**FLAWS:** shock oil wears out fast, flat top-end power  
**FIXES:** change shock oil frequently, bigger carb, high-flow impeller  

The 85 introduced an engine with a revised top end with plating rather than the old iron sleeve. The bore size was increased to the class limit, and a new rigid exhaust valve system was added.  

Suzuki used a cheap replacement carb, but a Keihin flat slide 28 mm carb gives this bike more over-rev. Because the cooling system is challenged, a Boyesen water pump kit is needed for aggressive riders.

**BEST VALUE MODS**  
Keihin 28-mm carb, Boyesen water pump kit

**SUPERMINI KIT**
The RM85L is the alternative big-wheel model that can be raced in the supermini or 125-cc classes. However, the stock 85 cc is not competitive. Most riders push the displacement to the maximum class limit of 105 cc. Wiseco makes a 100-cc piston kit. The kit installation requires boring, porting, plating, head and valve mods, and crankcase grinding.

**BEST VALUE MODS**  
**ENGINE:** Boyesen magneto cover  
**SUSPENSION:** Emulator valve, fork spring preload  

**ENGINE**
The cylinder bore and the crankshaft bearings wear out quicker than other Japanese dirt bikes. The cylinder uses a steel sleeve that can be bored to accept an oversize piston and rings. Wiseco Pro-Lite forged pistons are much better quality than the original cast Suzuki pistons. The cylinder can only be bored twice; any larger and the liner can't transfer out the heat and the engine will lose power. The cylinder has rough transitions between the liner and the ports. Remove the burrs from the ports and turn down the head 0.010 in. to broaden the powerband. Don't waste a lot of money on porting because the cylinder won't last forever.

**MAGNETO LEAKS**
Replace the magneto cover with one made of aluminum to seal water out from the generating coils, a common cause of ignition failure. Boyesen Engineering sells aluminum magneto covers for RM80s.

**FORKS**
The forks need stiffer springs, but no manufacturer makes springs for the RM80. Most tuners add 10-mm-long aluminum spacers between the fork caps and the springs. Race Tech's
Emulator Valve significantly improves the fork damping. Change the fork oil to 10-weight for Emulator valves and 15-weight for the stock forks.

**1997–2004 SUZUKI RM125**

**FLAWS:** 1997 to 1999: piston and cylinder breakage  
**FIXES:** weld-narrow exhaust port and replace

In 1997, Suzuki made its latest generation of the RM125. With conventional twin-chamber forks and revised frame geometry, the bikes have excellent turning and handling characteristics. The bottom end of the engine is essentially the same as previous models. The cylinder is similar to the design from the early 1990s. By 2000, Suzuki had managed to perfect the cylinder for a wide powerband and great longevity. Most recent models have the new generation of electronic carbs that pump fuel into the venturi during the midrange.

After making slight changes to the connecting rod length and rod ratio, Suzuki finally made a significant design step forward with the 2004 engine. The new engine was inspired by KTM's newfound success as the horsepower king of the 125 class. Suzuki switched to a longer connecting rod, flat-top piston, and triple exhaust port, but with milder port timing than the KTM.

**BEST VALUE MODS**

**ENGINE:** cylinder plating, Wiseco piston  
**SUSPENSION:** revolve shock for more rebound, stiffer fork springs

**CYLINDER MODS**

The new 125s have a redesigned cylinder that is a hybrid, retro design with a new exhaust valve and a 1992 cylinder port design. The extra set of sub-exhaust ports was eliminated because of chronic problems with the plating flaking off between the exhaust ports.

The 1997 and 1998 models have their own flaws. In an effort to get enough exhaust area to compensate for the sub-exhaust ports, the main exhaust ports were widened to 95 percent of the bore's total width. If the piston and ring are not changed often enough, the ring will eventually break and tear up the bore.

The maximum chordal width of the exhaust ports for reliable running is 51.5 mm, measured from widest outer edges of the exhaust ports. That is the same spec as the 2000 cylinders. In the United States, many of the big tuning shops widen the ports too far. Caution: Don't exceed the maximum chordal width spec or the rings could be prone to accelerated wear. If you have a 1997 RM125 cylinder that was modified by a tuner for a wider exhaust port, it's possible to repair the cylinder by welding the corners of the exhaust port, thereby narrowing the port. Max Power and Appec offer this service along with their replating services.

If you want to get more, midrange and top-end power from the 1997 through 1999 cylinders, simply raise the exhaust ports. The highest that you can raise the exhaust ports is 28 mm, measured from the top of the cylinder.

**HEAD MODS**  
When you raise the exhaust port, you have to turn down the sealing surface of the head. In this way, you can compensate the compression ratio in accordance with the change's effective stroke. When you raise the exhaust port to 28 mm, turn down the head 0.6 mm.

**CLUTCH**

Never use aftermarket clutch plates and springs in this bike. I tested two popular kits and the springs were either too stiff or the plate thickness was incorrect. When the stock basket wears out, replace it with a Hinson Racing clutch.

**FORKS**

Set the oil level to 210 mm and install stiffer fork springs if your weight is a factor (over 160 pounds in riding gear).

**SHOCK**

The stock shock has too much low-speed rebound (LSR). To compensate, set the race sag to 95 mm and the rebound adjuster to six clicks out. If you have to switch to a stiffer spring because of your weight, you'll definitely have to get the shock revalved for more rebound damping. Consider frequent oil changes—every 20 riding hours. The bushings are very soft on these shocks and wear quickly.

**1990–1996 SUZUKI RM125**

**FLAWS:** nylon reeds crack, air box leaks  
**FIXES:** carbon-fiber reeds, seal the air box

The RM125 went through some big changes in the early 1990s. The 1989 to 1992 models are similar in that they have the same generation engine and chassis. The 1993 model features the redesigned frame, inspired by the testing done by Donnie Schmit and Stefan Lieser when they won world championships in the early 1990s. The 1993 model handles better through whoops sections, and when the twin chamber forks were introduced in 1994, it made the Suzuki the best-handling 125. The 1993 cylinder features new sub-exhaust ports. The port timing on these new cylinders has too much transfer port time-area, so the powerband is flat in the low end and hits hard when the exhaust valves open at 8,000 rpm.

**BEST VALUE MODS**

**ENGINE:** carbon-fiber reeds, cylinder mods  
**SUSPENSION:** shock revalving
RM125s have drain plugs that are easily damaged from casing the bike into whoops and jumps. By installing a glide plate, you’ll protect the drain plug and slide with less resistance when casing obstacles.

SUSPENSION
The suspension on the RM8 is very good. The rear shock, however, needs more rebound damping. This can be improved with revalving or with an aftermarket piston and valve kit such as one from Pro-Action.

IGNITION
The new digital ignition system on the 1994 to 1996 models will fit on the 1991 to 1993 models. It must be used as a set (stator and ignition box). The old ignition style suffers from high-end misfiring over 12,000 rpm, which builds heat and eventually overheats the ignition box.

INTAKE SYSTEM
The old-style nylon reeds are prone to cracking and need to be checked. The new carbon-fiber reeds help the top-end over-rev. Aftermarket carbon-fiber reeds are good replacements for the 1990 to 1993 reed valves. The air box doesn’t seal very well at the junction of the boot and the box. Reseal this junction with weather stripping adhesive.

CYLINDER AND HEAD MODS
The engine has a similar powerband to the other 125s. It can be modified for more low end with a hard midevage burst from 3,000 to 9,800 rpm or for a strong-pulling upper midevage with more peak horsepower from 8,800 to 12,500 rpm. The first powerband is ideally suited for supercross, intermediate motocross, or enduro racing. The second powerband is for top experts only.

CLUTCH PROBLEMS WITH 1993-1996 RM125
Heavy clutch action with a low trans oil level will make the clutch cover wear out at the bushing where the actuating lever seats. This allows the actuating lever to wobble, causing poor clutch action. The symptoms of a worn cover are dragging, slipping, and difficulties adjusting the lever play. It’s impossible to fix a needle bearing to the cover because there isn’t enough cover material to house the bearing. Replace the cover when it wears out.

LOW/MID POWERBAND
The cylinder base must be turned down 0.032 in. or 0.8 mm on a lathe to reduce the exhaust port duration. Then the transfer ports must be raised to 42 mm from the top of the cylinder. The rear transfer ports should be redirected to oppose each other rather than hooking toward the exhaust port.

Hooked ports waste fuel by short-circuiting the fuel out the exhaust port before the engine comes on the pipe. Because the cylinder base was turned down, the cylinder head’s squish band must be remachined so the piston doesn’t contact the head. The distance from the gasket surface to the squish band should be 1.2 mm and the squish band angle (10 degrees) should be matched. Boyesen reeds or a RAD valve will match the intake system to the new powerband. For a final modification, set the power valve spring tension to one turn clockwise from zero.

TOP-END POWERBAND
The main exhaust port must be raised to 28 mm from the top of the cylinder.

The two sub-exhaust ports must be widened 1 mm each. Turn down the cylinder head 0.5 mm at the gasket surface. Install a 38-mm PJ Keihin carb and start with these jets: 60 slow jet, 5 slide, 1469 needle-middle position, and 175 main jet. The Mexico GP pipe makes 2 horsepower more than the next-best pipe. Mexico pipes are made in Italy. All these mods will help the RM produce an honest 36 horsepower at the rear wheel. That is about 6 horsepower more than original.

ATEV
The 1995 RM125 has a new-generation exhaust valve system that features bypass ports that vent gas pressure waves out the exhaust valve chamber. I recommend installing an automotive PCV check valve to prevent water from being drawn up the vent hose. The vent hose is mounted to the upper left side of
the cylinder. Insert the PCV valve halfway up the vent hose to prevent any debris from being drawn into the cylinder. The new exhaust valves will interchange with older models but they don't offer any advantage.

A NOTE ON THE 1996 RM125
The 1996 model uses the bypass ports in the exhaust valves just like the 1995 model. The main difference is in the shape of the exhaust valves. In an effort to improve the low-end power of the RM125 cylinder, the new exhaust valves are oval in shape and have a flat edge that makes them seal closer to the piston. This lengthens the effective stroke and gives the engine better low to midrange power with a slight sacrifice of top-end power. The cylinder and head mods listed for the 1995 and earlier models work well on the 1996 model too. However, it isn't possible to interchange the 1996 and later cylinders with the 1995 and earlier models.

1985–1989 SUZUKI RM125
FLAWS: chronic piston seizures, ATEV breaks, linkage seizures
FIXES: thick sleeve and Wiseco piston, 1990 valves in 1989 RM125s, grease bearings

These bikes are plagued with all sorts of problems ranging from chronic piston seizures to broken exhaust valves and corroded swingarm and linkage bearings.

BEST VALUE MODS
ENGINE: Wiseco piston and cylinder sleeve
SUSPENSION: grease linkage frequently

TOP END
The cylinders can't be bored past 0.5 mm or 0.020 in.; otherwise, the cylinder sleeve becomes too thin and can't transfer out the heat properly. You must have the cylinder sleeved if you need to bore beyond 0.5 mm. The aftermarket sleeves are much thicker than the one in the stock cylinder. Aftermarket sleeves can be overbored as much as 2 mm when using Wiseco pistons. RM125s suffer from exhaust valve problems. The old-style drum valves become carbon-seized, so they must be cleaned often. The 1989 and 1990 models crack at the stems, causing them to fall into the cylinder bore and crash into the piston.

CRANKSHAFT SEAL
The left-side crankcase seals are prone to failure and should be replaced every 10 engine running hours.

SWINGARM
The swingarm bearings and linkage are prone to corrosion, so grease them often.

2001–2004 SUZUKI RM250
FLAWS: top-end failures from intake port design, weak clutch components
FIXES: TIG-weld intake bridges. Hinson Pro clutch kit

The 2000–2002 models suffer from top-end failures traced to the design of the intake port, which uses two vertical bridges. The bridges are too narrow with a tight radius at the top. The bridges tend to crack and scour the piston and eventually crack off the intake skirt. The only way to fix the problem is to strip the plating off the cylinder, TIG-weld the bridges wider with large corner radii, and replace the cylinder. The 2003-and-later cylinders use a design like a YZ. It has a large, smooth oval intake port that works well. The 2003 cylinder needs a higher exhaust port for more top end. The 2004 cylinder was refined and the RM250 was heralded as the best engine in class in the dirt bike press.

REED VALVE
A Boyesen RAD valve works much better than stock and gives a boost to top-end power.

CLUTCH
The stock clutch components are weak. The basket material is soft and grooves fast, the hub gets notched from the steel plates, and the pressure plate isn't very stiff. Hinson Racing makes a Pro kit that includes the basket, hub, and pressure plate. These parts offer better clutch feel and improve reliability.

1996–2000 SUZUKI RM250
FLAWS: weak suspension linkage, exhaust valve system problems
FIXES: monitor linkage for cracks and lubrication, polish exhaust valves

In 1996, the RM250 was Motocross Action's Bike of the Year. It was the most improved bike of its class, but every
Suzuki replaced the original linkage welded onto the frames in the wrong position. Soon after the bikes were released, the shock linkage was recalled. Suzuki replaced the original linkage with a new-and-improved unit. The new unit still requires frequent maintenance and should be inspected for cracks near the pivot holes. The 1996 engine is a close copy of the Honda CR250 engine, with a 66.4x72 bore and stroke and a cylinder reed valve. Some riders complain that the model doesn't have enough top-end power, but woods riders favor the excellent low-end to midrange power.

BEST VALUE MODS

ENGINE: cylinder porting
SUSPENSION: shock valving

EXHAUST VALVE SYSTEM

Although Suzuki copied Honda's cylinder design, it couldn't infringe on the patents of Honda's HPP system. The one thing Suzuki couldn't copy was Honda's excellent exhaust valve system. The 1996, and 1998 to 2000 center exhaust valve is made of aluminum that causes a shock wave in the exhaust port when the valve is in the high-rpm position. The design is also prone to carbon buildup and erratic operation. The center valve doesn't fully recede into the roof of the port, leaving the flat edge of the valve exposed to the exhaust stream. It is possible to radius the bottom edge of the valve to improve the top-end power but with a sacrifice of low-end power. Another common problem is carbon buildup on the actuating rod that links the side drum valves to the center valve. The rod is exposed to the exhaust stream on each side of the center valve.

This exhaust valve system requires frequent cleaning. You can polish the sharp edges of the valves to reduce the friction, but take care not to remove the brown hard-anodized coating that protects the valves. Over time, the center valve will become so worn at opposing corners that it will be prone to jamming in one position. Suzuki designed a stiff return spring for the new valve system. The spring, located behind the indexing knob on the right side of the cylinder, should be set to one turn clockwise past zero tension.

The articulated steel exhaust valve of the 1997 RM is a better design than the single-stage aluminum valve. Unfortunately, Suzuki only used it for one model year. The steel valve has two stages, like the RMX design, intended to give the engine a smoother powerband. But there are some simple mods to perform before this system works as well as the system on the CR. For the biggest improvement in top-end power, grind the minor center valve smooth so it conforms to the exhaust port roof. The stock design allows the valve to protrude out into the airstream and impede the outflow of the exhaust. It's easy to polish down the sharp edge with a round file. Remove the cylinder, turn it upside down on a bench top, and open the exhaust valves to the max. File down the portion of the minor exhaust valve that extends into the port. Take care not to let the file touch the plated cylinder bore; that could cause the plating to chip and damage the bore. After you've finished, disassemble the exhaust valve system and clean out all the metal particles. The exhaust valve spring tension is critical. Set the minor valve spring tension (upper knob) to 3/4-turn clockwise. Set the major valve spring tension to 1/2-turn clockwise. If the spring tension is too tight, the valve's opening timing will be retarded, causing a detonation noise while accelerating through the midrange. Sometimes, excess spring tension can prevent the valves from opening, depending on the amount of carbon buildup on the valves.

CYLINDER

The cylinder porting is very good, a close copy of the CR. However, if you want more top-end power, raise the sub-exhaust ports to 39 mm, measured from the top of the cylinder. The 1998 model has a very small main exhaust port. It can be widened and raised to the same height as the sub-exhaust ports. On the 1999 and 2000 models, Suzuki copied the KX250 cylinder design. Unfortunately, the bridges that support the intake port tend to cause piston seizures. You can fix that problem by gusseting the bridges to increase rigidity and prevent them from flexing into the piston. However, the cylinder needs to be replaced in order to repair the weak intake bridges. The modified height of the transfer ports should be 58 mm, measured from the top of the cylinder.

HEAD MODS

In 1998, Suzuki switched from a domed-shaped piston to a flat top design. The flat top design works well. Wiseco makes a flat-top piston (part number 705PS) for the 1996 to 2000 RM250. When this piston is used on domed heads, it requires that the head is modified in the following manner: turn
down 2.5 mm from the sealing surface; set the tool angle to 4 degrees; set the squish recess depth to 1 mm; and cut the squish angle until the tool blends into the chamber bowl.

**CARBURETOR**

Riders at high altitude or in warm climates complain of rough running when accelerating out of turns. The reason is that the carb's slide curway is too rich. Modify the curway by filing and polishing for a finished depth of 7 mm. Take care when performing this mod because a rough edge can cause the throttle to stick open.

**CLUTCH**

Most pros switch to a Hinson Racing clutch basket and pressure plate, combined with KX250 plates and springs (Kawasaki fiber plates: 13088-1105; metal plates: 13089-1066; springs: 92144-1351). This setup resists lurching and slippage better than the original clutch parts.

**SUSPENSION**

Forks

Set the oil height to 210 mm and adjust the clickers for conditions.

Shock

Set the sag to 95 mm, and set the rebound adjuster to six clicks out.

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**1993–1995 SUZUKI RM250**

**FLAWS:** rich carb jetting, front end dives, clutch plates break

**FIXES:** lean jetting, revalve rear shock and shorten, install Barnett or 1996 KX250 clutch plates and FMF aftermarket pressure plate

In 1993, Suzuki changed the crankcases and added more flywheel weight in an effort to reduce the hard-hitting midrange. The cylinder hasn't changed since 1992. This cylinder has such large transfer ports that it can't pull the extra flywheel weight, which makes the bike seem as if it has no low-end power. In 1995, Suzuki redesigned the exhaust valve system to use bypass ports in an effort to regain low-end power. In 1996, Suzuki changed the entire engine design to one that was very close to the current Honda CR250. The bore and stroke was changed to 66.4x72 mm. The cylinder was changed to the old reed valve in the cylinder design used in 1988. A new exhaust valve system was employed, but it is prone to carbon seizing. Also, this exhaust valve design hinders the top-end power potential of the model. Here are some things you can do to tune the RM.

**BEST VALUE MODS**

**ENGINE:** aftermarket silencer, cylinder porting

**SUSPENSION:** revalve and shorten shock, stiffer fork springs

**INTAKE SYSTEM**

Because of the angle of the stock reed valve, the reed petals tend to flutter at about 7000 rpm. Replacing the petals with those made of carbon fiber will help. The carb jetting is a bit too rich. I've had the best luck with a Honda CR needle R1616N with the clip in the middle position and a 185 main jet. The needle is leaner than stock and the main jet is richer. Combined with an NGK BP7EV spark plug, your RM will run smoother and crispier through the rev range. The stock air box is prone to water seepage. The air box should be sealed at the seams with duct tape.

**SILENCER**

The original Suzuki silencer is poorly designed. Changing to an aftermarket silencer will dramatically improve the power over the full rev range.

**EXHAUST VALVE PRECAUTIONS**

The two most common mistakes made with Suzuki's ATEV exhaust valve system are: turning the spring preload knob too far clockwise, which puts too much tension on the valves and then they won't open at all (maximum preload is 1.5 turns clockwise from zero preload); and installing the right-side shaft spring in a crisscross position (that spring is designed so the spring tabs are parallel to each other).

**1995 EXHAUST VALVE SYSTEM**

This system features bypass holes drilled in the exhaust valves. The exhaust gases are allowed to enter the chamber cover and provide resonance. However, there is a serious design flaw—this chamber is vented to the atmosphere, allowing hot exhaust gases to escape out the black rubber vent hose fastened to the left side of the cylinder. The pressure waves present in the exhaust gases travel to the
TUNING TIPS FOR SUZUKI DIRT BIKES

The RMZ250 is a popular bike supported by hundreds of aftermarket products to improve performance and reliability.

The Synergy carbon-fiber supermoto bike costs $20,000!

End of the tube and reflect back into the cylinder, drawing cold air and debris into the cylinder. It's best to block the vent tube with a bolt tapped into the cylinder casting. There is a tube on the right side of the cylinder to vent excess transmission oil gases and water condensation. I recommend installing an automotive PCV valve. Make sure the PCV valve has hose ends of 1/4 in. Connect the PCV valve in the middle of the left-side vent hose. The PCV valve is a one-way valve—position the PCV valve so it flows outward. This will prevent debris from being drawn up the hose and into the engine.

TRANS OIL FILLING
Suzukis tend to lose transmission oil from the countershaft seal, or it leaks into the crankcases through the right-side crankshaft seal and combusts in the engine. You can tell when the seal is blown because the exhaust pipe billows out white smoke, spark plugs foul, and oil drips from the pipe. Install 1,000 cc of oil in the transmission and change it every 10 engine running hours.

REAR FRAME SUPPORT
The support bar that bridges the rear frame tubes is vulnerable to being dented by the seat base when a rider lands hard from a jump. Reinforce the frame support bar by welding a piece of steel flat stock on top of the existing support.

REAR SUSPENSION
The rear shock has too much travel, which causes the weight bias to transfer forward. The common solution employed by suspension tuners is to shorten the shock travel. Insert shims (8 mm in total thickness) between the shock seal assembly and the bottoming plate to shorten the shock travel. Of course, the shock must be disassembled to do this modification and you should entrust the work to a skilled suspension tuner.

GEARING
Change the rear sprocket to a 50-tooth. Check the sprocket bolts frequently because they are prone to vibrating loose.

1990–1992 SUZUKI RM250
FLAWS: clutch problems, rich jetting, loose primary gear bolt
FIXES: replace needle bearing, leaner slide, replace bolt

These were fairly reliable bikes in their time. They have good suspension components that can be greatly improved with revalving. The forks need stiffer springs, and the compression valving must be softened. The rear shock needs more rebound damping, but that has always been a characteristic problem with Suzukis. The engines had some chronic problems such as clutch failures, leaky seals, and piston failures. Suzuki has redesigned these OEM parts for better reliability.
BEST VALUE MODS

ENGINE: install a 4.5 slide in the carb. Boyesen RAD valve

SUSPENSION: soften fork compression, install 0.41-kilogram fork springs

CARB JETTING
The carb jetting is too rich. I recommend using a 40 pilot jet, 4.5 slide, position three on the needle, and a 320 main jet. Install an NGK BP7ES spark plug or the equivalent heat range in another brand of plug.

SILENCER MODS
Shorten the silencer 50 mm to improve the power throughout the rev range. This is easy to do on RMs because they use a straight silencer. Mark 50 mm from the end of the silencer body (not the end cap). With the silencer assembled, use a hacksaw to cut the silencer. Then, grind off the rivets from the end cap. Pack the silencer with new packing material (Silent Sport packing), and put the end cap on the body. Mark the holes for the rivets, and drill three new rivet holes in the silencer body. Then, install new rivets.

CHRONIC CLUTCH PROBLEMS
If your RM has chronic problems with breaking clutch plates, the problem might be that the center bushing and needle bearing is worn. This causes the clutch basket to wobble and put strain on the steel plates. Barnett clutch kits have wider tabs on the fiber plates and reduce the gouging that occurs in the fingers of the clutch basket.

CYLINDER AND HEAD MODS
The main difference between the early- and late-model RM250 cylinders is the size of the exhaust port outlet, which is larger on the early models. Suzuki wanted to boost the midrange torque of the later models to reduce the size of the port, thereby boosting the exhaust gas velocity. This mod is nearly impossible to do on the early-model cylinders. However, turning down the cylinder base 1 mm will improve power throughout the rev range. The exhaust and transfer ports have the same dimensions as the late-model cylin-
ders, so modify the ports as listed in the 1993 to 1995 RM recommendations.

LOOSE PRIMARY BOLTS
The bolt that retains the primary gear on the crankshaft tends to come loose. If the bolt ever comes loose, replace it with one from a 1995 model; apply a thread-locking agent to the bolt, and torque it to factory specs.

REED VALVE
A Boyesen RAD valve improves the low to midrange power of the RM250 and is one bolt-on item that is really worth the money.

1985-1989 SUZUKI RM250

FLAWS: cylinder plating chips, ATEV spring fails, bushings wear

FIXES: electroplate cylinder, replace spring, service bushings

During the late 1980s, the RM250 was transformed from a wide, top-heavy trail bike to a sleek racer that carved a right line. The 1987 and 1988 models were very similar and represented a major design change over the 1985 and 1986 models. Dirt Rider magazine rated the 1987 RM250 as the best bike of the class. These bikes have conventional cartridge forks and a modern, rapped-shim shock-valve design. If you are currently riding a 1987 or 1988 RM250, your bike may have some of these symptoms: front forks rebound too quickly, exhaust smoke is excessive, powerband is flat, and spark plugs foul easily.

The 1989 and 1990 models are narrow bikes with low centers of gravity. They featured the original inverted cartridge forks, a case-reed-valve engine, and the TMX Mikuni carb. These models have a hard-hitting powerband, and the suspension works well for aggressive riders. Characteristic problems include: clutch plate breakage, the transmission pops out of second and third gear, spark plug fouling at low speeds, and rear shock kicking.

BEST VALUE MODS

ENGINE: cylinder plating

SUSPENSION: Braking oversize disc
If the cam lobes look oddly uneven when set to the TDC mark of the crankshaft, the cam may have slipped on the sprocket hub. The cams need to be replaced.

Fastway adjustable foot pegs vary the offset forward, backward, up, and down.

can be repaired with nickel-silicon-carbide plating from companies such as US Chrome.

EXHAUST VALVE SYSTEM
The exhaust valves tend to accumulate thick oil deposits that eventually lock the valves in the closed position. When this happens, the engine runs flat at high rpm. Remove the cylinder and clean the valves with oven cleaner, detergent, and water. Manually operate the exhaust valve control lever and make sure the valves move with the lever. There is a spring on the lever, so it can move even if the valves are seized. If the exhaust valve spring tensioner (located on the upper left corner of the cylinder) is turned too far clockwise, the valves will be sprung in the closed position. If your RM has been overbored and has an aftermarket steel sleeve installed in the cylinder, the exhaust valves must be filed for adequate clearance.

LOOSE PRIMARY BOLTS
The bolt that holds the gear on the right side of the crankshaft tends to vibrate loose. When it backs off the threads, it prevents the exhaust valve governor control from operating the exhaust valves. The best fix is to remove the bolt and clean the bolt and crankshaft threads. Then apply a thread-locking agent such as red Loctite, and torque the bolt to factory specs.

EXCESSIVE SPARK PLUG FOULING
If your RM pumps out exhaust smoke like mosquito abatement trucks and fouls spark plugs, the right-side crankshaft seal is probably blown. This is a common problem that is cheap and easy to fix. The seal costs about $10. The right-side engine cover and clutch must be removed to access the primary gear.

The seal is under the primary gear. If you do not have a clutch-holding tool or access to pneumatic impact wrenches, bring your bike to a mechanic. This is a simple mechanical procedure, but it is dependent on the right tools.

CLUTCH PLATE BREAKAGE
If your RM breaks clutch plates periodically, the bushing and needle bearing for the clutch basket may be worn, allowing for excessive axial movement of the clutch. The bushing and bearing should be replaced every two riding seasons. Another cause of clutch plate breakage is a clutch basket with deep groove marks from the fiber plates. When the clutch is disengaged, the plates just stick in the grooves, causing the clutch action to be "grabby." Sometimes, you can fix the problem by filing down the edges of the grooves in the clutch basket. In most cases, you should replace the worn clutch basket as a set with a new bushing and bearing.

MISSED SHIFTS
The 1989 to 1992 RM250s sometimes develop shifting problems from downshifting too often with too great of an engine load. Worn or bent shift forks cause the problem. The shift forks should be replaced every time the lower end of the engine is rebuilt or every two riding seasons.

SUSPENSION REBOUNDS TOO QUICKLY
The forks and the shock can slowly develop too fast of rebound damping for the same reason: the bushings are worn out. If the forks make a clanking sound on the upstroke or cause your forearms to pump up severely, the bushings on the piston rod are so worn that the oil bypasses the piston, thereby reducing the damping effect. The piston rod seal band and bushing are only available with the repair service from companies such as Pro-Action, White Bros., Racc-Tech, and Scout's.

BIGGER BRAKES
Oversize brake discs can give a boost in braking power. The front end especially
1989-1999 SUZUKI RMX250

Pro-Circuit makes aftermarket high capacity radiators for RMX and KXF250s.

benefits from this modification. A company called Braking makes oversize disc and caliper bracket kits for the front end of the 1989 to 1995 RMs.

MIKUNI CARBURETOR UPDATE
The 1985 to 1988 RM250s have the Mikuni TM carb. Later models have TMX carbs. These carburetors do not have an idle adjustment. If you are trail riding and would like the convenience of a bike that idles, you need a Mikuni TMS carb, available from White Bros. If your RM bogs when landing from big jumps, add a Boyesen Super Bowl and T-vent kit.

1989-1999 SUZUKI RMX250

ENGINE: Head mod, Comet gaskets, FMF Fat Boy pipe

SUSPENSION: steering damper

TOP END
The RMX cylinder needs a wider exhaust port and smaller transfer ports. The compression ratio is very low. There is a simple solution: Advance the port timing with a thicker base gasket (1 mm or 0.039 in.) and a thinner head gasket (0.25 mm or 0.010 in.). Comet sells these gaskets individually. If you want to have the cylinder and head machined, widen the exhaust ports (2 mm or 0.080 in.) on each outer edge. The rear transfers can be epoxied in the back corners. The head can be turned down (0.75 mm or 0.030 in.). These modifications are for a stock base gasket and a 1989 RM250 head gasket or the Comet equivalent. The exhaust valve system on the RMX uses a dual-stage valve design. It's great for smooth power delivery but requires frequent cleaning. There are two long coil springs that exert tension on the secondary valves. Those springs get clogged with carbon. Clean those springs well when servicing the exhaust valve system.

CARBURETOR
A 39.5-mm Keihin PWK is the best-performing carb for the RMX. It has an idle circuit that makes it more controllable at low throttle openings, and the throttle response is smoother.

PIGE
HMF Fatty or Gnarly pipe and silencer.

KICK STARTER
The kick starter knuckle joint tends to wear prematurely, allowing the kick starter lever to flop around. Unfortunately, there is no aftermarket replacement part. You have to keep the knuckle joint clean and oiled with chain lube.

BRAKES
I recommend a Braking oversize disc for the front end. Braking discs are laser cut from stainless steel and offer better longevity and stopping power than OEM discs. Moose Off-Road hex-head brake pins are more durable than the OEM pins, and they are easier to remove.

CHAIN GUIDE MODS
The chain guide is mounted to the swingarm with straight tabs. There is no support to prevent the tabs from bending inward and guiding the chain off-center. Butt-weld triangular tabs on the chain guide tabs and the swingarm. Aluminum covers for the guide aren't really effective until the mounting tabs are improved.