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'91 YAMAHAS • '91 SUZUKIS • '91 HONDAS • '91 KAWASAKIS!

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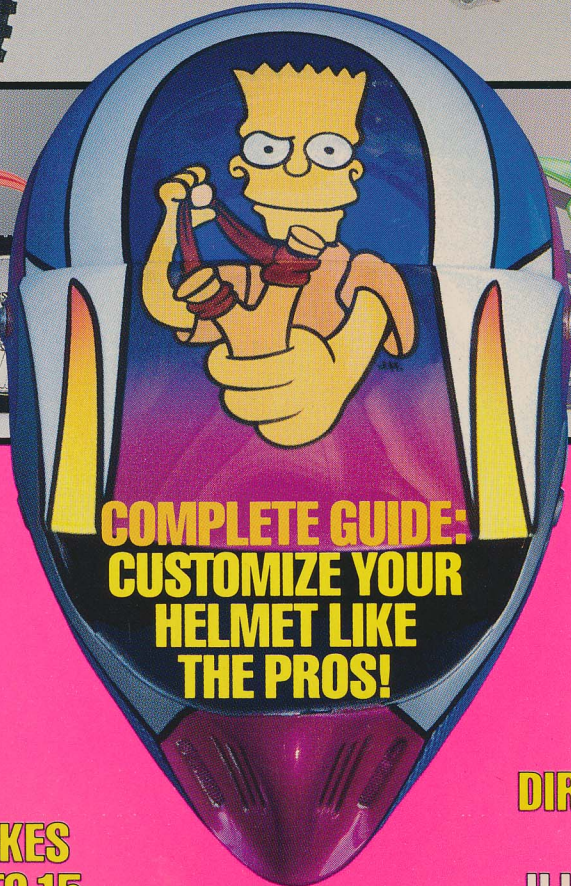
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ISSN 0364-1546

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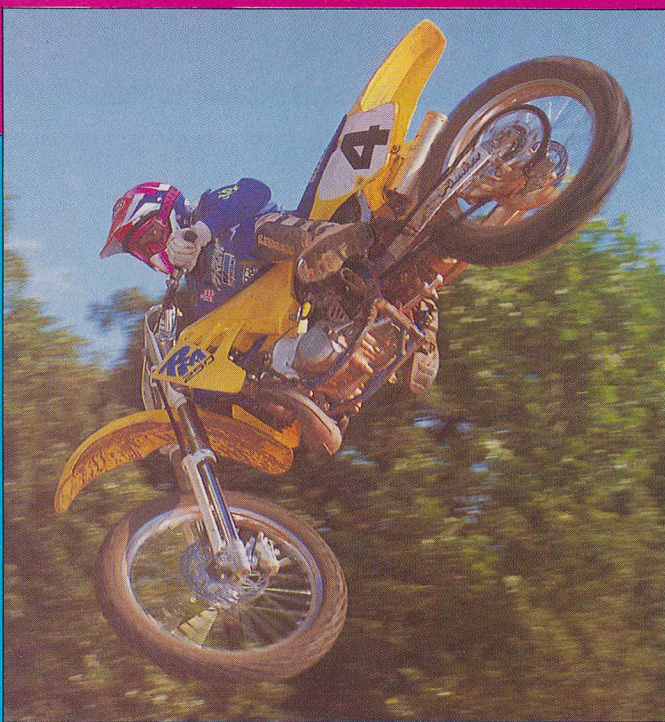
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ON THE COVER: 1991 motocrossers from Yamaha, Honda, Kawasaki and Suzuki vie for "rarest bike" honors without even moving. Kirby Concepts' custom-painted Arai MX-Pro helmet demonstrates how paint can identify you as a pro racer and say a bit about your role models at the same time. Photos by the press relations departments of the respective motorcycle manufacturers and by Kirby Concepts, except for Tim Tolleson's RM shot. Cover design by DeWest; color separations by Valley Film.



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WARNING: Much of the action depicted in this magazine is potentially dangerous. Virtually all of the riders seen in our photos are experienced experts or professionals. Do not attempt to duplicate any stunts that are beyond your own capabilities. Always wear the appropriate safety gear. *Dirt Bike* does all of its testing and photography legally on public land, or private land with permission from the owner(s), and we abide by the local laws concerning vehicle registration and muffler/spark arrester requirements. We are not responsible for quality of aftermarket accessories we use.

DIRT BIKE Magazine (ISSN 0364-1546), September '90, is published monthly by Daisy/Hi-Torque Publishing Company, Inc., with editorial offices at 10600 Sepulveda Boulevard, Mission Hills, California 91345. Subscriptions \$15.98 for 12 issues (one year). Canada add \$5 per year, and all other foreign add \$6 per year for additional postage. Copyright ©1990 by Daisy/Hi-Torque Publishing Company, Inc. All rights reserved. Nothing in this magazine may be reprinted in whole or in part, by mimeograph or any other means, without the express permission of the publisher. Contributors: Photographic submissions must be 5x7 or 8x10 glossy black and white, or 35mm and larger color slides. Please mark each photo with owner's name and address. Manuscripts should be typewritten. Unsolicited contributions, manuscripts, photographs and illustrations must be accompanied by a stamped, self-addressed envelope. Unless special arrangements are made in advance, all published material becomes the sole property of Daisy/Hi-Torque Publishing Company, Inc. The publisher does not assume responsibility for unsolicited material. Second class postage paid at San Fernando, California 91340, and at additional mailing offices. POSTMASTER: Send address changes to *DIRT BIKE* Magazine, P.O. Box 9502, Mission Hills, California 91395-9502. Printed in USA.

SURE FUN FOR '91

*Works parts on
production racers*

By the DIRT BIKE Staff

Yamaha did not sell very many 1990 YZ250s, partly because the famous YZ midrange hit was toned down from '89 and partly because the suspension was overshadowed by Kawasaki and Suzuki. For '91, the tuning fork folks want to set the motocross world on fire with a much-improved YZ250 and an easier-to-ride YZ125.

They've addressed every complaint of the past and thrown in full-on works technology learned from Team Yamaha's racing efforts, and they've made styling changes to attract trendy youths. Yamaha wanted to snake the other manufacturers, so they invited *Dirt Bike* out to test pre-production 1991 YZs head-to-head against '90 models, just like regular paid Yamaha test riders. However, instead of being sworn to secrecy, we could bring our cameras along to record the suspension testing.

What a change! Instead of having to crawl for miles through cactus and evade security guards to get new-model photos, we merely drove through the front gate. Here's what we saw and experienced.

LOOKING AT THE CHANGES

Both new YZs have all-new suspension components and geometry. A different shock angle and linkage mate with revised shock valving to provide smoother action out back, and works-type 43mm KYB forks, which have both the compression and rebound stacks on top of the cartridge, replace the





The 1991 YZ125 (left) stands out from the '90 model with wilder colors and graphics on top of radically changed plastic. Snagging your boots and tearing the seat's lower front portions are a thing of the past.

◀ **Jim Holley airs out the new YZ125, which has much better low- and midrange, suspension, brakes, shifting and throttle response than past efforts. It's less demanding and faster than the '90.**

much-criticized 41mm units. Although swing-arm length is unchanged, the tapered shape is new and looks trick. Extensive motor changes, new Nissin brakes and shorter silencers also follow works modifications to both machines.

Both bikes also received new plastic and graphics. The seat is reinforced at the lower front edge to cure tearing problems, and the all-new side panels extend all the way to the tank to prevent your boots from snagging on the seat. These side plates also incorporate the best grab handles to ever grace a dirt bike, and the rear fender is styled to flow with the panels and lower-swooping radiator shrouds. Both the front fender and number plate were standard '90 fare, but we hear tell a space-age aerodynamic front plate and tube-hugging '90 XT600-type front fender may see final production.

We polled riders on the new magenta-on-white seat and graphics and found no middle ground—either they loved the Team Yamaha replica colors or they hated them. If you don't like 'em, their stickers peel off easily enough and a seat cover will tone down the new-wave looks. These bikes are so good you'd be crazy to pass them up because you don't like magenta.

WRINGING OUT THE 125

Most of the modifications to the 125 were directed at making the bike easier to ride without losing anything on top. Besides the works-type shortened silencer, the '91 125 got an all-new power-valve shape, porting, head shape and carb settings. This, along with tightening up the overall gear ratios with a one-tooth-larger rear sprocket (from 50 to 51), gives the new YZ much better throttle response in the lower revs with a stronger midrange punch. The bike also revs a bit further than the '90, requiring fewer shifts per lap.

Ah, yes, shifting. Yamaha threw away the hated, notchy shifter plaguing past models and went to an all-new ratchet-type design with more leverage. Our brand-new '91 test unit shifted much easier than the well-broken-in '90 we had along for comparison. Up, down, with or without the clutch, even in deep sand, shifting is excellent.

Suspension action is better balanced than '90, and both ends are much more compliant over small bumps. The ride is much more predictable on whooped-out sweepers, where the '90 kicks. Turning is quicker, and the brakes are more powerful and quieter.

TESTING THE YZ250

Stroke was increased .8mm (from 68mm to 68.8mm), bumping displacement to 249.9cc. Power-valve timing, the ignition curve, the pipe dimensions and head volume were finetuned to provide crisper throttle response in the lower revs. Low-end and midrange response and power are much stronger, while top-end power is like the '90. Receiving the same shifting changes as the 125, the 250 shifts much smoother this year.

Like the 125, turning is quicker yet high-speed stability is better. Both brakes are stronger and quieter. Your boot no longer snags on the seat, although the right side panel does bow your leg out a bit more than the '90 plate. Despite the stronger hit, the bike is easier to ride in slick conditions.

As we stated before, we were there to test for Yamaha R&D. The first fork settings were better than the '90 forks but still transmitted a spike to the arms when slapping down from jumps. A Kayaba technician was on hand to handle complaints with the settings, and he installed a less progressive compression stack. After dialing both ends to the new damping curves (see related article on setting up your suspension properly), both Holley and Torquin' Tim were stoked with the 43mm forks. If these settings see production, the '91 YZ250 will have better forks than the '90 KX250 and a better shock than the '90 RM. We're talking tremendous improvement and a plush, predictable ride.

◀ **Both 1991 YZs got works-style 43mm forks, a new frame and linkage combination, a tapered Delta box swingarm, extensive styling changes and motor mods coming directly from Team Yamaha.**



'91 SUZUKIS

• Suzuki also made radical styling changes to their motocross line, along with several technological changes to fine-tune the same basic design packages. The effort to build better machines and attract the fashion-conscious youth market with wild styling is coupled with Suzuki's huge racing budget, generous contingency program, free Tony D riding school and support trucks at events across the country again for 1991. Suzuki is definitely making a push to displace Honda as the most represented bike at starting gates across America. National championships and wins from Denny Stephenson, Buddy Antunez, Guy Cooper and Larry Ward show that the '90s have potential, and the '91s will benefit from lessons learned by Team Suzuki. Let's take a look at the changes.

ACROSS THE BOARD

All RMs get a yellow frame, white radiator shrouds and side panels with yellow/orange graphics, a textured mottled yellow/gray seat and a white front number plate. Most folks either love or hate the new look, depending on age and taste. It's clearly a Japanese effort at being hip, and one staffer dubbed the new look "McRM."

Strengthened frames, pistons, rods and welded cast/extruded swingarms are new for all RMs, and the 250 and 80 have the '90 125-type dual O-ring head gasket. The 125 and 250 get Team Suzuki-inspired Showa suspension components, with 45mm inverted cartridge forks up front and an Ohlins-type fade-control system out back. Suzuki's Showa milk-bottle shock also features 40 percent more oil capacity than the '90 KYB unit (the 80 also has this fade-fighting feature). Bob Hannah did extensive testing with Showas and KYBs and found the Showas to offer better weight transfer for cornering and quicker lap times. Guy Cooper tested



Suzuki unveiled its 1991 styling changes at the '90 supercross final, an appropriate introduction considering how the extensive motor and suspension changes came from Team Suzuki.

the '91 units against his '90 race bikes and found the action to be almost identical.

Both big RMs have new, better-flowing silencers and a parallel-type dual radiator system, where coolant circulates through them individually rather than flowing through one and into the other. New linkage bearings and dust seals grace the 125 and 250, along with thicker brake pads for durability. A stronger chainguide is standard on all RMs, as is a stronger gear shift cam stopper plate, which sometimes broke last year in crashes. All RMs now have four-petal reeds instead of eight-petal units, for quicker throttle response.

250 CHANGES

- Low- to midrange power enhanced by changes in exhaust port and power-valve timing, shortened intake tract and expansion chamber.
- Piston has seven percent more silicon (and no plasma coating) for more durability.
- Connecting rod strengthened to handle



The best 80 of '90 gets better for '91. Its modifications are intended to make it more fun and easier to ride and less a pain for dad to maintain. Additional gusseting behind the steering head increases rigidity.

increased horsepower, as are third, fourth and fifth transmission gear engagement dogs.

- Steering quickened slightly with one-quarter-degree steeper head angle, 5mm less trail and 2.5-degree more offset (27° 15', 108mm and 22.4°).

- Different lower steering head bearing for better bearing adjustment (see article on setting up your suspension in this issue).

- Better foot support is supplied by 10mm wider footpegs.

125 CHANGES

- Top-end power is enhanced by booster exhaust ports and different exhaust valve guides.

- Piston is no longer plasma-coated and has seven percent more silicon for more durability.

- Third through sixth gears are strengthened.

- Steering geometry is quicker (from 28° to 27° 45' rake, 116mm to 111mm trail, 27° to 24.5° offset).

80 CHANGES

- New steering head dust seal extends bearing life.

- Rear compression and rebound damping revised for more progressive action (smoother on small bumps).

- Ring 0.25mm thicker for better durability. •



More frame rigidity, quicker turning, completely new Showa suspension, more powerful brakes and across-the-board power increases were the goals for the 1991 RM250. We hope it's as fast as it is ugly!



For the last two years, the RM125 has been a slug on top-end. Suzuki set out to change that with a less-restrictive silencer, exhaust boost ports, new exhaust valve guides and new piston.

'91 HONDAS



◀ New linkage ratios and damping curves, graphics and 250-styled gas tank, seat, side panels, rear fender, airbox and subframe highlight the 1991 CR125. Honda's press release says the "striking new graphics emphasize the aggressive performance of the hot new CRs."



◀ All big Honda motocrossers get redesigned Showa forks with larger damper cartridges, the springs placed high on the cartridge to fight friction and contamination, a new bottoming system and internally anodized legs.



◀ Like the 125 and 250, the CR500 gets a new KYB shock with a newly developed swivel bearing. The 500 also gets 250-styled subframe, airbox and plastic. Numerous refinements grace all three red rockets.

'91 KAWASAKIS

Kawasaki went all out on the KX80. Changes include a tubular perimeter frame, stiffer box-section swingarm, suspension refinements, new linkage ratio and extensive motor mods to increase rideability and longevity. The bike looks every bit as trick as its big brothers. ▶

Refinements for better power and terrain control were priorities for the KX125. New works-style forks and a forged link with revised ratio, lighter wheels, aluminum sub-frame, a dual-piston front brake, a stiffer swingarm and frame and a new micro-processor ignition for a wider powerband top the changes. ▼



▲ Sales of Open-class machines aren't great enough to warrant a perimeter frame, but the KX500 got all of the chassis, brakes, suspension and ignition changes that the '125 and '250 did. On top of that, the 500 has KIPS-D, which features a decompression system built into the power-valves for easier starting.

◀ The KX250 gets all of the '91 KX125 mods plus a new pipe for more top-end over the '90 KX250. We're glad to see that Kawasaki resisted the trend towards bizarre graphics/color combos and concentrated on refining the Green Machines. □