset the weight increase caused by the increase in the number of floating pins, front disc thickness is reduced from 5.5 mm to 5.0 mm.

	2008 GSX-R600	2007 GSX-R600
Disc Diameter	→	310mm
Disc Thickness	5,0mm	5.5mm
Number of Floating Pins	12	8



2008 GSX-R600 front brake disc



2007 GSX-R600 front brake disc

- **Front caliper and master cylinder**

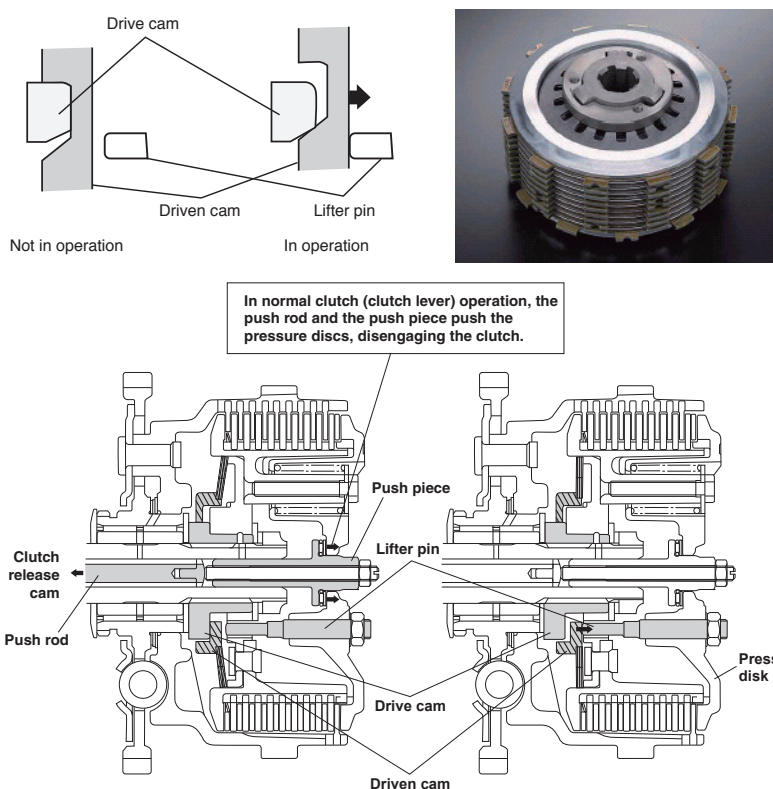
TOKICO-made radial-mount 4-piston-caliper front brakes delivering high braking performance, and shared with the new Hayabusa. Lightweight small-diameter brake hose with low expansion, retained from the current model, realizes superb lever-input efficiency. Caliper piston sizes are 32mm-30mm in diameter. The 19.05mm-diameter master cylinder radial pump on the current model is reduced to a diameter of 17.46mm, to increase the effective force by enlarging the caliper piston-to-cylinder surface ratio.

	2008 GSX-R600	2007 GSX-R600
Brand	→	TOKICO
Caliper Type	→	Opposed 4 Piston
Mounting	→	Radial
Piston Diameter	32mm-30mm	34-30mm
Master Cylinder Diameter	17.46	19.05

3-2. Smooth downshifting

- **Refined back-torque limiter**

The back-torque limiter now delivers an increased, more refined operating feel with these changes: reviewing drive-cam shape as a measure to smooth out unevenness, providing an additional clutch plate in the gear box, and reviewing clutch-plate material. The back-torque limiter assists the rider in taking control of the increased engine power and making the most use of the chassis performance.



	2008 GSX-R600	2007 GSX-R600
Back Torque Limiter	→	Yes

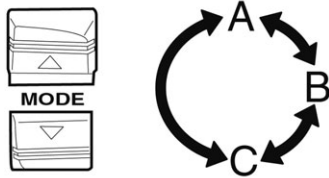
	2008 GSX-R600	2007 GSX-R600
Primary reduction ratio	→	1.974 (77/39)
Gear ratios, Low	→	2.785 (39/14)
2nd	→	2.052 (39/19)
3rd	→	1.714 (36/21)
4th	→	1.500 (36/24)
5th	→	1.347 (31/23)
Top	→	1.208 (29/24)
Final reduction ratio	→	2.687 (43/16)

4. Adjustability

Adjustability features are further enhanced, to better respond to a wide range of individual rider preferences.

- **Suzuki Drive Mode Selector (S-DMS)**

The driving mode switch button is equipped on the handlebar switch. The driving mode switches between modes A, B and C whenever the rider pushes this button.

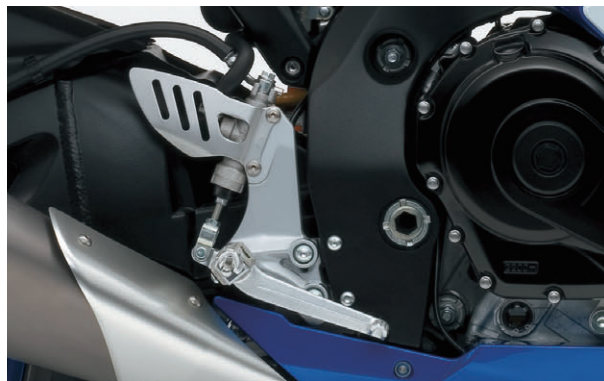


2008 GSX-R600 Driving mode indicator

(The photo is edited to show all of the instrument lights and displays.)

- **Adjustable footrests**

Footrests retain the current model's design with 3-way adjustability. Adjustability covering 14mm both horizontally and vertically makes it possible to adjust to match individual rider sizes and riding styles.



- **Refined rear suspension with 2-way high/low compression adjuster**

Rear shock absorber is also retained from the current model - a well-accepted SHOWA-made 40mm-piston-diameter aluminum-alloy unit, but with settings changed and further refined, based on repeated running tests on the bike. Rod diameter is 14mm. Spring preload, rebound and compression damping are all fully adjustable. Compression damping, in particular, is a 2-way - high-speed and low-speed - adjustable type, making possible precise settings.



2008 GSX-R600 Rear suspension

	2008 GSX-R600	2007 GSX-R600
Brand	→	SHOWA
Piston Diameter	→	40mm
Rod Diameter	→	14mm
Unit Length	→	316mm
Stroke	→	65mm
Wheel Travel	→	130mm
Rebound Adjustment	→	Fully Adjustable
Compression Adjustment	→	2-Way Fully Adjustable
Pre-load Adjustment	→	Fully Adjustable

- **Low seat height**

Seat height of 810mm is retained from the current model, which is well-accepted for allowing the rider comfortable reach to the ground.

- **ECM**

ECM microcomputer is strengthened to a 32 bit, 1024 kilobyte ROM (Read-only Memory), to perform overall control of numerous advanced electronic features such as S-DMS and FI-related feedback control, thus supporting the GSX-R600's high total performance.

	2008 GSX-R600	2007 GSX-R600
CPU	→	32bit
ROM	1024kilobyte	384kilobyte

B. Emotional styling & more functional electrics

Styling composed for a well-balanced combination of slimness/compactness (well-centered vehicle mass) and agile performance, and to compose an attractive, functional and eye-pleasing evolution of the current model's styling image. The new horizontal 3-headlight layout – center low beam and left/right high beam – illuminates a wide area while retaining the vertically stacked dual-headlight styling image shared by the GSX-R series by using a position lamp above the low beam. Knuckle covers inherit the GSX-R1000 image, but with shape reviewed for wind protection efficiency. The side cowl design composed of contrasting edgy lines and flat surfaces is reshaped to further accentuate the slim, compact form. The seat-tail-cowl section is refined for an even shorter, thinner image. Upward-extended LED rear combination lamps using red lens heighten luxury feel. Color-design changes to the rear fender and fuel tank also add to the fresh new image.



1. Styling composing a well-balanced combination of slimness/compactness and performance

1-1. Emotional styling

• Front section

The styling design of the front section inherits the vertically stacked dual headlight image which has become an identifying characteristic of the GSX-R series, thus maintaining the look that says “GSX-R” at a glance, while in reality using a horizontal three-headlight layout, with the low beam at center and high beam lights on the left and right - a bold change in design expressing an aggressive evolutionary step to the next generation. The vertically stacked image is expressed by placing a position lamp above the centrally located low-beam.



The new GSX-R600 uses a projector lamp for low beam and multi-reflector lamps for the left- and right-side high beams. Bulbs are low beam 12V 55W H11 and high beam 12V 60W HB3, for ample illumination. Light distribution is changed; illumination area is expanded, particularly for high beam when cornering.

Headlamp layout is determined not only for a styling-design evolution, but also with emphasis on ensuring functionality. The SRAD air scoops, in particular, were carefully positioned as close as possible to the front nose, where the frontal wind pressure is the strongest - just as they were for the current model.

- **Knuckle covers**

The knuckle covers inherit the image of the flagship model, the GSX-R1000, but with their shape reviewed, for efficient wind protection resulting in a design identifiable as a GSX-R series at a glance while also expressing an evolution to the next generation.



- **Side cowl**

The side-cowl-section design is shaped with the motif of motocross-model radiator shrouds, for an edgy impression. Connecting this side-cowl section to the bottom cowl with an X-shaped panel enabled minimizing the surface area of each section while reducing the volume of the cowling as a whole. While based on the current model's image composed of nicely contrasting edgy lines and flat surfaces, the new design brings about further slimness and compactness.



- **Seat-tail cowl**

The seat-tail-cowl section on the current model is designed slim and compact by using layouts such as low muffler position and built-in rear turn signals. The new GSX-R600 design further refines the slimness and compactness, to make the section even shorter and thinner.



- **Rear combination lamps**

The rear combination lamps use Light Emitting Diodes (LEDs) since they offer low electrical consumption, vibration resistance and flexibility of styling design. The lens' basic design carries over the left-right dual layout of the current model, but with a wider space between the left and right sides and the upper end of the lens extended up to and over the top of the seat cowl, to express a 3D image representing further evolution. And in contrast to the current model's combination of clear lens and red LEDs, the new design combines red lens and red LEDs for a further heightened luxury feel.



- **Rear fender**

The rear fender is also sized as small as possible to further enhance the compact and edgy rear-section impression.

The left- and right-side rear fender rear cover (the stay section connecting the seat cowl and the rear fender license plate holder) now has a metallic-look paint to present a light, agile image.



- **Fuel tank**

The fuel tank, while inheriting the GSX-R1000 image, now includes body-color-coordinated components at the side-cover section to form a smoother connection with the seat cowl and thus compose a one-piece image seen with racing machines and a fresh new impression. Function-wise, fuel capacity is increased by 0.5 liter to 17.0 liters, from the current model's 16.5 liters.



- **Turn signals**

The front turn signals, like on the current model, are integrated into the rear-view mirrors, to carry over the GSX-R series image, as well as to minimize frontal projected area.



- **Aerodynamics**

Aerodynamic performance of the chassis as a whole has been carefully reviewed, while retaining the well-accepted wind protection efficiency of the current model. The shape and height of the windscreen at its rear end is basically unchanged from the current model.

1-2. More functional electrics

The new GSX-R600 comes with electrical features that enhance rider convenience, including an engine rpm indicator inside the meter panel.

• Speedometer

The speedometer unit retains the current model's unit well-accepted for its racing impression and superb ease of reading, but adds an indicator for the newly equipped S-DMS on the Liquid Crystal Display (LCD) screen. The unit is composed of:

- Tachometer driven by a stepping motor delivering quick response.
- Indicators and warning lamps for neutral, remaining fuel, immobilizer (except for North American market), high beam, FI and turn signals are LEDs offering high vibration resistance and low electrical consumption.
- LCD screen contains speedometer, odometer, twin trip meters, clock, reserve trip meter, adjustment of illumination brightness, coolant temperature, gear position, hydraulics and S-DMS mode displays. In addition, as with the current model, an engine rpm indicator is equipped on the lower part of the meter panel. The indicator can be programmed to light on at an rpm selected by the rider.



(The photo is edited to show all of the instrument lights and displays.)

• Immobilizer

Immobilizer is standard equipment. (except for North American market). The immobilizer is the rolling-code type: the immobilizer communicates with the ECM using a different code each time the ignition switch is turned on - a complex signaling system that makes for a highly effective theft-prevention measure.

C. SPECIFICATIONS

DIMENSIONS AND DRY MASS			
Overall length			2040 mm (80.3 in)
Overall width			715 mm (28.1 in)
Overall height			1125 mm (44.3 in)
Wheelbase			1400 mm (55.1 in)
Ground clearance			130 mm (5.1 in)
Seat height			810 mm (31.9 in)
Dry mass			165 kg (363 lbs)
ENGINE			
Type			4-stroke, liquid-cooled, DOHC
Number of cylinders			4
Bore			67.0 mm (2.638 in)
Stroke			42.5 mm (1.673 in)
Displacement			599 cm ³ (36.5 cu. in)
Compression ratio			12.8 : 1
Fuel system			Fuel injection
Air cleaner			Paper element
Starter system			Electric
Lubrication system			Wet sump
Idle speed			1300 ± 100 r/min
DRIVE TRAIN			
Clutch			Wet multi-plate type
Transmission			6-speed constant mesh
Gearshift pattern			1-down, 5-up
Primary reduction ratio			1.974 (77/39)
Gear ratios	Low		2.785 (39/14)
	2nd		2.052 (39/19)
	3rd		1.714 (36/21)
	4th		1.500 (36/24)
	5th		1.347 (31/23)
	Top		1.208 (29/24)
Final reduction ratio			2.687 (43/16)
Drive chain			RK525SMOZ8, 114 links
CHASSIS			
Front suspension			Inverted telescopic, coil spring, oil damped
Rear suspension			Link type, coil spring, oil damped
Front fork stroke			120 mm (4.7 in)
Rear wheel travel			130 mm (5.1 in)
Caster			23°45'
Trail			97 mm (3.82 in)
Steering angle			27° (right & left)
Turning radius			3.4 m (11.2 ft)
Front brake			Disc brake, twin
Rear brake			Disc brake
Front tire size			120/70ZR17M/C (58W) tubeless
Rear tire size			180/55ZR17M/C (73W) tubeless

ELECTRICAL			
Ignition type		Electronic ignition (Transistorized)	
Ignition timing		6° B.T.D.C. at 1 300 r/min	
Spark plug		NGK CR9EIA-9 or DENSO IU27D	
Battery		12V 28.8 kC (8 Ah)/10 HR	
Generator		Three phase A.C. generator	
Main fuse		30A	
Fuse		15/10/15/15/10/10A	
Headlight		12V 55W (H11) + 12V 60W (HB3)×2	
Turn signal light		12V 21W	
Brake light/Taillight		LED	
Position light		12V 5W	
Speedometer light		LED	
Tachometer light		LED	
Neutral indicator light		LED	
High beam indicator light		LED	
Turn signal indicator light		LED	
Fuel level indicator light		LED	
Oil pressure / Coolant temperature / FI indicator light		LED	
Engine RPM indicator light		LED	
Immobilizer indicator light		LED...Except for North American market	
CAPACITIES			
Fuel tank		17.0L (4.5/3.7 US/Imp gal)	
Engine oil	Oil change	2.2L (2.3/1.9 US/Imp qt)	
	With filter change	2.5L (2.6/2.2 US/Imp qt)	
	Overhaul	2.9L (3.1/2.6 US/Imp qt)	
Coolant		2.7L (2.9/2.4 US/Imp qt)	



Own The Racetrack