

RM-Z450

The Winning Balance

Stripped to its essence, motocross requires a race bike to do three key things: Run, Turn and Stop - all better than the rest.

The RM-Z450 is designed with a laser focus on achieving this winning balance. With a solid heritage of dozens of world and national championship victories, its well-balanced engine, chassis and electronics, along with its dramatic styling, make the RM-Z450 the most potent, balanced and competitive motocrosser in its class.



2023 Suzuki RM-Z450



Rear Suspension



Showa Coil Spring Fork



Suzuki Holeshot Assist Control (S-HAC)



Wheel Rims

Key Features

The traction management system features Suzuki Holeshoot Assist Control (S-HAC) with three mode settings, which helps maximize acceleration to put the RM-Z450 out front through the three critical stages of a motocross start.

The engine features great throttle response and high peak power.

Responsive SHOWA coil-spring front forks feature strength, durability, ease of daily maintenance, easy tuning, and a light, optimized upper triple-clamp.

Showa Balance Free Rear Cushion (BFRC) shock better controls the stroke and smooth out reactions to bumps and chop, even under severe braking.

Light weight wheel rims feature a structural design that maintains strength while reducing unsprung weight, and an anodized black finish for tough looks.

Bridgestone BATTLECROSS X30 tires bring outstanding grip that helps maximize motocross track performance.

The frame and swingarm balance lightness with strength, and chassis dimensions blend nimble handling with stability.

Aggressive styling blends function with Suzuki character, and includes a narrow cockpit that lets you move freely to maximize racing performance.

Rider-friendly Tuning

Suzuki's MX-Tuner 2.0 is supplied, providing quick fuel injection and ignition tuning through an easy-to-use smartphone application.

Fuel couplers are included for quick and easy tuning of the electronic fuel injection system.

Engine Features

The 449cm³ liquid-cooled, four-stroke, four-valve, DOHC engine is the latest incarnation of Suzuki's proven and reliable fuel-injected powerplant.

The engine has high peak horsepower with strong torque at lower engine speeds for excellent throttle response through the entire rev range.

The cylinder head intake port shape creates a high amount of tumble flow to the incoming fuel/air to maximize power output.

The air cleaner's large and straight opening creates a direct air path to the throttle body to maximize performance.

Suzuki's advanced fuel injection system creates extra-smooth power delivery, high fuel efficiency, and superb reliability.

The RM-Z450's throttle body design locates the fuel injector, fed by a high-pressure fuel pump, so it sprays fuel directly at the butterfly valve to optimize atomization of the fuel/air charge.

This throttle body design eliminates complex control linkage, so the rider feels a more direct connection to the engine.

The intake camshaft profile's valve lift helps boost power at all engine speeds.

The compact aluminum cylinder is finished with Suzuki Composite Electrochemical Material (SCEM) coating for durability, light weight, and efficient heat transfer.

The piston's casting includes strengthening ribs near the wrist pin bosses to match component reliability to the engine's high horsepower.

Engine starting is simple and efficient due to a long kick-start lever, well-matched internal gear ratios, a large air cleaner and breather system, plus an automatic decompression system that works precisely and efficiently (eliminating the need for a heavy and costly electric start system).

Tough plastic engine protectors help guard the coolant pump (on the right) and the stator cover (on the left) from debris and stones.

Advanced Electronics Feature

Suzuki's MX-Tuner 2.0 provides the ability to easily adjust the fuel injection and ignition system settings for optimal race performance.

Fuel delivery and ignition timing can be quickly changed using a smartphone application that wirelessly connects to the MX-Tuner's compact transceiver.

The MX-Tuner application can pre-program personalized settings into the ECM, which can be activated by plugging in one of the supplied fuel couplers.

Racers and tuners can easily change settings to match performance-related updates.

The application can save a number of settings for different tracks or weather conditions, and settings can be exchanged with other racers.

Real-time engine data and run-time information are accessible to help the rider stay on top of bike maintenance.

Suzuki's proven, easy-to-use fuel couplers are also included to simplify tuning of the electronic fuel injection system.

Two provided couplers enable quick fuel adjustments to suit riding conditions. One is for a richer-than-stock and another for a leaner-than-stock fuel setting. Riders can change fuel settings in seconds by simply connecting either coupler to the wire harness.

The RM-Z450 features an efficient traction management system. The Electronic Control Module (ECM) continually measures throttle opening, engine speed and gear position, and then adjusts the ignition timing and fuel injector duration to fine-tune engine output to deliver the best traction for the riding conditions.

Optimized specifically for motocross use, the advanced traction management system works seamlessly with the rider to put power to the ground and maximize traction on the dirt.

The Suzuki Holeshoot Assist Control (S-HAC) is a selectable launch system derived from the factory race bike to help launching from the starting gate to take an early lead. There are three launch modes riders can choose for the best option per their skill level and starting conditions. There are also three stages to Mode A and Mode B of the S-HAC system. This helps riders at the moment of launch, when crossing the gate, and through acceleration to the full speed. The S-HAC settings for Mode A on the RM-Z450 are specially tuned to aid the rider's throttle control during launches.

Mode A: For hard surfaces or slippery conditions at the starting gate. In this mode, S-HAC alters ignition timing at the moment of launch and the ride over the gate to reduce wheel slip to deliver a smooth start. It also advances ignition timing during this sequence for stronger acceleration. After six seconds or when the rider reaches fourth gear, the system shuts off and returns to normal ignition timing.

Benefit of Mode A: Mode A offers more controlled launches for novice riders and/or hard and slippery traction conditions.

Mode B: When conditions at the starting gate have better traction, and a more aggressive launch is desired. S-HAC advances the ignition timing to allow increased throttle response and stronger acceleration off the line. The ignition timing alternation follows a sequence similar to that of Mode A, but with increased overall timing. The system will return the ignition to normal operation in three situations (whichever happens first): After six seconds, when the rider reaches fourth gear, or when the throttle is closed. The system then shuts off and returns to normal ignition timing.

Benefit of Mode B: Mode B offers more aggressive launches for skilled riders, and/or good starting conditions.

Base Mode: Standard power launch, no action required on the S-HAC switch.

Designed for motocross use, the lightweight, battery-less, electronic fuel injection system is key to the engine's efficient power delivery.

The well-sorted, five-speed transmission enables precise gear shift operation. This precise transmission feel is the result of an accurately machined shift cam for exact gear selection. Specialized machining processes also increase the precision of the matching gears.

The multi-plate, wet-clutch uses a rack-and-pinion clutch release mechanism for precise feel of the engagement and disengagement points while riding.

The lightweight chain guide is shaped to accurately route the drive chain smoothly.

Chassis Features

The RM-Z450's twin-spar frame and twin-beam swingarm design continues Suzuki's tradition of delivering the best-handling motocross machines available.

This aluminum-alloy, twin-spar frame combines cast and extruded sections to achieve superior front-and-rear weight distribution while balancing strength and weight. This helps achieve outstanding cornering performance and shock absorption, while also contributing to stable handling.

The swingarm is assembled with thin, yet strong, materials that further contribute to cornering performance and stable handling.

The short wheelbase and frame head-pipe location produce quick and nimble handling characteristics.

Hexagonal aluminum rails are used on the sub-frame for light weight, a slim appearance, and easier air filter service.

The sub-frame rails route inward to slim the bodywork, but also route upwards to provide additional space for the large air cleaner and the advanced BFRC (Balance Free Rear Cushion) shock absorber.

Like the trim sub-frame, all of the bodywork is slim to enable the RM-Z450 rider to move freely in the cockpit, especially during spirited riding.

Inspired by the advanced suspension from the GSX-R1000R supersport bike, the RM-Z450 is fitted with a SHOWA BFRC shock absorber.

The BFRC uses a separate, external damping circuit that improves the responsiveness of damping force to deliver excellent traction and better absorption over bumps.

The fully adjustable BFRC controls damping so well during minute suspension movements that ride comfort is increased at lower speeds, while handling is enhanced at higher speeds.

The SHOWA coil spring front forks have large inner tubes and rod pipes for strength and durability.

Springs in each fork leg combine with large, adjustable damping cylinders to deliver better response to the terrain and provide a strong feeling of control to the rider.

Front suspension tuning and maintenance is balanced and easy. A benefit during frequent riding.

The strong RENTHAL aluminum tapered handlebars help aid the rider during aggressive maneuvering.

The light upper fork bracket was developed to complement the SHOWA coil spring front suspension and handlebars.

A large 270mm, wave-style front brake rotor with a twin piston caliper provide sure stopping performance with a positive feel.

The trim rear brake master cylinder hugs the frame beam to reduce dirt contamination and the chance of the rider's boot touching it during riding.

To support the RM-Z450's strong engine, braking, and handling performance, the bike is fitted with race-developed Bridgestone BATTLECROSS X30 tires.

The wheels feature black anodized rims with a cross-section design that maintains strength while reducing unsprung weight.

Suzuki beak-inspired styling features a sharper front fender, radiator shrouds blending into the side covers, and an upswept tail. These promote the impression of speed while reducing weight and easing service.

The functional styling and the motorcycle's slim chassis permit a variety of rider positions that facilitate control and comfort.

The plastic fuel tank is light and features a capacity of an ample 6.3L.

The seat base, inner fenders, and side covers were developed to reduce the amount of moisture and dirt that gets to the air cleaner. This helps prevent debris from contaminating the air filter element.

Made with a special density foam, the seat is well shaped and slim to aid the rider's control of the motorcycle. The seat has a large blue gripper panel that runs nose-to-tail on the cover.

The Champion Yellow No.2 bodywork is enhanced by a graphics package that features distinctive striping and Suzuki logos.

Specifications

Overall length	2,175 mm (85.6 in)
Overall width	835 mm (32.9 in)
Overall height	1,260 mm (49.6 in)
Wheelbase	1,480 mm (58.3 in)
Ground clearance	330 mm (13.0 in)
Seat height	960 mm (37.8 in)
Curb mass	112 kg (247 lbs)
Engine type	4-stroke, liquid-cooled, DOHC
Bore × Stroke	96.0 mm × 62.1 mm (3.8 in × 2.4 in)
Engine displacement	449 cm ³ (27.4 cu.in)
Compression ratio	12.5 : 1
Fuel system	Fuel injection
Starter system	Primary kick
Lubrication system	Semi-dry sump
Transmission	5-speed constant mesh
Primary reduction ratio	2.625 (63 / 24)
Final reduction ratio	3.846 (50 / 13)
Front Suspension	Inverted telescopic, coil spring, oil damped
Rear Suspension	Link type, coil spring, oil damped
Rake / Trail	27.5° / 120 mm (4.7 in)
Front Brake	Disc
Rear Brake	Disc
Front Tires Size	80/100-21 51M, tube type
Rear Tires Size	110/90-19 62M, tube type
Ignition system	Electronic ignition (Transistorized)
Fuel tank capacity	6.3 L (1.7/1.4 US/Imp gal)
Oil capacity (Overhaul)	1.2 L (1.3/1.1 US/Imp qt)



Champion Yellow No.2 (YU1)