

TESTS: Yamaha XV920J Virago vs. XV920RJ, Suzuki RM250Z, Yamaha 550 Seca, IT250



Exclusive Coverage

Kawasaki's KZ750 Turbo

\$1.75

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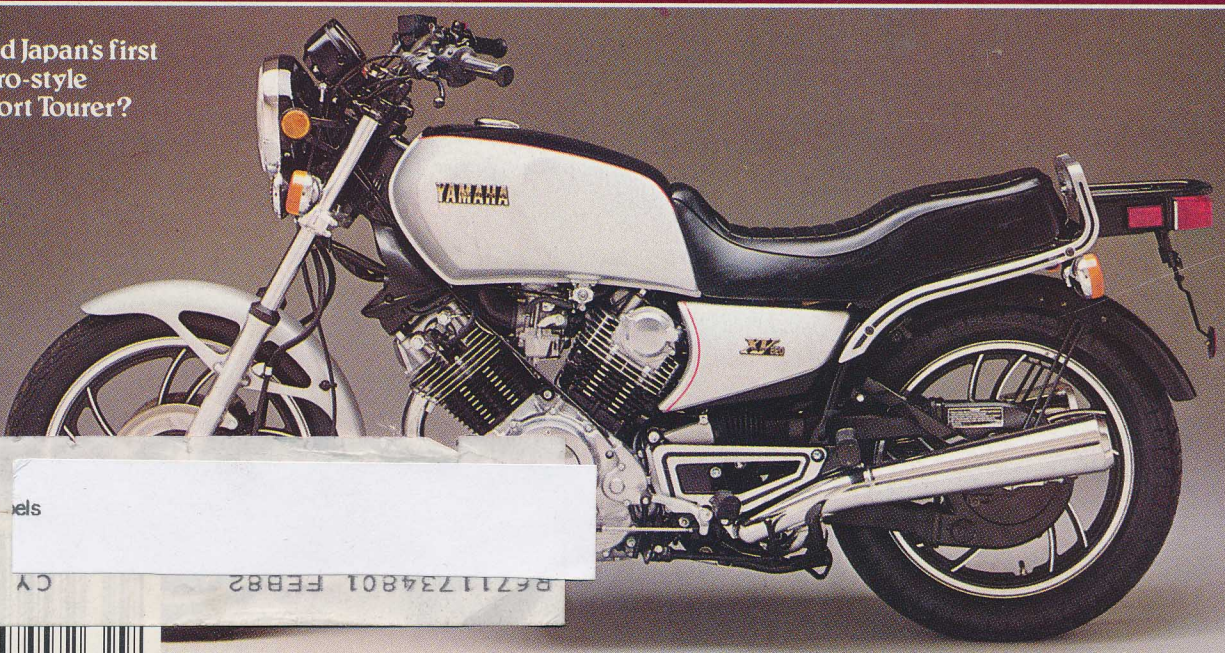
CYCLE GUIDE

STREET CRUISER VS. SPORTBIKE

Who really wins the confrontation between the ultimate American-style Boulevard Bomber



And Japan's first Euro-style Sport Tourer?



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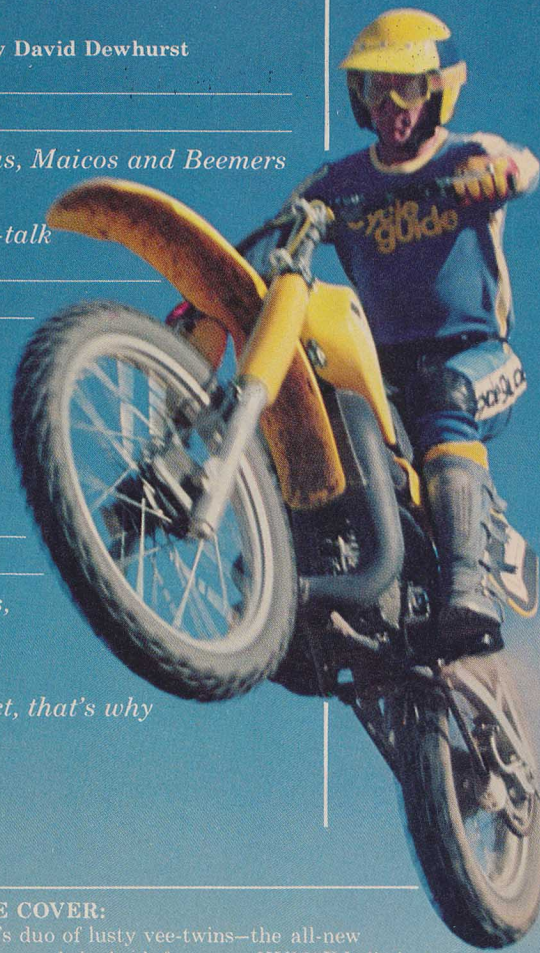
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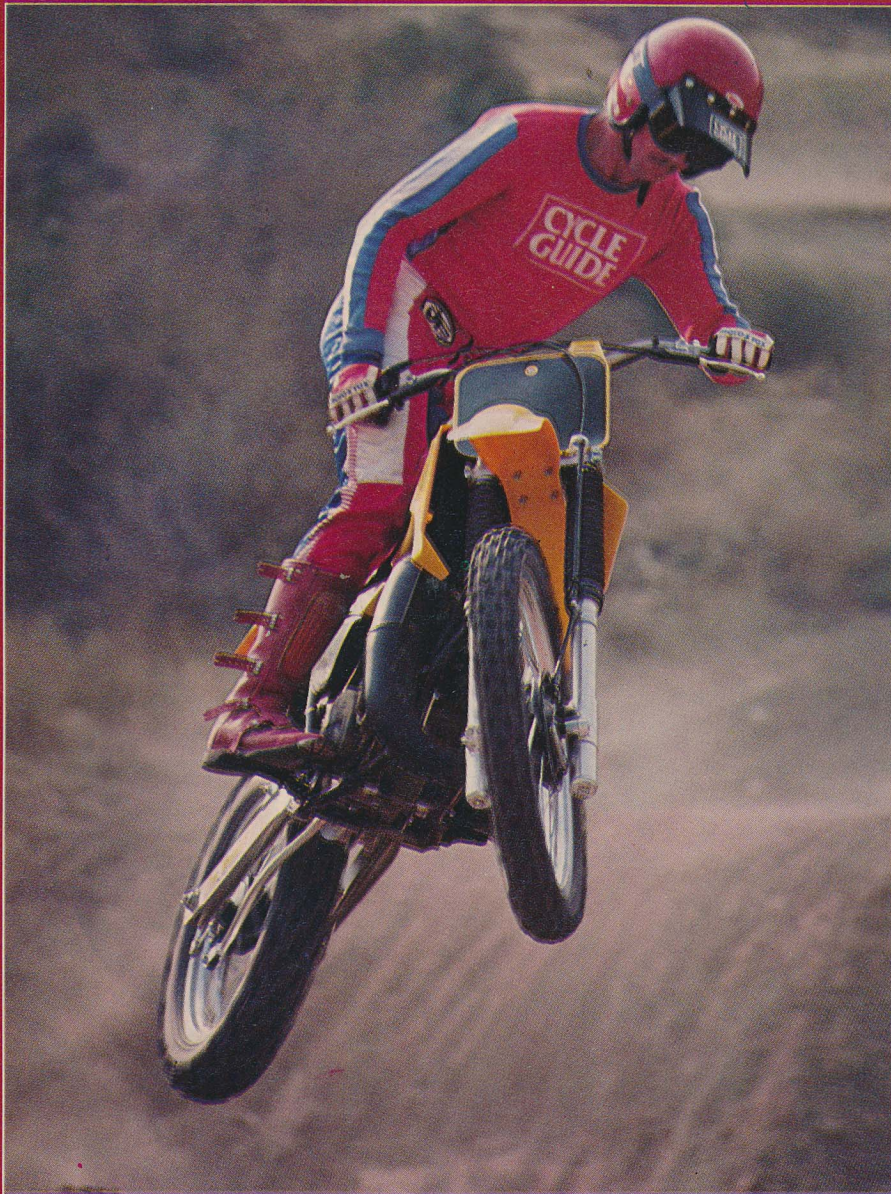
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ON THE COVER:

Yamaha's duo of lusty vee-twins—the all-new 920 Virago and the back-for-more XV920RJ—lie in repose before the magic picture box of Chris Eastman.

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TRACK TEST:

Suzuki RM250Z

Next year's factory bike?

BY RON LAWSON

For just a moment, allow yourself to indulge in the most common of moto-fantasies. Picture yourself pulling up to the start line at a local motocross with Kent Howerton's factory racebike. There you sit with the



ultimate in motocross technology, ready to take on anything. What if nobody notices, or even cares?

That is exactly what would happen. It's true that Howerton's bike proved to be the hottest thing on the track during the 1981 Nationals, but it just isn't *trick-looking* enough to attract attention next to the exotic production iron that 1982 will be offering. And trick looks are going to be the key to sales in the liquid-cooled, power-valved, disc-braked year to come. Even if Suzuki were to perfectly duplicate Howerton's machine right down to its unpainted pipe and sand-cast cases, then offer it for sale at a reasonable price, it would probably be a market-ing disaster.

That's why it shouldn't be a surprise that Suzuki's '82 production machine looks nothing like the factory bike. They've made it even *tricker*. Its liquid-cooled barrel alone is enough to catapult the RM from the world of average-looking bikes (which includes even Howerton's bike) into the realm of the ultratrick. It was a move made necessary by the need to attract attention in a market where performance is only half the equation for sales. Suzuki didn't want to find itself in the same position occupied by Kawasaki last year when the KX125 demonstrated, through the absence of liquid-cooling, the low-sales consequences of not being *trick-looking* enough.

Suzuki knew that Honda would

have an improved version of its 250 waterpumper for '82 and that Yamaha was planning to join the liquid-cooled corps as well. It was apparent that Suzuki would have to fight water with water. So the new Suzuki has been packaged and marked special delivery into the hands of the factory-hardware-craving crowds that line the MX tracks of America. But now, after years of being trained into believing that a factory bike is the ultimate in *trick*, the moto crowds are confronted by an RM250Z that's even *tricker* than the works bikes. And that's enough to make even the racetrack crazy-crossers step back and wonder. When it comes to winning motocross, are *trick* and *quick* always the same thing?

RM250Z: Tech Inspection

Engine:

Top End: The RM250Z is powered by a totally redesigned, liquid-cooled engine. Suzuki now uses an oversquare bore-and-stroke configuration, changed from last year's 67 x 70mm layout to 70 x 64mm. Despite liquid-cooling, tolerances between the new cylinder and piston are unchanged from last year's air-cooled model, but a lower operating temperature allows the engine to run an NGK B8EGV plug (one step hotter than last year's). The RMZ also uses leaner jetting, and while it uses all the regular Mikuni metering pieces, the new 38mm carburetor has a flat-sided rectangular slide. Suzuki claims improved flow and better mid-and low-range response from the new design. Fuel is drawn from the carb through an unchanged eight-fiber-petal reed valve and then by way of a bridged intake window in the cylinder wall and a separate passage leading directly into the crankcase. Six transfers take the mixture above the piston and its single Keystone ring. In the hemispherical combustion chamber, the gas is compressed at a ratio of 8.4:1 (0.3 higher than last year's). For the first time on an RM250, burnt gases exit through a centrally located exhaust port. The more-symmetrical position of this port in the otherwise unchanged barrel layout is claimed to increase power.

Bottom End: A gear on the right-hand end of the full-circle crank drives a water pump at a ratio of 1.89:1. The pump's seven-blade impeller, which is slightly larger than that used on the RM125, forces 1000cc of coolant through a twin-radiator system pressurized to 15.6 psi. New crankcases still feature a combined swingarm pivot/engine mount, but now only a single-bolt front engine mount is used.

Drivetrain:

Primary Drive: As with previous models, the Z-model uses straight-cut primary drive gears, but gear width is increased from 7.5mm to 8.5mm. The clutch retains its four driven plates and five drive plates.

Gearbox: Second, third and fourth gears have been strengthened by adding a half-millimeter to their width. The only ratios that have changed are second and fifth. Second gear ratio drops from last year's 1.750:1 to 1.687:1, while fifth is increased from 0.913:1 to 0.954:1.

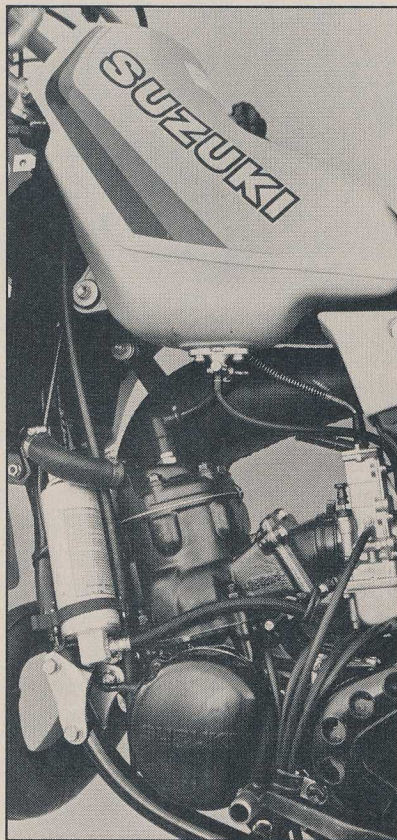
Final Drive: The X-model's 14-tooth countershaft sprocket

is unchanged, but the rear sprocket is reduced by one tooth to 49 teeth.

Suspension:

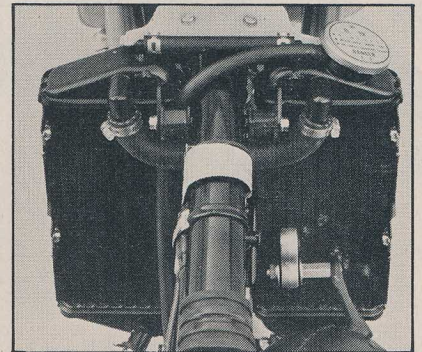
Front: Stanchion tube diameter is unchanged at 38mm, but wall thickness has been increased for greater rigidity. The aluminum sliders have been machined down in non-stressed areas to reduce weight. Damping and spring rates are unchanged.

Rear: The Kayaba shock in Suzuki's Full Floater suspension system still sits vertically in the center of the frame, with its lower mount connected directly to the swingarm. The upper end of the shock connects to the swingarm through a cast aluminum rocker and two vertical struts that produce a rising rate of springing and damping. The shock's compression damping has been upped 25 percent while rebound damping is unchanged. And while the shock's spring rate is unchanged, its free



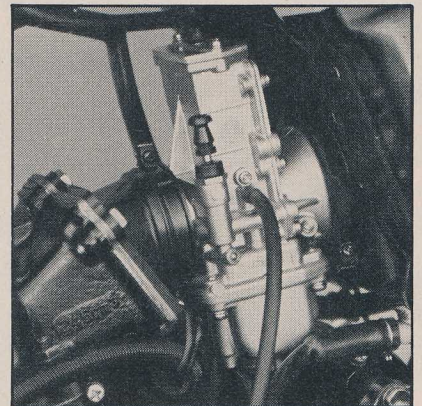
Suzuki adds water

To its lightweight recipe.



Twin Radiators with a single purpose

Keeping cool in hot competition.



A flat-slide Mikuni

Feeding a short-stroke motor.

length goes from 285mm to 290mm and preload increases by 2mm.

Wheels:

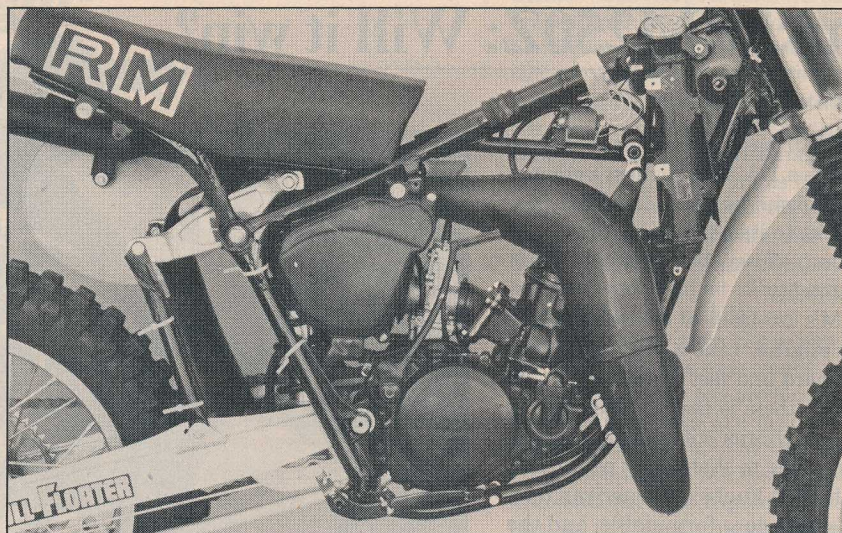
Straight-pull spokes lace Takasago rims to a 150mm front hub and a 130mm rear hub as they did in 1981. Both single-leading shoe brakes are also unchanged. Our test bike came with a 300x21 Dunlop K490 replacing last year's K390 on the front, while the rear keeps its Dunlop 510x18 K390M. Some RMs, however, will come equipped with Bridgestones.

Frame:

The chromoly frame is basically unchanged. Its rake has been reduced fractionally, from last year's 29.5 degrees to 29.3 degrees, but the trail remains at 122mm. This year, the single front downtube divides into two smaller tubes in order to accommodate the pipe from the motor's centrally located exhaust port.

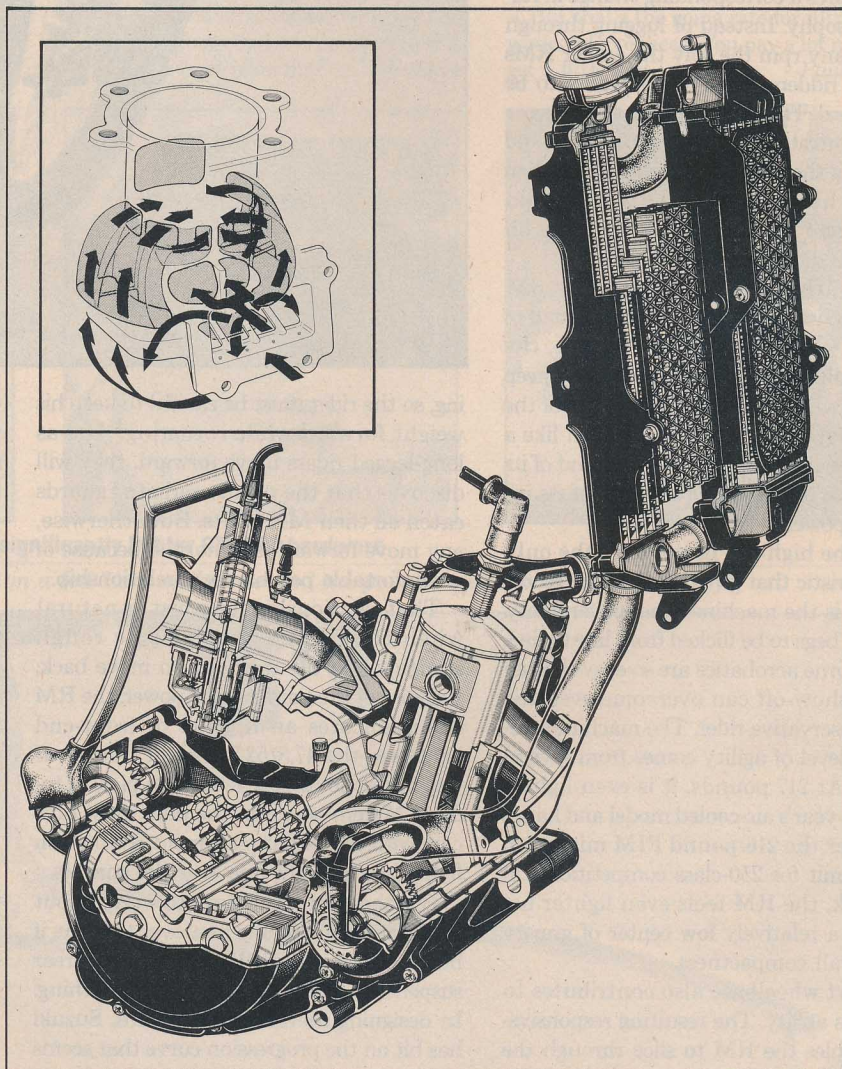
Details:

All of the RM's plastic parts have been changed. The fuel tank was redesigned to clear the dual radiators, but still holds 8.5 liters. Both fenders are more flexible, and a new square front number plate meets AMA specifications. The airbox uses a redesigned drain system, and the outer layers of its dual-stage elements are made of coarser material than last year's. Controls have also received attention, with the shift lever tip now folding and the new throttle assembly routing its cable in-line with the handlebar. Levers use two-piece clamps and the underside of the new dogleg blades are hollowed-out to reduce weight. Weight is also saved by using an all-rubber mount for the small ignition black box. And this year's seat cover and base have been redesigned to resist the tearing that was common on the X-model.



An all-new engine gives Suzuki Z fastest 250cc motocrosser yet

And it's still RMed with one of the best rear suspensions in the business.



The RM's liquid flows from left to right through two radiators and a pump

While its gases go from bottom to top through a full reed and six transfers.

Suzuki RM250Z: Will it win?

• The RM250Z has a case of role confusion. It thinks it's a 125. Unlike most personal identity problems, however, the RM's confusion works to its advantage, forming a highly competitive—but different—250-class personality.

The RM's 125-likeness comes primarily from the engine. Like a 125, the power comes on hard and fast at high rpm, and when it hits, there is never a shortage. In fact, the RM churns out enough knuckle-whitening power to shame any production 250 that has set knobs on American dirt. The RM's muscle is formidable, and the sudden delivery of that power marks a turn-around in Suzuki MX philosophy that requires a corresponding change in riding philosophy. Instead of lugging through turns at any rpm the way the earlier RMs could be ridden, the Z-model wants to be ridden hard. The rider is expected to devote his concentration to shifting perfectly and feathering the clutch just right. And when he does, he is rewarded with lap times much faster than would be possible on other, less demanding machines.

Even if the rider doesn't ride the RM with textbook perfection, it isn't the end of the race. When it falls off the pipe, the Suzuki still puts out enough torque to keep things moving while it waits for a fan of the clutch. But the RM must be ridden like a small-bore screamer, at the upper end of its rpm curve if the full advantage of its incredible power is to be put to use.

And the high-rev power isn't the only characteristic that gives the Z its 125 blood. Another is the machine's maneuverability. The RM begs to be flicked from line to line, and airborne acrobatics are so easy that an urge to show-off can overcome even the most conservative rider. The machine's impressive level of agility comes from several factors. At 217 pounds, it is even lighter than last year's air-cooled model and hangs right over the 216-pound FIM minimum weight limit for 250-class competition. On the track, the RM feels even lighter because of a relatively low center of gravity and overall compactness.

A short wheelbase also contributes to the RM's agility. The resulting responsiveness enables the RM to slice through the inside line of a turn in a way that few 250s can. But on slick or hard-packed turns, the front wheel can wash-out with little warn-



ing, so the rider must be careful to keep his weight forward while cornering. And as long-legged riders move forward, they will discover that the plastic radiator guards catch on their MX pants. But otherwise, any move forward feels normal because of a comfortable peg/bar/seat relationship.

That relationship feels just as natural when the tight turns become rough straights and the rider has to move back. Because of the hard-hitting power, the RM communicates an illusion of front-end lightness—the 47.5/52.5 percent front/rear weight distribution is actually typical of today's MXers—so again the rider must take care with his weight placement, even when flying in a straight line over the gnarlies.

But the rider won't have to worry about those gnarlies pitching him over the bars if he's too far forward. The Full Floater rear suspension will soak up almost anything. In designing its rising-rate system, Suzuki has hit on the progression curve that seems to be more versatile than anything else on the market. The initial inches of travel are soft but not mushy. And as the rear end

compresses, the Floater becomes gradually firmer, enabling the RM to chew up monstrous whoops as easily as it absorbs light braking stutters. And the four-way-adjustable damping of the Kayaba shock remains fresh long after the average rider fades.

At the other end of the Suzook, the fork performs well but doesn't match the performance of the rear. Although its action is smooth, the fork feels slightly stiff. At 10.3 inches of travel, the RM is giving away an inch or more to the competition and on the track, it's noticeable.

But that still doesn't detract much from the Suzuki's overall potency. One-two-fives have proven the effectiveness of the high-rpm, light-weight MX formula long ago through their ability to turn lap times that are comparable to more powerful machines. The RM250Z uses that same formula, but with the added benefit of power, and lots of it. And although that combination makes the Suzuki more demanding of its rider, it's a combination that wins.

—Ron Lawson

New Suzuki Light: Everything You Always Wanted In A Bike—And Less

• At 217 pounds, the RM250Z weighs two pounds less than last year's RM250X—an impressive statistic considering that an entire liquid-cooling system (radiator and cap, hoses, mounting hardware, water-pump impeller and drive gears, plus almost two pounds of coolant) has been added to what already was one of the lightest 250cc motocrossers.

Suzuki had to be almost fanatical in its quest for an ultra-light 250, however, since there were no places left on the RM where a lot of weight could have been lopped off in one fell swoop. Nor were exotic metals considered, since they would have made the bike prohibitively expensive. So the engineers just had to trim away seemingly insignificant amounts of material any-

where they could, often shaving off only a few grams.

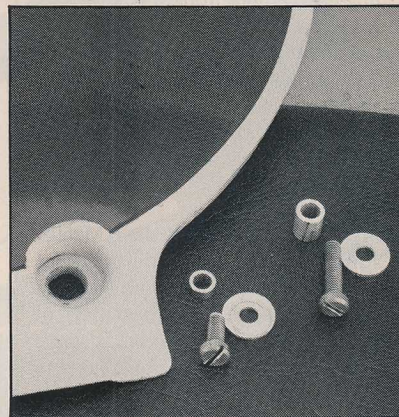
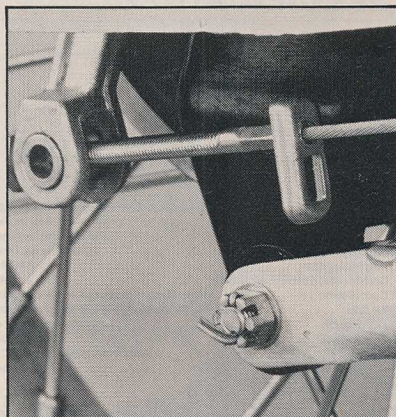
But grams add up to ounces, and ounces add up to pounds. And since that bit-by-bit method was the only reasonable solution, every piece on the motorcycle had to be considered a candidate for weight reduction, regardless of how trivial. The non-stressed areas of many engine internals were relieved, their wall thicknesses reduced and their edges undercut. Not much weight was shed in any one area, but overall, the liquid-cooled motor ended up no heavier than its air-cooled predecessor.

There is much more evidence of the RM's crash-diet visible on the chassis. The fork sliders have been machined to have

thinner walls except around the axle- and brake-locating lugs; the undersides of the handlebar control-levers are hollowed-out, and their brackets are little more than hollow shells; various non-critical bolts use dished-out hex heads; the number-plate mounting hardware is frail and awkward to use but a few grams lighter than the usual screws; and even the little metal tab on the rear brake wire that prevents the cable from rotating while the brake is being adjusted has had all excess material stamped from its middle.

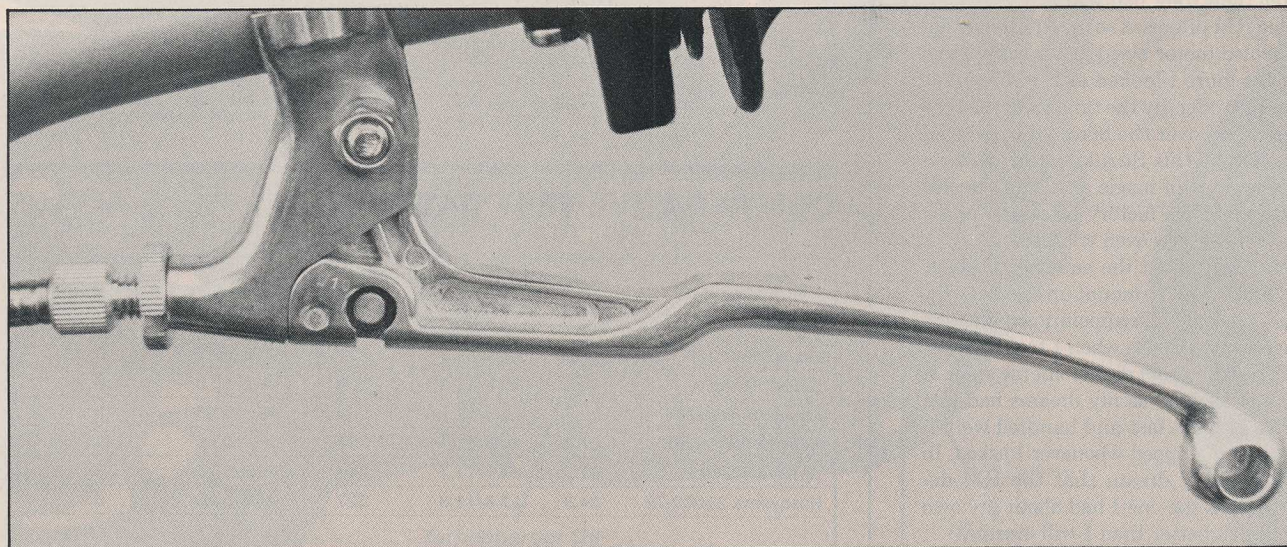
All of this may seem like so much over-kill, but Suzuki's experience with its factory race bikes has proven that such drastic measures are mandatory if minimum weight is to be the objective. Production models will cost more due to the additional steps required to manufacture the lightened components, and the long-term reliability of some pieces will be compromised as a result of being pared to the bone.

But that's the going rate for ultra-light works-bike replicas: You pay a lot more to get a little less. —Paul Dean



A few examples of what seems like insignificantly lighter RM250Z hardware

Grams are like calories: Cut down on a few here and there and the pounds will eventually melt away.



Continued

Ride Review

• I'm fully prepared to tell you that the RM250Z is the fastest, best-handling, most forgiving and least physically demanding 250 I've ever ridden. But I'm not fully prepared in all cases to tell you *why*. Because design-wise, this bike goes against just about everything I've been led to believe about how the ideal 250cc motocrosser ought to be designed.

For instance, the RMZ has an oversquare bore-stroke arrangement, although we've all been lectured (and mostly by Suzuki) for the past few years on the improved port time/area relationship offered by undersquare designs. Supposedly, that was to give us lower-revving motors with broader powerbands for more-tractable power delivery, but the Z-model is a comparatively peaky and explosive high-revver. And the chassis is pretty short-coupled, whereas we seemed to have been right in the midst of a trend toward long wheelbases. So in terms of specifications, the RM seems more like a liquid-cooled version of a middle-Sixties 250 MXer than a leading-edge representative of the early Eighties.

I'm not complaining, mind you; any bike that can instantly make me a better rider the way this one can is all right with me. I just wish I didn't have to be so evasive every time someone asks me why.

—Paul Dean

• I really didn't want to ride the RM250Z. As I stared at its tempting form I kept thinking about a haunting message I'd once read that said, "The best part of ownership is dreaming about it." It's true too, because that way you don't have to suffer the harsh realities of disappointment. It's also possible, as I realized while staring at the new RM, that in dreams you can start to imagine things to be far better than they really are.

The RM promised so much from its liquid-cooled motor and Floater suspension, and the more I looked at it, the more it seemed to offer. By the time I was ready to throw a leg over the bike, I'd convinced myself that this Suzuki could perform nothing short of magic. It already looked trickier than the factory bikes and in my mind's eye it was even trickier still.

I thought about the haunting message and didn't want to mount up and have my dream dashed by disappointing reality. So imagine my surprise when I took my first lap. The bike didn't disappoint me at all. It was just as good as my dreams had predicted. It went fast and handled well, it turned and stopped whenever I asked. In fact, the only dream that the RM destroyed was the one I had about my own ability. It's better than I will ever be.

—David Dewhurst

Suzuki RM250Z



SPECIFICATIONS:

IMPORTER: U.S. Suzuki Motor Corporation
3251 East Imperial Highway
Brea, California 92621

CATEGORY: motocross

SUGGESTED RETAIL PRICE: \$2099

ENGINE

Type liquid-cooled two-stroke vertical single
Port arrangement one reed-valve-controlled intake,
six transfers, one exhaust
Bore and stroke 70.0mm x 64.0mm
Displacement 246.3cc
Compression ratio (corrected) 8.4:1
Carburetion one 38mm Mikuni rectangular-slide/needle
Air filter twin dual-stage, washable oiled foam elements
Lubrication pre-mixed fuel and oil
Starting system primary kick
Ignition internal-rotor magneto CDI
Charging system none

DRIVETRAIN

Primary drive straight-cut gears; 2.727:1 ratio
Clutch wet, multi-plate
Final drive *520 chain (5/8-in. pitch, 1/4-in. width);
3.500:1 (49/14) ratio

Gear	Internal gear ratio	Overall gear ratio	MPH per 1000 RPM
I	2.077	19.825	3.9
II	1.688	16.108	4.8
III	1.353	12.914	6.0
IV	1.105	10.550	7.3
V	0.955	9.112	8.5

SUSPENSION/WHEEL TRAVEL

Front air-spring, 38mm stanchion tube diameter/
10.3 in. (262mm)

Rear Full Floater, 4-way adjustable rebound damping,
25mm spring preload adjustment/11.0 in. (279mm)

BRAKES

Front drum, single-leading shoe
Rear drum, single-leading shoe, straight-pull cable-operated

TIRES

Front 3.00 x 21 Dunlop Sports K490
Rear 5.10 x 18 Dunlop Sports K390

DIMENSIONS AND CAPACITIES

Weight 217 lbs. (98kg)
Weight distribution 47.5% front, 52.5% rear
Wheelbase 57.5 to 58.3 in. (1460 to 1481mm)
Seat height 38.0 in. (965mm)
Handlebar width 32.0 in. (813mm)
Footpeg height 16.3 in. (414mm)
Ground clearance 14.0 in. (356mm), at engine cradle
Steering head angle 29.3 degrees from vertical
Front wheel trail 4.80 in. (122mm)
Frame tubular chromoly steel, double front downtubes
Fuel tank plastic, 2.2 gal. (8.5l), no reserve
Instrumentation none

PERFORMANCE

Top speed (calculated) 72 mph (116 kph)

WARRANTY:

none

AVAILABLE COLOR:

yellow only

All weights and measurements are taken with machine unladen and fuel tank empty

COMPARATIVE TEST DATA:

Make & Model	Horsepower	Wheel Travel Front/Rear, in.	Weight (fuel tank empty), lb.	Weight bias Front/Rear percent	Transmission, number of speeds
Suzuki RM250Z	NA	10.3/11.0	217	47.5/52.5	5
Suzuki RM250X	NA	10.5/11.3	219	47.0/53.0	5
Kawasaki KX250A6	26.8	11.3/11.2	230	46.5/53.5	5
Honda CR250R-80	27.5	11.6/11.7	222	47.0/53.0	5
Yamaha YZ250G	27.5	11.6/11.7	217	46.5/53.5	6
Husqvarna 250CR-79	24.3	11.8/11.8	227	44.5/55.5	6