2021 MT-09 SP

Raven / Liquid Metal
$10,999 MSRP* $430 Destination Charge*

*Manufacturer's Suggested Retail Price (MSRP) shown. Does not include tax, title, prep or destination charges. Actual prices set by dealer.

TOP FEATURES

1. All-New 890cc Liquid-Cooled 3-Cylinder DOHC Fuel-Injected Engine

The MT-09 SP features a newly developed 890cc liquid-cooled 3-cylinder, DOHC, 4-valve-per-cylinder fuel-injected (YCC-T) engine with a downdraft intake. The bore × stroke of 78 mm × 62.1 mm and 11.5:1 compression ratio provide outstanding torque with strong power delivery characteristics. Almost all of the fundamental parts of the engine, from the pistons and connecting rods to the crankshaft, camshafts and crankcase, have all been redesigned with a reduction in weight. The combination of improved combustion efficiency and lighter weight results in an impressive fuel efficiency of 49 MPG.

2. Premium KYB and Öhlins Suspension

The MT-09 SP's KYB front suspension can be individually adjusted on each side for compression and rebound damping. Adjustments for high and low speed compression damping can also be made, giving riders more detailed settings to choose from. The 41mm inner tubes' DLC coating provides excellent sliding characteristics and also adds to the exterior's quality appearance. The MT-09 SP's rear shock features a premium Öhlins shock absorber with a remote preload adjuster, completing this class-leading suspension package.

3. Cruise Control

The MT-09 SP features a cruise control system for easy, relaxed riding. Cruise control can be set when going at least 31 mph (or 50 kmh) and in 4th gear or higher. After the cruise speed is set, the speed can be increased or decreased in increments of 1 mph (or 2 kmh) with single pushes of the switch or by continuously holding down the switch. Cancel the cruise control by braking or by using the clutch or the throttle. The “Resume” function reengages the system and returns the bike to its previous set speed.

4. Unique Styling

The MT-09 SP features special colors and graphics, a distinguished seat cover with its stylish, contrasting stitching, a clear-coated silver swingarm and clear-smoked front and rear brake fluid reservoirs that bring out the bike's pure mechanical beauty. Together, these features showcase the MT-09 SP's high quality, exclusive look among the MT lineup while linking the bike to the colorway found only on the YZF-R1M. In addition, the levers, handlebars and drive sprocket are a sleek black to further complement the MT-09 SP's design to give the rider the feeling of being one with the machine.

YAMAHA
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FEATURES & BENEFITS

TOP FEATURES - CONT.

5. Lightweight Aluminum Frame
The MT-09 SP's lightweight aluminum frame showcases the MT's signature “agility.” To ensure both straight-line stability and handling performance, the balance of longitudinal, lateral and torsional rigidity have been improved. Most notably, the lateral rigidity has been increased by approximately 50% for even more straight-line stability. The all-new frame is manufactured using the latest in Yamaha’s controlled filling (CF) die casting technology which contributes to the MT-09 SP's light weight

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6. 6-Axis IMU
The MT-09 SP features a newly developed 6-axis Inertial Measurement Unit (IMU) that retains the base performance of proven IMU in the YZF-R1 but is 50% smaller and 40% lighter due to a thorough review of the sensor layout. The engine control unit (ECU) that receives and reflects the data from the IMU is equipped with three rider aids: a Traction Control System (TCS), Slide Control System (SCS) and front-wheel LIFt control system (LIF). All three systems work together to help the rider concentrate on riding to better extract the machine’s potential. Each of the systems can also be turned on or off and have their levels of intervention adjusted to preference. With this best-in-class electronic control technology, the 2021 MT-09 gives you the ultimate control in varying weather and surface conditions.

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7. 3.5-inch Full-Color TFT Instrument Display
The MT-09 SP's 3.5-inch full-color TFT display features a bar-type tachometer that changes colors as rpm rises or falls, a clock and displays for remaining fuel, average mileage, water temperature, air temperature and a gearshift indicator (color reversed for gear in use). Easily switch between displays and information with the handlebar switches.

ENGINE

All-New 890cc Liquid-Cooled 3-Cylinder DOHC Fuel-Injected Engine
The MT-09 SP features a newly developed 890cc liquid-cooled 3-cylinder, DOHC, 4-valve-per-cylinder fuel-injected (YCC-T) engine with a downdraft intake. The bore × stroke of 78 mm × 62.1 mm and 11.5:1 compression ratio provide outstanding torque with strong power delivery characteristics. Almost all of the fundamental parts of the engine, from the pistons and connecting rods to the crankshaft, camshafts and crankcase, have all been redesigned with a reduction in weight. The combination of improved combustion efficiency and lighter weight results in an impressive fuel efficiency of 49 MPG.

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Efficient Fuel Delivery System
The fuel delivery system has been completely redesigned from the former MT-09. The fuel injectors were attached directly to the cylinder head, but the fuel injectors of the MT-09 SP are now attached to the throttle valve side of the throttle bodies. The injectors now spray at the back of the intake valve heads to promote atomization of the fuel and reduce adhesion of fuel particles to the port walls, producing outstanding combustion efficiency. The throttle valve is operated using the Yamaha Chip Controlled Throttle (YCC-T) electronic system which has been widely proven on YZF series models as well as the earlier MT-09 models.

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Lightweight Forged Pistons
The lightweight forged pistons allow for smooth, high-revving power.

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Fracture-Split Connecting Rods
The forged connecting rods are made using the fracture-split method—where the big-end ring of the connecting rod is purposefully fractured and then reassembled—to ensure an unparalleled degree of manufacturing accuracy. This creates a pair of perfectly matching halves that produce a much more precise mating surface when the rods are bolted together again around the crankshaft.

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Offset and Direct-Plated Cylinders
The CP3 engine mounts its three cylinder bores forward, towards the exhaust side. This offset reduces the piston to cylinder wall friction, creating more power and improved fuel economy while the direct-plated ceramic-composite cylinder bores provide excellent heat dissipation and reduced friction.

Symmetrical Muffler with Dual Outlets
The muffler on the MT-09 SP contributes to a lower overall weight and mass centralization but also produces a low-frequency exhaust note at low speeds. The exhaust tailpipes are left-right symmetrical which directs sound pressure to both sides of the machine, creating an exhaust note that delivers a sense of torque to the rider. The stainless steel header pipes are each given a different curvature and length for an excellent pulse effect.

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Harmonious Intake System
The intake system suits the new engine and provides linear response when the rider opens and closes the throttle. The three intake ducts also contribute to the excellent engine sound at midrange and high rpm. These ducts are designed with different cross sections and lengths so that the intake sounds they produce individually resonate harmoniously at varying wavelength ranges. At the same time, the sound pressure has also been tuned to create a pleasing sound in the mid- and high-rpm range. The result is an air cleaner box that achieves both good intake efficiency and a pleasing sound that enhances the feeling of acceleration.

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Assist and Slipper Clutch
The MT-09 SP features an Assist and Slipper (A&S) clutch that has specifications selected to best match the new engine for a lighter clutch lever pull and smoother chassis behavior during downshifts.

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Optimized Transmission Ratios
The transmission ratios have been optimized, with the gear ratios for 1st and 2nd gear slightly higher than on previous MT-09s (1st gear: from 2.666 to 2.571; 2nd gear: from 2.000 to 1.947). Working in combination with the increased momentum of inertia of the crankshaft and the fuel injection settings, the transmission provides the right balance of a powerful torque feeling and ease of use, from acceleration to stopping.

CHASSIS/SUSPENSION

Lightweight Aluminum Frame
The MT-09 SP's lightweight aluminum frame showcases the MT's signature “agility.” To ensure both straight-line stability and handling performance, the balance of longitudinal, lateral and torsional rigidity have been improved. Most notably, the lateral rigidity has been increased by approximately 50% for even more straight-line stability. The all-new frame is manufactured using the latest in Yamaha’s controlled filling (CF) die casting technology which contributes to the MT-09 SP's light weight

Aluminum Die Cast Subframe
The MT-09 SP employs a controlled filling aluminum die-cast subframe that reduces weight, contributing to the model's signature feeling of agility.

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Lightweight, High-Rigidity Swingarm
The MT-09 SP features a newly developed swingarm that uses a welded box shape of aluminum plate to achieve both high rigidity and is 250g lighter than former MT-09 models. The MT-09 SP's swingarm pivot structure connects to the frame from the outside. Together, with the changes to the chassis' rigidity and thorough engineering of the shapes of parts and components around the seat, this design showcases the MT-09 SP's slim feel while still delivering outstanding straight-line stability at high speeds with greater cornering stability.

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Lightweight Spin Forged Aluminum Wheels
The MT-09 SP employs lightweight wheels. Manufactured using Yamaha-exclusive spinforging technology, these wheels contribute to outstanding handling. With a notable 11% decrease in the momentum of inertia at the rear, these wheels make for a big contribution to the MT-09 SP's agile handling character.

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Braking for Sporty Riding
To support more spirited, sporty riding, the 2021 MT-09's state-of-the-art brake features a radial Nissin master cylinder for the front brake. The piston in the master cylinder moves in a direction parallel to brake lever travel, contributing to a more linear supply of hydraulic pressure for excellent controllability. Following the YZF-R1, the 2021 MT-09 SP is only the second Yamaha model to use this technology that can be controlled with just a fingertip.

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Adjustable Riding Position
The riding position was designed to accommodate riders of varying physiques. The handlebars and footpegs can be adjusted to two different positions, allowing riders to set a position that gives them a secure feeling the moment they get on the bike. The handlebar clamps can be rotated 10mm forward, and the footpeg mounts can be raised 14mm higher as well as 4mm rearward.

Premium KYB and Öhlins Suspension
The MT-09 SP's KYB front suspension can be individually adjusted on each side for compression and rebound damping. Adjustments for high and low speed compression damping can also be made, giving riders more detailed settings to choose from. The 41mm inner tubes' DLC coating provides excellent sliding characteristics and also adds to the exterior's quality appearance. The MT-09 SP's rear shock features a premium Öhlins shock absorber with a remote preload adjuster, completing this class-leading suspension package.

ELECTRONICS

6-Axis IMU
The MT-09 SP features a newly developed 6-axis Inertial Measurement Unit (IMU) that retains the base performance of proven IMU in the YZF-R1 but is 50% smaller and 40% lighter due to a thorough review of the sensor layout. The engine control unit (ECU) that receives and reflects the data from the IMU is equipped with three rider aids: a Traction Control System (TCS), Slide Control System (SCS) and front-wheel LIFt control system (LIF). All three systems work together to help the rider concentrate on riding to better extract the machine's potential. Each of the systems can also be turned on or off and have their levels of intervention adjusted to preference. With this best-in-class electronic control technology, the 2021 MT-09 gives you the ultimate control in varying weather and surface conditions.

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Rider-Supporting Traction Control System
The Traction Control System (TCS) has three modes: Mode 1, Mode 2 and Mode M for manual settings. Each mode integrates the three rider support systems by changing the degree of intervention for the TCS, SCS and LIF all at once. With Mode M, the user can select his/her preferred levels of intervention for the TCS, SCS and LIF individually.

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Lean Angle-Sensitive Traction Control System
The Traction Control System (TCS) detects the difference in speed between the front and rear wheels and helps to efficiently extract drive force from the rear tire during acceleration. The TCS on the MT-09 SP uses this data for the lean angle, estimated by the IMU to adjust the degree of intervention by the TCS. As the lean angle increases, so does the amount of TCS intervention (1 = little intervention; 2 = moderate intervention; 3 = strong intervention).

Lift Control System (LIF)
The LIFt Control System (LIF) smooths the machine's behavior during starts and acceleration. When the IMU predicts front-wheel lift, the system adjusts the engine's output to compensate and assist the rider. On the MT-09 SP, the system settings are focused on providing smooth behavior once the intervention ceases. The LIFt system's intervention is set up to work together with the other rider aids, and with Mode M, the level of intervention can be chosen manually by the rider.

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MotoGP®-Developed Slide Control System (SCS)
The MT-09 SP features the Slide Control System (SCS), just like the one on the acclaimed YZF-R1. When the IMU predicts that a sideward slide is occurring at the rear tire, the SCS responds by adjusting the power output to help the rider focus on riding. The degree of intervention is pre-set for the TCS with Mode 1 and Mode 2, but Mode M allows for the level of intervention to be selected or for the system to be turned off.

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Brake Control System with ABS
With the Brake Control (BC) system, data for the front and rear wheel speed as well as data from the IMU is compiled and calculated in real-time in the hydraulic unit assembly (including the ABS control unit) to independently control and modulate the front and rear brake pressure. The rider can select between two intervention modes: BC1 and BC2. BC1 is a standard ABS-active mode that accommodates hard emergency braking in upright, straight-line braking conditions while BC2 controls the brake pressure in addition to ABS and operates in situations where machine behavior is likely to become unsettled, such as unavoidable panic braking mid-corner.

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Quick Shift System for Clutchless Upshifts and Downshifts
The QSS on the MT-09 SP enhances the sport riding experience by enabling super-fast upshifts for outstanding acceleration. The downshift allows for smoother shifting that stabilizes the chassis - even when cornering - and gives a more controlled feeling when decelerating. When the sensor on the shift rod detects movement in the gearshift pedal, adjustments are made in the engine output according to ECU calculations to instantly cancel out the drive torque of the engaged gear to promote swifter shifting of gears.

2021

MT-09 SP

Ride-by-Ride YCC-T Throttle System with New APSG
The MT-09 SP's Yamaha Chip Controlled Throttle (YCC-T) electronically governs the throttle valves and features the new Accelerator Position Sensor Grip (ASPG) ride-by-wire unit that reduces weight while providing excellent throttle feel at the same time. With the APSG, the degree of throttle opening is detected by a sensor and magnet and reflected with signals to the throttle valve motor. For good operational feel, the APSG is comprised of a spring, slider and gear and produces varying degrees of friction (resistance) to recreate a natural throttle feel during use. The construction of the APSG for the MT-09 SP is the same as the one on the 2020 YZF-R1/R1M but has model-specific settings for the degree of friction and throttle opening.

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3.5-inch Full-Color TFT Instrument Display
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Cruise Control
The MT-09 SP features a cruise control system for easy riding. Cruise control can be set when going at least 31 mph (or 50 kmh) and in 4th gear or higher. After the cruise speed is set, the speed can be increased or decreased in increments of 1 mph (or 2 kmh) with single pushes of the switch or by continuously holding down the switch. Cancel the cruise control by braking or by using the clutch or the throttle. The "Resume" function reengages the system and returns the bike to its previous set speed.

ADDITIONAL FEATURES

Next-Generation Design
2021 represents the 3rd generation of the MT-09. And with the MT-09 SP, the designers sought to better express the major advances made with the machine's performance by visually accentuating the pure power of the bike. The minimalist design concept delivers an exterior with everything but the essentials stripped away to highlight lightness and agility while simulating the rider's senses.

Unique Styling
The MT-09 SP features special colors and graphics, a distinguished seat cover with its stylish, contrasting stitching, a clear-coated silver swingarm and clear-smoked front and rear brake fluid reservoirs that bring out the bike's pure mechanical beauty. Together, these features showcase the MT-09 SP's high quality, exclusive look among the MT lineup while linking the bike to the colorway found only on the YZF-R1M. In addition, the levers, handlebars and drive sprocket are a sleek black to further complement the MT-09 SP's design to give the rider the feeling of being one with the machine.

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Full LED Lighting
A compact designed bifunctional (low and high beam in one) LED headlight with excellent beam spread is featured on the MT-09 SP. The edges of the beam have a softer contrast to be easy on the eyes while emitting a soft and even spread of illumination. Instead of the conventional "mono-focus" type headlight, this bike utilizes a projector design with a built-in internal lens in addition to the thick outer lens. Since the MT-09 SP uses not one but multiple LEDs to produce light, it can project a complex distribution of illumination across a broad field. The position lights use LEDs and light-guides to create an impressive, distinctive new front face design for the MT-09 SP while the turn signals and newly designed LED taillight are LED as well.

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Ready to Accessorize
A rear fender eliminator, fly screen, comfort seat, engine guards and more can all be added to the MT-09 SP to support and enhance the look of the bike.

yamahamotorsports.com
For Accessories, visit **shopyamaha.com**

SPECIFICATIONS:

Engine Type	890cc liquid-cooled, DOHC, inline 3-cylinder; 4 valves per cylinder
Bore x Stroke	78.0mm x 62.1mm
Compression Ratio	11.5:1
Fuel Delivery	Fuel injection with YCC-T
Ignition	TCI: Transistor Controlled Ignition
Transmission	6-speed; multiplate assist and slipper clutch
Final Drive	Chain
Suspension / Front	41mm KYB inverted fork, adjustable preload, high/low speed compression and rebound; 5.1-in travel
Suspension / Rear	Öhlins single shock, adjustable preload, compression and rebound damping; 4.8-in travel
Brakes / Front	Dual 298mm hydraulic disc; ABS
Brakes / Rear	245mm hydraulic disc; ABS
Tires / Front	120/70ZR17M/C
Tires / Rear	180/55ZR17M/C
L x W x H	82.3 in x 31.3 in x 46.9 in
Seat Height	32.5 in
Wheelbase	56.3 in
Rake (Caster Angle)	25.0°
Trail	4.3 in
Maximum Ground Clearance	5.5 in
Fuel Capacity	3.7 gal
Fuel Economy**	49 MPG
Wet Weight***	419 lb
Warranty	1 Year (Limited Factory Warranty)
Color	Raven / Liquid Metal

*** Wet weight includes the vehicle with all standard equipment and all fluids, including oil, coolant (as applicable) and a full tank of fuel. It does not include the weight of options or accessories. Wet weight is useful in making real-world comparisons with other models.