

# CYCLE CANADA

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Cartoon  
classics of  
motorcycle  
history

**RZINGER**  
New Yamaha  
adrenalin  
charger!

**INTERCEPTOR**  
Almost perfect  
race-bred 750

**KAWASAKI KDX**  
Enduro 200 for  
woods riders

**SUZUKI TEMPTER**  
Bargain 650 for  
twins fanatics




Yamaha RZ350





**CYCLE  
CANADA**  
TEST



A photograph of a rider on a Yamaha RZ350 motorcycle. The rider is wearing a white racing suit and a white helmet with a logo. The motorcycle is red, white, and blue, with 'RZ350' written on the side. The background is a plain, light-colored wall.

**YAMAHA RZ350**

# ZZZINGER

Yamaha's RZ350 — the quickest-handling, hardest-stopping, fastest, lightest, most powerful 350 street bike in the whole wide world. Hold on!

PHOTO BY BILL PETRO



# YAMAHA RZ350



One of the pleasures of owning a 1981 or 1982 RD350LC was knowing that your bike had the power and handling to make riders of much larger bikes look silly. The little 350 pounded out 47 hp and gobbled up corners like a race bike. It braked better than any other street motorcycle, and its light weight allowed it to dance around most 550s and 750s. It was, simply, the ultimate joy machine for the self-confessed street squirrel.

Well, that was last year. Motorcycle technology changes as rapidly as the lead in a grand prix road race. Last year's ultimate is this year's pile of spare parts (if they'll still fit). The factories are working long shifts looking for more power and better handling to put under the likes of Kenny Roberts and Freddie Spencer. And these days, it's taking only a year or so for the trickiest race track technology to filter down into motorcycle dealers' showrooms.

The RD350LC was bursting with race track developments when it was introduced in Canada two years ago, most notably liquid cooling, monoshock rear suspension and a peaky engine that didn't wake up much before 6,000 rpm. The list

of changes was short in 1982 — color to black from white, and that was about it.

If the RD350LC was a street bike that also made a pretty good road racer, the 1983 RZ350K is a bona fide race bike that just happens to be legal for road riding.

Yes, the RZ is that new, and that good.

The most perceptible change is in the styling. The race-bred triangulated steel frame supports a drop-on gas tank that holds 25 per cent more fuel than last year's design. The new fairing and belly pan are more cosmetic than functional, and they succeed in enhancing the RZ's go-fast appearance. Wheels are a lighter three-spoke design, with both front and rear considerably wider (2.15x18 front and 2.50x18 rear, compared with 1.85x18 front and rear last year) to allow for the addition of wider tires. The red, white and blue paint job is garish — like that of a GP race bike — and the striping seems out of synch with the strong lines of the red triangular frame. But this isn't a boulevard cruiser, after all.

The dynamic styling changes mask the real improvements within. Claimed horsepower has been increased from last year's 47 at 8,500 rpm to a whopping 55 at 9,000 rpm. That's right — 55 hp from a 350.



Power Valve adjusts exhaust-port height to match revs for a broader powerband.

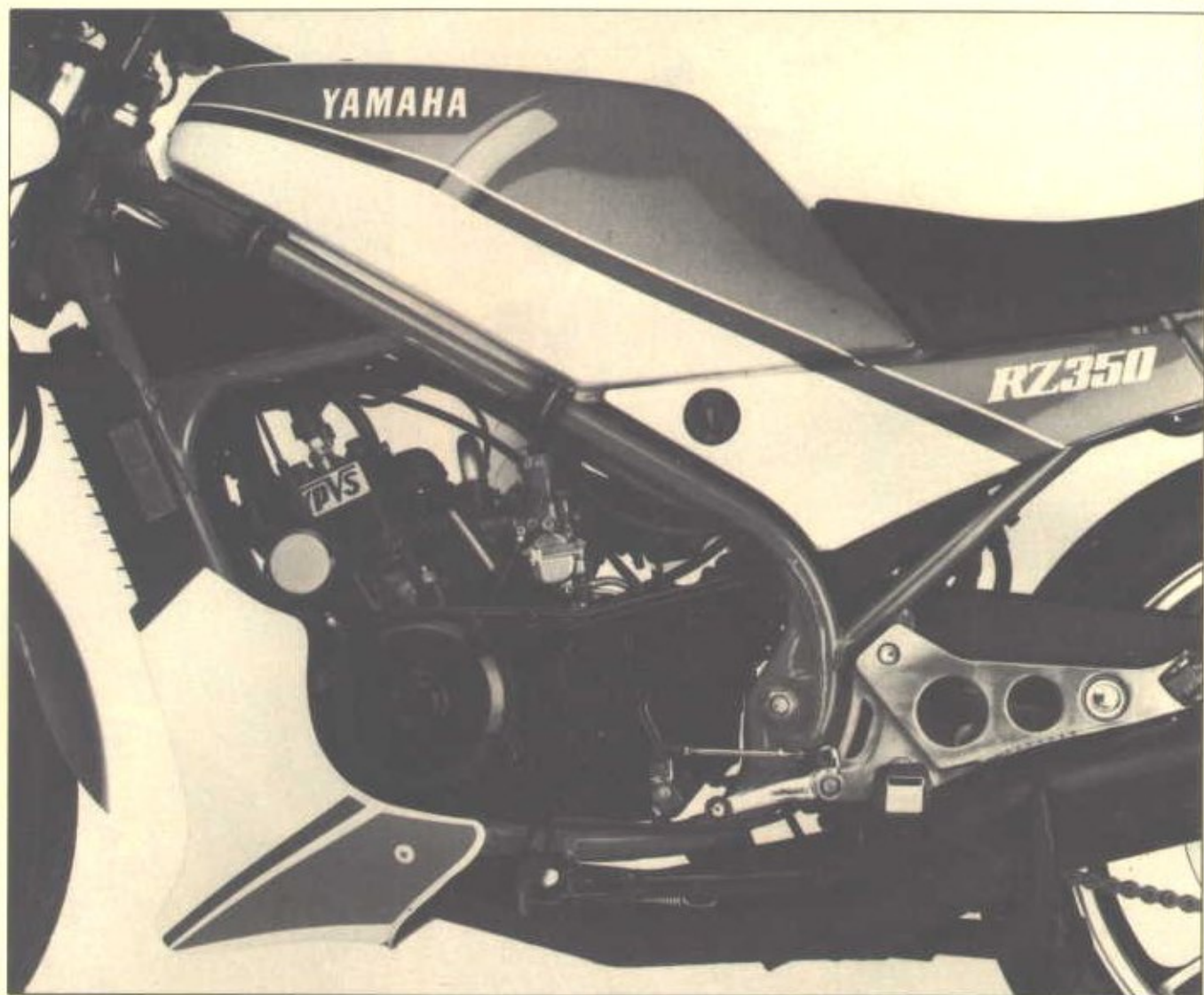


Nut under battery adjusts rear shock's five-position damping via toothed belt.

The increase comes primarily from the addition of the Yamaha Power Valve System, until now used only on Yamaha motocrossers and GP race bikes. The valve, operated electronically via a microcomputer, is a rod-shaped device placed horizontally across the front of the engine, with cutaways to match exhaust port dimensions. At high rpm, the rod rotates so that the cutaway raises the exhaust port and gives the greatest possible opening. At lower rpm, the valve rotates to lower the port, thus delaying the timing of exhaust operation. The microcomputer monitors engine speed and controls a servomotor hidden behind the steering head that uses cables on the left side of the engine to turn the valve. The motor activates when you turn the key on, during rough idle, and after the engine starts, rotating the valve to scrape off any carbon build-up. It makes a squeaking sound that's great for entertaining your friends at the doughnut shop.

The real advantages of the power valve become apparent once you pull out of the doughnut shop or take the bike to the race track. The RZ pulls well for a high-strung two-stroke from about 4,500 rpm, then screams into the power at 6,000 rpm.





Below 4,500 rpm there's not much, but midrange and especially top end are vastly improved over the RD.

Last year's RD liked to wheelie when cranked on above 6,000 rpm in low gears. The RZ doesn't know how to do anything else. We took a stock RZ and a staff member's 1981 RD (which had a fresh motor and jetting changes in anticipation of the racing season) out to Shannonville Motorsport Park for a comparison run. We were startled at the results.

The RZ's midrange power allows it to pull strongly out of corners, while the RD strains to climb into its powerband. Both bikes come to life at about 6,000 rpm and are even until 8,000 rpm, when the RZ again shoots ahead. Power of both diminishes at just over 9,000 rpm, but by then the RZ is lengths ahead.

Although the RZ shines at the race track, its increased tractability also makes it a reasonably civil street mount. The CDI ignition, which has an electronic governor that monitors engine loads and adjusts ignition timing, permits low-rpm chugging around town without fouling, and the power valve helps to lessen the need for shifting. It's not especially perky below 4,500 rpm, but it works.

At higher speeds, letting revs drop below about 5,000 rpm requires at least one downshift for passing or climbing hills.

The surge of power at 6,000 rpm and again at 8,000 rpm is definitely worth the lack of punch at the lower end. One staffer described the sensation of the RZ coming into the power as being more exciting than that of even a Honda V65 Magna. More aptly, the power delivery could be compared with that of a Yamaha TZ race bike, from which the RZ gets its new letter designation.

The engine benefits this year from the addition of a thermostat in the liquid-cooling system. The RZ warms up far more quickly than the RD, and the temperature needle rarely varies from the middle position on the gauge. When the bike is stopped at a traffic light, the needle will slowly climb, then plummet back to the middle once the thermostat opens. No need any more, it seems, to tape over part of the radiator on cold days.

Transmission and clutch are little changed from last year, although the two combine to give a smoother feel than with the RD box. Internal ratios are the same, but the final drive has been made taller by

New tank with 25 per cent more capacity sits on widely spaced top frame tubes.

adding one tooth to the countershaft sprocket, giving the bike a higher potential top speed. Clutch-lever pull remains light, although the winner in this contest is still the Kawasaki GPz550.

Our drag strip times on the RZ confirmed what we had learned at the race track. The little Yamaha scorched through the quarter mile in 12.66 seconds with a trap speed of 171 km/h, compared with 13.60 seconds at 152 km/h for last year's RD. Put those statistics next to the 11.84 seconds at 188 km/h performance of the Honda V45 Interceptor — which is much easier to get off the line at the drag strip — and you have a graphic illustration of the RZ's power.

Further proof came at Shannonville during the opening round of the Castrol XLR Motorcycle Challenge series, where RZs finished first in amateur 600 cc GP, second and third in amateur 600 production and second and third again in amateur 750 production.

The other major improvement of the RZ350 is in handling. New this year is a rising-rate monoshock rear suspension

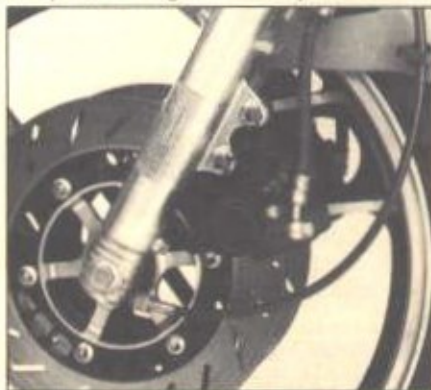




Stiff frame permits steep rake angle, giving both quick steering and stability.



The microcomputer-controlled actuator adjusts Power Valve via two cables.



Double front discs bring the lightweight RZ to sudden, well-controlled stops.

## YAMAHA RZ350

that is among the best offered by any motorcycle manufacturer. Its vertical gas/oil shock mounts low between the wheel and the swingarm pivot, helping to lower the bike's centre of gravity.

The progressive action of the rear suspension is a large improvement over last year's design, and almost as noteworthy as the engine changes. The ride is surprisingly supple over small bumps, yet the rear end soaks up severe pavement imperfections and stutter bumps without losing traction.

A five-position preload adjustment operates by a belt that loops around the top of the hidden rear shock and around a smaller gear located within wrench reach

behind the right side cover. It's not an easy chore to alter preload, but RD owners will already be familiar with bloodied knuckles from changing preload on 1981 and 1982 350s. We changed it from the standard No. 2 position one firmer to No. 3, and found it about right for all weights of rider.

The front fork has sprouted air caps and larger-diameter stanchion tubes. The front end won't flex even under heavy braking, but it's still not in the league of the rear suspension when it comes to soaking up jolts.

At standard air pressure of 40 kPa (5.7 psi), the front end would dive drastically under moderately strong braking and bottom easily when traversing rough road. Maximum air pressure is 118 kPa (17.1 psi), but even at 83 kPa (12 psi) the fork became too stiff for anything but riding on

smooth roads. Some pressure between, with experimentation with fork oils, might be the answer.

Sadly, the fork doesn't have an equalizing air line between the two legs, making air adjustment a tedious affair.

Regardless of the poor front fork, handling of the RZ is superb. Front-end rake, at 26 degrees, is even steeper than last year's already steep angle of 27.2 degrees, allowing the bike to flip from side to side in quick esses and dive into tight corners effortlessly. The combination of the excellent rear suspension, rigid frame, quick steering and strong brakes means that any and all corners are easy prey for the RZ. Fly up to your favorite tight bend, slam on the front brake, throw the bike over, and let the midrange power pull you out. The bike won't wobble and the rear







tire will track smoothly over any small bumps.

Remarkably, straight-line stability doesn't suffer from the steep rake of the front end or the light weight (at a dry weight of 145 kg (319 lb), it's 2 kg heavier than last year). It's almost as civil on the highway as it is hyper in the corners. A perfect blend.

The weak link in road holding is the stock Yokohama tires. With the brakes, suspension and ground clearance as good as they are, our natural inclination at the race track was to brake later than usual at the end of straights and lean farther than usual in corners. We couldn't do it, however, because the front tire began to skip under moderately hard, straight-up braking, and broke loose suddenly in a few corners. The rear tire wasn't quite as bad,

but still tended to step out — rather than drift — when power was applied coming out of corners. The tires are adequate for commuting, but that's about it. A Yamaha spokesman said next year's RZs could possibly be shod with Pirellis, as is the new Seca 900.

A better rear tire might alleviate another problem we encountered — locking the rear end under braking. This year Yamaha has tossed out the rear drum brake on its 350 in favor of an opposed dual-piston disc brake. The unit is strong and requires a light touch to prevent locking. But the slotted dual-disc front brakes are still the best in the business: fade-free with a linear feel and not much lever movement necessary to get the job done.

Seating position and instrument placement were designed with one thing in

Tire adhesion and a rider's nerve set cornering limits, not ground clearance.

mind — fast riding. The sculpted tank allows riders to slide forward almost up to the filler cap, and the indentations on the sides accept all lengths of legs. The tachometer has been positioned in the centre of the instrument panel, flanked on the left by the speedometer and on the right by a large coolant temperature gauge.

Rubber mounting of the engine eliminates most of the tingling at high revs, but contributes to a Harley-like shaking at low revs. At highway speeds, the RZ is as smooth as a touring bike.

While changing the name to RZ from RD, Yamaha engineers apparently decided the bike should also sound like a TZ. It's still quieter than most high-



# SPECIFICATIONS

## Yamaha RZ350



**MODEL** ..... 1983 Yamaha RZ350K  
**TEST DISTANCE** ..... 1,504 km  
**PRICE** ..... \$2,999

### ENGINE

**TYPE** ..... Liquid-cooled two-cylinder two-stroke with reed-valve induction and electronic power valve

**DISPLACEMENT** ..... 347 cc  
**BORE AND STROKE** ..... 64 x 54 mm  
**COMPRESSION RATIO** ..... 6.0:1  
**HORSEPOWER** ..... 55 at 9,000 (claimed)  
**TORQUE** ..... 4.5 kg-m at 8,500 (claimed)  
**CARBURETION** ..... Two Mikuni VM26  
**STARTER** ..... Kick only  
**OIL CAPACITY** ..... 1.6 litre injector oil tank, 1.7 litres transmission lubricant

### ELECTRICAL

**IGNITION TYPE** ..... CDI with electronic governor  
**GENERATOR OUTPUT** ..... N/A  
**BATTERY CAPACITY** ..... 12 volts, 5.5 amp-hours  
**HEADLIGHT** ..... 60/55 watts

### TRANSMISSION

**TYPE** ..... Six-speed, constant mesh, wet clutch  
**PRIMARY DRIVE** ..... Gear, 2.869:1  
**INTERNAL RATIOS** ..... (1) 2.571, (2) 1.777, (3) 1.318, (4) 1.083, (5) 0.961, (6) 0.888  
**FINAL DRIVE** ..... No. 520 chain, 39/17, 2.294:1

### CALCULATED DATA

**WEIGHT/POWER RATIO** ..... 2.63 kg/hp

**SPECIFIC OUTPUT** ..... 158 hp/L  
**PISTON SPEED AT REDLINE** ..... 18 m/sec at 10,000 rpm  
**RPM AT 100 KM/H** ..... 5,049  
**MAXIMUM SPEEDS IN GEARS** ..... (1) 68, (2) 99, (3) 133, (4) 162, (5) 183, (6) 198 km/h

### PERFORMANCE

**QUARTER MILE** ..... 12.66 seconds at 171 km/h

### FUEL

**CAPACITY** ..... 22 litres including reserve  
**RESERVE CAPACITY** ..... 2.0 litres  
**CONSUMPTION** ..... 6.7 L/100 km (42 mpg)  
**RANGE** ..... 328 km total, 30 km reserve

### CHASSIS

**WHEELBASE** ..... 1,385 mm  
**RAKE/TRAIL** ..... 26 degrees/96 mm  
**SUSPENSION** ..... Air-assisted telescopic front fork with 35 mm diameter fork tubes and 140 mm travel, rear swingarm with single shock adjustable five ways for preload with 100 mm travel

**BRAKES** ..... Double front discs 265 mm diameter, single rear disc 267 mm diameter

**TIRES** ..... Yokohama 90/90-18 51H front, 110/80-18 58H rear

**DRY WEIGHT** ..... 145 kg (319 lb)

**LOAD CAPACITY** ..... 211 kg (465 lb)

**HANDLEBAR WIDTH** ..... 673 mm (26.5 inches)

**SEAT HEIGHT** ..... 775 mm (30.5 inches) with 70 kg (155 lb) rider

Distributed by Yamaha Motor Canada Ltd., 480 Gordon Baker Rd., Willowdale, Ont., M2H 3B4; (416) 496-1011.

## YAMAHA RZ350

performance two-strokes, but the baffling in the pipes now makes less of an attempt to mask the expansion-chamber howl of the engine. It sounds somewhat like the old Kawasaki triples, although more refined.

The need to fold up the right foot peg to provide clearance for the kick-start lever has been eliminated, but wise riders will still fold the peg before starting. Although the lever has been redesigned to clear the peg, it's a tight fit, and your ankle can get nipped by the peg if it's not folded up.

With the rear shock no longer mounted horizontally atop the engine, there's more room under the seat to fit a larger air-filter box and to position the injector-oil tank for easier access. Less accessible this year

is the radiator cap, now hidden beneath the gas tank.

Yamaha has gone to great lengths to keep the RZ's weight low, but we question the use of a fibreglass-reinforced-plastic crankcase cover on the left side of the engine to shave off some weight. It's a sure bet to crack if the bike is dropped on that side.

The only problem we had with the RZ during 1,500 km of race track, drag strip and road riding was a stripped exhaust-flange thread. The exhaust pipes had to be removed in order to take off the centre-stand (stands must be removed before riding on a race track) and the bolt pulled out of the flange when we replaced the pipes. A Helicoil rectified the problem.

The RZ is a refreshing change from the battery of four-strokes now on the market, and its manic personality made

every ride to our film-processing shop or the burger place for lunch a mini grand prix for one. This is a legal TZ, toned down just enough to appease the law. It hasn't been toned down enough, however, to meet the tough exhaust emission standards in the United States, so you'll get a lot of longing looks from passing motorcyclists on any cruise down to Bangor or Buffalo or Grand Forks or Seattle.

But the RZ isn't for everyone. One staff rider, who recently sold his Seca 750 to help pay for his wedding, muttered something about a lack of versatility, a poor seat for carrying passengers, and blue haze from the exhaust pipes. And he's absolutely right on all accounts.

So the rest of us kept the RZ for ourselves, and let him ride something with plenty of passenger room, low-end torque and a comfortable ride: the bus.

PHOTOGRAPHY BY SCOTT EWEN AND BILL PETRO