

KTM 520SX vs. YZ426F vs. VOR 503 vs. FC501

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# YAMAHA

## Upgraded enough to beat the DRZ400?

By the valve-lapping DIRT BIKE staff



### 2000 TECH INSPECTION

- New frame with stronger backbone
- Steering stem moved 5mm back
- Bar clamps moved 10mm forward
- Low-friction fork w/aluminum rod
- KYB shock has high-low comp. clickers
- New FCR2 TPS carb w/integral hot-start
- Quick-adjust clutch perch like YZF

*With the new WR400F, it's not whether or not it has the power to top any hill, it's how much air you're going to catch at the top. Darrin Hoefft made immediate plans to sell his XR400 after this photo shoot.*

**K**nowing that Suzuki and KTM (and, possibly, Cannondale) would be making a run on the WR400F this year, Yamaha infused most of the new YZ426F modifications into the off-road WRF. Yamaha kept the displacement below 400cc because a 426 would be illegal for the 400 class in any series. This means that the WR didn't get the 426's larger clutch and collector, nor the taller gearsets in the transmission. However, the '00 WR400F got most of the 426's chassis and suspension modifications, along with enough engine improvements to make the WRF feel like an all-new motorcycle. Not that there was anything wrong with the old one—Yamaha simply didn't feel comfortable sitting still in the ever-changing world of competition thumpers. Sit still long enough, and something new will come along and land right on you.

### GRABBING THE LOUD HANDLE

In stock form, the "loud handle" isn't exactly the right phrase, as the carb has a throttle stop that has to be cut down for the carb's slide to open fully. Power improves even more dramatically when the stock airbox snorkel and exhaust diffuser are removed. Then the WRF barks like a big dog. It has snap off the bottom comparable to an XR400R, and it quickly builds into a mad-dog midrange before revving to a top end heretofore reserved for road-racers. The WR400 is stinking fast, so fast you have to be gentle with the throttle on tight, technical trail. Uncorked, the WRF definitely has a loud handle—louder than the XR400 and DRZ400. Combine that with a wide-ratio gearbox, and the Yamaha has a scary-fast top speed.

### LIFE WITH THE BEAST

Starting is the same drill since the YZF made its debut. Cold, choke it, twist the throttle twice, use the decompressor to bump the piston past TDC, release, and kick. Hot, get the piston past TDC and kick without touching the throttle. We never had the WRF act up when using this drill. It takes a big goof to stall it, as the WRF has lots of flywheel, which helps it hook up on the worst clay mud. The new FCR2's carb is not only

# WR400F

jetted perfectly, the hot-start works well, although it's still hard to find.

Be sure to keep your quick-adjust clutch perch well lubed. After repeated dunkings and mudfests in Costa Rica and rainy southern California, the quick-adjust mechanism got hard to turn, and it's already partially hidden by the decompression lever. The clutch itself takes a lot of abuse before fading, and the WR gear ratios are excellent. No complaints here!

## SUSPICIOUS SUSPENSION

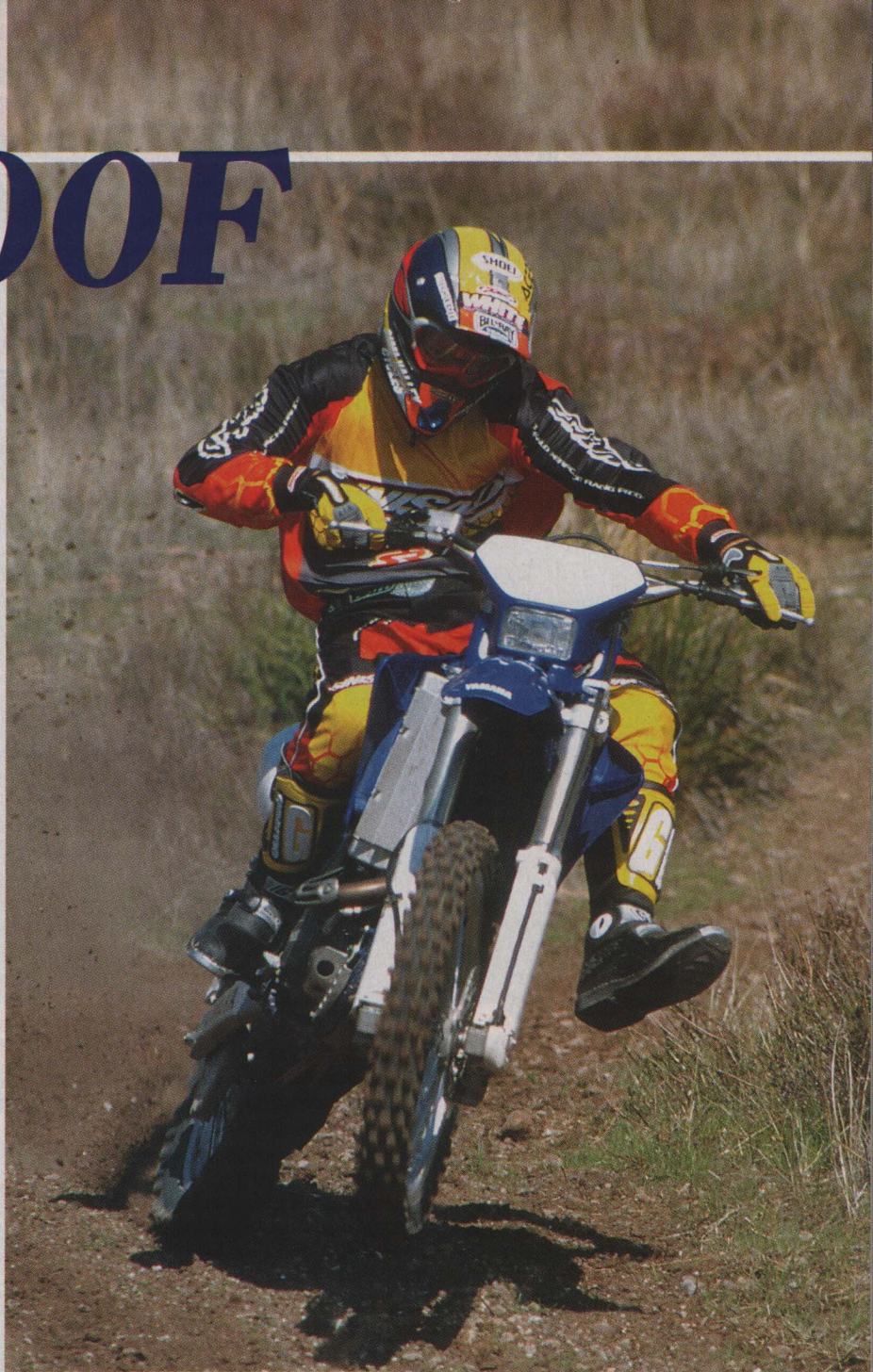
Honestly, how many of you adjust your suspension before every ride or Gran Prix? We thought so. Fitting the YZF's new shock, complete with separate high- and low-speed compression adjusters, seems like overkill. From the undulating trails of Costa Rica to the whooped-out SoCal desert, the WRF shock soaks up everything in its path, without ever messing with the clickers. We were afraid of taking a magic rear-end and making it worse. Travel is on the soft side for spending hours in three-foot sand whoops, but it's spot-on for most conditions.

Up front, the inverted 46mm Kayaba fork has good balance with the shock, and it soaks up large hits well. Action is a little sticky on the small, fast hits, so much of these impacts are felt by the rider, but it's not irritating. Weight transfer for cornering is good but could be better. Overall, the fork is good but pales in comparison to the shock.

## HALLOWED HANDLING

With a stronger frame backbone, the new WRF feels much more rigid when pounding deep sand whoops or the motocross section of an off-road race. It's a definite improvement, but the result is a rougher ride in sections where some frame flex is a good thing.

Overall, we've been pleased with the WR400's handling in the past, but there are new machines setting new class standards. The WRF is stable at speed and sure-footed in most situations. It's confidence-inspiring, even. Cornering is good but could be better. The volcano gas tank and steep forward

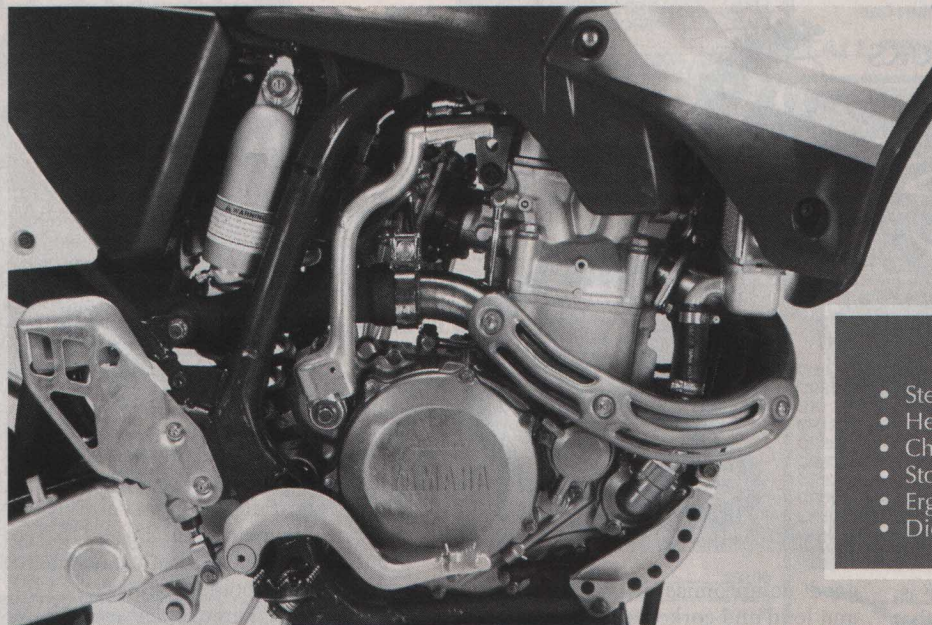


## WR400F WHEELIES

- Wide-ratio does 90 mph (w/o throttle stop)!
- Seamless power with stock pipe
- Widely-adjustable KYB suspension
- Excel rims are standard equipment
- Newfound handling with fine-tuned frame
- Go-fast GYT-R accessories galore

*Slight improvements in rider position and steering geometry make the WRF more sure-footed in turns, but it could be better still. You don't need ego-dirt to have a blast sliding the Yamaha.*

# YAMAHA WR400F



*Because the WR400F didn't get the YZF's larger clutch, its weak link is the clutch. Save it for the gnarly uphill. Starting, jetting, power and tractability are all perfect.*

## WR400F FLAME-OUTS

- Steep seat/tank junction hurts turning
- Heavy feel on technical trail
- Cheesy handlebar, no handguards
- Stock headpipe slows oil filter changes
- Ergonomics are still cramped
- Didn't get YZF's aluminum subframe

section of the seat keeps you from getting forward for corners, so other bikes now turn sharper. The Suzuki DRZ400 feels much lighter in turns, and the KTM 400 feels like a feather compared to the Yamaha. We feel this is due to the wide midsection in addition to the XR-like seat-tank junction, whereas the Suzook and Katoom are two-stroke thin.

So, going for a supermodel-like mid-section, we installed a YZF tank and seat with taller and softer seat foam from Factory Effex (see sidebar). With a thin midriff like a KTM or DRZ, the WRF takes on a whole new personality in corners and on gnarly uphill. Yamaha is looking at changing the seat and tank in the future, so we hope the new fuel cell is YZF-thin with the capacity of the current 3.0-gallon tank.

### THE BOTTOM LINE

Yamaha's WR400F was a great machine last year, and it's even better for '00. Handling is improved with the new frame and geometry, and the suspension is simply excellent. All controls are excellent, even without a hydraulic clutch. And the motor is primo. If there's a faster 400, we've yet to ride it. The WRF rips, so much so that we didn't feel the need to change the cam timing to the YZF spec (see sidebar). The bike has an excellent combination of knob-peeling power and mountain-goat tractability. Tune in next month to see if its lone drawback—old-world ergonomics—is enough to keep it from mauling the new Suzuki, KTM and Husaberg in the shootout.



**2000 YAMAHA WR400F**

|   |   |
|---|---|
| <b>Engine type</b> .....Liquid-cooled, 5-valve, DOHC 4-stroke | <b>Front</b> .....80/100-21 Dunlop 739FA  |
| <b>Displacement</b> .....399cc                                | <b>Rear</b> .....110/100-18 Dunlop 739  |
| <b>Bore &amp; stroke</b> .....92.0mmx60.1mm                   | <b>Suspension:</b>  |
| <b>Carburetion</b> .....39mm FCR2 Keihin w/TPS                | <b>Front</b> .....KYB inverted cartridge, adj., comp./reb., 11.8 in. (300mm) travel                 |
| <b>Fuel tank capacity</b> .....3.2 gal. (12L)                 | <b>Rear</b> .....KYB aluminum piggyback shock, adj. prel./hi-lo comp./reb., 12.4 in. (315mm) travel |
| <b>Lighting coil</b> .....Yes                                 | <b>Country of origin</b> .....Japan   |
| <b>Spark arrestor</b> .....Yes                                | <b>Suggested retail price</b> .....\$5899   |
| <b>EPA/CARB legal</b> .....Yes                                | <b>Distributor/manufacturer:</b>  |
| <b>Running weight w/no fuel</b> .....264 lb.                  | Yamaha Motor Corp.  |
| <b>Wheelbase</b> .....58.3 in. (1480mm)                       | 6555 Katella Ave.   |
| <b>Rake/trail</b> .....27.2°/4.6 in.                          | Cypress, CA 90630   |
| <b>Ground clearance</b> .....14.7 in. (373mm)                 | (714)761-7300   |
| <b>Tire size and type:</b>                                    |   |

# YAMAHA WR400F

## WR400F PERFORMANCE TRICKS



- As improved as the '00 WR400F is, Yamaha didn't address the areas that needed the most modification or rethinking. Handling and ergonomics are slightly improved with the new frame backbone and tripleclamps, but a bigger improvement could've been achieved with a redesigned seat and tank that gives a flatter pilot's compartment and allows us to get further forward for turns. Luckily, IMS makes a YZF-style seat and 3.5-gallon tank that redistributes your weight for \$299. Yamaha may change the tank and seat for 2001.

- We'd also like to see the handlebars moved even more forward (than the stock 10mm). For example, Answer's ProTaper top clamp gives you the option to move the bars 10mm further forward, and they're much stronger bars, to boot!

- Although the hot-start has been moved to the FCR2 carb, you still have to look down and find the red button after a stall or fall. Terrycable makes a remote hot-start adapter for the Keihin carb that relocates the hot-start button to your handlebars.

- Stock WRFs still have the throttle stop, so you need to grind 16mm off the stop to make the carb slide fully open. See *Dirt Bike*, August '98, for this mod and changing your valve timing to a YZF spec. Because the '00 has a lighter valve spring spec and crank that allows the engine to rev quicker, most pilots won't need to change valve timing unless they ride exclusively in fast desert.

- Removing the stock exhaust baffle uncorks the WR400F for competition, and a Thumper Racing insert gives a

good compromise between uncorked and loud and corked and quiet.

- Billetanium and Magura make juice clutch conversions that give more consistent clutch action in gnarly terrain.

- The usual off-road armament should be applied to the WRF for wicked woods work—handguards, disc guards, Brake Snakes (there's even a lug on the brake pedal) and heavy-duty tubes. DSP's extended waterpump guard gives extra insurance for your cooling system, too.

- Our initial test of the WR400F occurred in the jungles of Costa Rica, and we suffered no failures in the mud and water. In fact, the stock O-ring chain and sprockets held up very well to the abuse. ●



More racey than the XR400R, the WR400F Yamaha still has the comfort factor for long days in the saddle, and its coolant catch-bottle helps when in the slow-speed exploration mode. □

## CAM TIMING TRICKS

*Getting that YZ hit*

- How hard is it to change your WR into a YZ? It's harder than it used to be, now that the YZ is a 426. But changing the cam timing from WR spec to YZ spec really isn't a tough job. As we said, it isn't necessary unless you venture out on a motocross course, but here's the procedure, anyway.

**Step one:** Remove the seat, tank, top valve cover and exhaust cam tower.

**Step two:** Put the engine at TDC (I on the magneto) and check to see that the marks on both cam chain sprockets are pointing up.

**Step three:** Remove the cam chain tensioner.

**Step four:** There should be 13 chain pins between the two cams, counting from the top mark on one sprocket to the mark on the other. When you are finished there should be only 12 chain pins.

**Step five:** Lift the exhaust cam up and rotate the cam clockwise one tooth.

**Step six:** Count the links again. The magic number is 12.

**Step seven:** Put it all back together—your shop manual is a great help—and go riding. ●