

BLASTERS!

Comparison: Honda CR480, Husqvarna 500CR, Kawasaki KX500, KTM MC495, Maico 490 Spider, Suzuki RM500, Yamaha YZ490



PHOTO: RICH COX



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The open class used to be a horsepower battleground. Every season, each manufacturer tried to eke out a little more peak horsepower than its competition, because horsepower seemed to be the ticket to victory circle. The big bikes weren't really all that big—it took several years before many went past the imaginary 400cc barrier. Maybe because the early 360s, 370s, and 400s tended to be so explosive in their power delivery, nobody felt the need for larger and more frightening engines. And in-

deed, bigger, more vicious engines would have caused nothing but problems with those earlier chassis. What was needed and what we have today is larger, more docile engines. Smooth powerbands with strong bottom-end power make life easier for novices and help to hide a pro's occasional mistakes. The new big engines are not only far more manageable than their old smaller counterparts, they also make much more peak power. Even if the older bikes could have been tuned to deliver the close to 50

horsepower of today's machines, their sudden power delivery would have made that power more of a hindrance than a help. With the cushy power of the modern open-classer, you can sneak up on the horsepower peak gradually, using as much or as little as you like.

Now that all the manufacturers are building machines that are at or near the 500cc-class displacement limit, engine performance is so similar from bike to bike that research and development money is being spent in different areas.



PHOTO: RICH COX



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With all the open-classers making power at least in the mid-40s, the emphasis has switched to the chassis. All these bikes make so much power that a small peak-power advantage is far outweighed by the fine points of suspension and handling performance.

The open class isn't a horsepower battleground anymore. In fact, the engines all work so well, we decided to forgo dyno testing them. After riding the bikes, it was clear that whatever horsepower the bikes make on the pump, they accelerate equally well on smooth terrain. The real differences are in how well the bikes get the power to the ground.

To discover what would beat what and how badly, we undertook the largest open-class motocross comparison in *Motorcyclist's* history. The seven motorcycles in this test cover almost every brand in the class: Honda, Husqvarna, Kawasaki, KTM, Maico, Suzuki, and Yamaha. The no-shows in this test are Can-Am, Carabela, Montesa, and SWM.

Our testing took place at two tracks, over the course of five riding days. The first day was set aside for break-in and basic setup; all the bikes had little or no running time on them, so we anticipated some problems. We made the mistake of turning our semiresident wild man, Willy Simons, loose on the KTM for its first run since it came out of the crate. It took young Willy just three laps of easy "break-in" to completely break in the 495's front wheel. We hear that an identical wheel stayed tight and true during a European 24-hour endurance motocross; it is not a weak assembly. The crunched wheel served as a reminder that any spoked wheel, no matter how strong, has to have some bed-in time and a tightening before you can let a pro romp on it. We put an identical new wheel on the

KTM and broke it in gently. It didn't collapse and, in fact, required no further tightening for the rest of the test.

The remaining bikes seemed to have equally robust wheels, given a little tender loving care at first. After an initial tightening, spoke wrenching was a very infrequent chore. Other nuts and bolts on the bikes stayed tight throughout the ordeal. We checked often, but none of the usual sprocket-bolt and engine-mount tightening seemed necessary. Keeping seven chains adjusted and lubed proved to be a full-time job, as did air-filter maintenance—a task that was done dozens of times during the course of the test.

The Suzuki's pair of double air-filter elements proved to be the most difficult to service. To get at them you need to remove a handful of screws (both Phillips and slotted) and yank two side panels, two covers, and two plastic screens. The Maico and Husky win awards for the biggest elements, but the Maico's service opening is too small to allow easy reinstallation. The rest are fairly simple to service. The Honda's element is held in place with a wing nut, but a lot of grease around the mating surface is needed to ensure sealing. Our bike was delivered without a good seal so it ate a lot of grit before we cleaned and reinstalled the element. Both the Honda and KTM have removable subframes, which allow easy access to the airbox and shock as well.

Besides the routine maintenance hassles, there were a few major problems during the test. The first, and worst, occurred when the Husqvarna selected a permanent neutral during the second day of testing. A bolt backed out, allowing part of the gear-selector mechanism behind the clutch to fall free. Expensive bits then went through the primary gears, wreaking havoc as they passed. Repairs

were quite costly, but we weren't worried: the Husky comes with a 30-day written warranty covering the bare frame and complete engine, so the whole little disaster was covered. Husqvarna supplied us with an identical 500CR for the remainder of the test.

By this time, the Honda was beginning to run a bit ragged. The engine started missing at high rpm, apparently because of the CDI's black box; the problem isn't all that uncommon. Honda took our old bike back and supplied us with a shiny new one, which proceeded to exhibit the same high-rpm miss. The miss seemed to worsen as time was put on the bike. The CR ran well at low- and mid-rpm, but lost power and speed if wound up very tight. The Honda carries no warranty, but Honda is making every effort to get the ignition problem cleared up quickly.

Later in the test, part of the Yamaha's kickstart stop mechanism broke, allowing the lever to stick or swing too far forward. The pieces were brazed back in place as a temporary fix. Although the broken stop had been rattling around inside the case for some time, it had caused no other damage.

The only other problems were not due to any real mechanical shortcomings. One of the KTM's fork sliders got solidly dinged by a rock (or another bike) at some point. The impact was bad enough to cause a lot of binding, so the slider had to be replaced. A set of fork protectors would be a worthwhile investment for any of these bikes. The Maico made a habit of throwing its drive chain until we carefully aligned the rear wheel.

With most of the problems sorted out, the favorite bikes began to appear. All our testers picked the Honda as their immediate fave, but only by a small margin. Anyone could hop on the CR and feel immediately comfortable. Its riding position is among the best, and the suspension at both ends was voted the best by the slower riders. The fork and Pro-Link rear shock are amazingly responsive to small bumps and ripples, yet only our heaviest and fastest riders noticed any bottoming. Most of our testers weigh-in at about 150 pounds, and for them, the suspension was almost ideal as delivered. Our pro-level rider worked the bikes the hardest and admitted a slight preference for the Suzuki's fork. He ranked the Honda's rear suspension farther down the list, behind the other three Japanese bikes. He tends to like firmer settings; the CR's Showa shock could probably be adjusted to his liking. All our riders agreed that the differences in suspension action between the best and worst bike were surprisingly slight.

The Honda also scored very high marks for cornering. It was judged second to the Suzuki in its ability to carve through turns precisely. The Honda takes very little effort to bend into a corner and holds its line easily. It lets you use all of

the track, so you can go through on the flat or on a berm. The only drawback to the quickness is slight instability at high speed on rough ground. A few riders experienced some handlebar wagging, which could have been dialed out by sliding the fork tubes down in the triple-clamp.

When running cleanly, the Honda has one of the strongest engines. It and the Kawasaki both seem to have less flywheel inertia than the others, so they deliver more immediate power when the throttle is whacked open. None of our riders felt that either was too short of flywheel. Our testing was done on tracks that offered excellent traction, though; a slippery surface might give a Kawasaki or Honda rider an occasional surprise. Like the rest of the bikes, the Honda pulled hard right from idle, and it made all the power our best riders could use—when it wasn't suffering from its ignition problem. Even with the ignition wheezing out, our intermediate and slower riders could maintain their usual pace; proof that all the open-classers make more

power than most riders can put to use. Only our expert and pro noticed the Honda's shortage of power.

The CR's five-speed gearbox and clutch were favorites too. The Honda doesn't miss shifts, and the action is smooth and positive. The clutch pull is light, and we encountered no clutch overheating problems. About the only critical area where the CR480 wasn't at the top of the scoring was in the braking department. The stoppers at each end got the job done without difficulty, but weren't spectacularly good.

Second place in the early balloting was debatable. Our pro felt the Suzuki ran in a dead heat with the Honda (when it was running well). Our expert thought the Husqvarna breathed down the Honda's neck for second place. The slower riders had a warm spot in their hearts for the Kawasaki. The Yamaha also ranked very high on everyone's list. In fact, it was very close any way we figured it. The only thing everyone could agree on was that the Maico and KTM were at the back of the pack. In both cases, slightly awkward

riding positions and less responsive suspension action were conspiring to keep the bikes out of the group of front-runners. The faster riders could get around the track as quickly on the KTM and Maico as on the other bikes, but they found them harder to get used to and more tiring to ride.

The Kawasaki, like the Honda, is a bike that requires almost no fiddling to work up to its full potential. Most of our riders were pleased with the standard suspension settings. We eventually raised the fork oil level to gain more bottoming resistance for the big gravity dips at one of our test tracks. The Uni-Trak rear suspension has a slightly firm feel, though it is never harsh or unresponsive. The KX hooks up excellently, and the bike tracks predictably through all types of terrain. Though the Kawasaki isn't particularly light, it has a short-coupled, responsive feel. The distance from the front of the seat to the handlebar is unusually short for an open-classer; it's more reminiscent of a 125. Most of our riders really liked the layout, since it allows you to get for-

HONDA CR480R

It's 99 percent new

The '83 CR480R appears, at first glance, to be a subtly reworked '82. That first glance, we're here to tell you, has nothing to do with the reality of the situation. The '83 is a 100 percent new motorcycle, from the reworked frame geometry to the new five-speed transmission. The grips, handlebar, and gas cap may be the only parts comparable to the '82's pieces.

We might as well start at the front; the list of changes is a long one. The fork still uses 43mm tubes, but it's made by Showa, not Kayaba, this year. Last year's Kayaba unit provided four stages of compression-damping adjustment; this year's has 8 settings, with the adjusting screw at the bottom of each slider. The tubes' walls are thinner for reduced weight, but strength has been kept up by advances in metallurgy.

The dual-leading-shoe front brake (like the rear) is narrower and uses a linkage which gives the rider greater mechanical advantage to compensate for the loss in swept area. The reason? Weight, of course. Extraordinary measures have been taken all over the bike to pare off *avoirdupois*; the front brake-cable holder on the backing plate, for example, is now aluminum (steel sufficed last year). Fragile? Yes. Worth the extra care required in maintenance? Yes, if your racing is serious.

The wheel hubs are of a new straight-pull-spoke design. The spokes have just enough bend to keep them from spinning during tightening. The rims are also new. They use a special "jaw" design to keep the tire from spinning when running at low pressures, though rim locks are still used to make sure

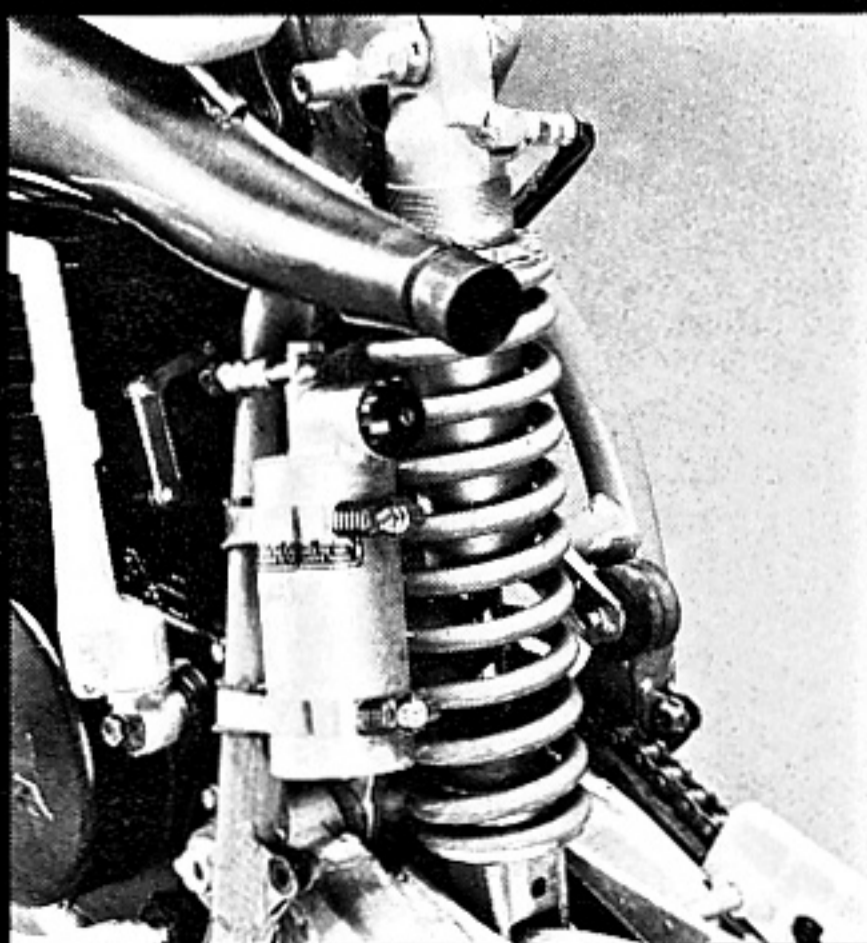




PHOTO: KATHLEEN DANITINI

ward in the corners to steer the bike around. Surprisingly, the shortest rider felt a little crowded on the bike. The steering is quick and responsive. The KX has no tendency to push the front end in flat corners, yet it doesn't seem twitchy on berms or on fast, bumpy straights.

Like most of the other bikes, the KX required just a little fiddling with the carburetion to get the engine running crisply all the way through. Once set up, the only substantial variable affecting carburetion on a given day was the condition of the air filter. Any time a bike started feeling a bit fat on the bottom, we knew it was time to clean the filter again. The Kawasaki's average-sized element let it run for a reasonable period before the carburetion started to suffer. Other than occasional hard starting, the KX's engine worked almost ideally. As is the norm with these bikes, tremendous low-end power is always available, so a lot of frantic downshifting isn't required at the entrance to every corner. The KX is one of the quicker revvers among this group; power delivery is immediate, which is helpful



a flat tire will stay on the rim. Even the tires were selected partly on the basis of their weight; the new Bridgestone M33 (front) and M32 (rear) skins are 360- and 170-grams lighter, respectively, than the tires used last year. The Honda factory riders often used these Bridgestones for racing on hard tracks last year.

Frame geometry is substantially different; the head angle has been pulled in from 27 degrees, 10 minutes to an even 26 degrees, and the triple crown offset has been reduced a couple of millimeters to 22. The steering head has been moved back in the frame. All these changes point to quicker steering, with increased weight poised on the front wheel for more positive cornering. The rear section of the frame is now bolted, not welded, to the main section for easier access to the rear

shock and airbox.

The cylinder, piston, and intake and exhaust systems are left with the same dimensions as last year's, but the transmission is now a five speed. The '82 CR250R, with its five speed, shared the basic engine cases with the '82 CR480R, so it would have been logical for Honda to use the same cases and a beefed version of the 250 gearbox in the new five-speed 480. Not Honda; the company's engineers opted for the expense of designing completely new cases and a new gearbox to handle the power of the big bore.

The clutch is also new. Its plates are thicker than those used last year, and there's now a damper built into the hub to lessen shock loads throughout the power train.

The new seat is, of course, blue; it appears that a fabric manufacturer in Japan (and, presumably, a subsidiary in Sweden) is having a sale on blue vinyl for motocrosser seats this year. The suddenly popular cantaloupe-protector feature appears on all the Honda motocrossers in '83. (One is tempted to wonder how motocrossers of the past managed to keep their family lives on course without these marvels of modern safety science.)

The plastic tank now carries a substantial portion of its fuel below the frame backbone tube to make the CG as low as possible.

The suspension/swingarm assembly has a family resemblance to those used in years past, but all the pieces are new. The Pro-Link system's ratios have been revised, by subtle juggling of the linkage pieces' dimensions, to yield a gentler rate-rise curve as travel is used. Early Pro-Link systems were very soft in initial travel, then they stiffened dramatically in the last two or three inches. The '83 system uses a longer shock absorber acting at a less radical leverage ratio. This yields a curve that starts its rate-rise sooner and accomplishes it over a much longer portion of the total travel.

Early Pro-Link shocks were not known for their fade resistance—or their oil retention. This year's shock is all-new, constructed of

aluminum instead of the steel used in '81 and '82. If the shocks don't hold up better than previous editions, Honda has been assured that some heads are going to roll at Showa, the Honda shock supplier. The new system uses aluminum linkage to replace the earlier forged steel units; weight has come down 885 grams in the new setup.

Honda has finally seen fit to give us compression- and rebound-damping adjustment; there are 12 (or so) clicks of compression damping located on the shock reservoir and 20 clicks of rebound, selected with a knob at the bottom of the shock itself. Some units may come through with more stages of adjustment than Honda advertises, but the softest and stiffest settings will be the same on all bikes; production tolerances make it possible to get a CR480R or 250R shock with as many as 20 compression-damping clicks or as few as 12.

Honda designers spared no expense in cutting off the pounds; by their figures the CR480R weighs in a scant nine-tenths of a pound over the AMA weight limit for the class. Astounding weight-saving tricks have been pulled all over the bike; Honda took a long, hard look at the strength-to-weight ratio of every part before it was bolted to the bike. Most steering-yoke tubes on motocrossers are made of mild steel; '83 Honda CRs use aluminum. Fuel-tank brackets are also aluminum on Hondas this year. The '83 square-section swingarm looks much like last year's, but it's actually made of slightly thinner stock.

Japanese motocrossers are by far the most sophisticated pieces of racing machinery ever offered to the public for under \$3000; Honda's changes to the CR480R show just how far a manufacturer has to go these days to stay on top of the motocross weapons race. The manufacturers are running at a breakneck pace just to maintain their positions in the dirt-bike wars, and Honda obviously has no intention of being left behind.

M

HUSKY 500CR

Just a few months old and
already revamped

Husky has long been known as a strong, solid, silent company that makes strong, solid, and conservative dirt bikes—bikes that, year after year, just happen to be the equal of all the flash and techno-trickery we see pouring out of Japan. In the open class, especially, where predictable handling and manageable power delivery count for more than shrieking top end, Huskys have always been near the head of the pack.

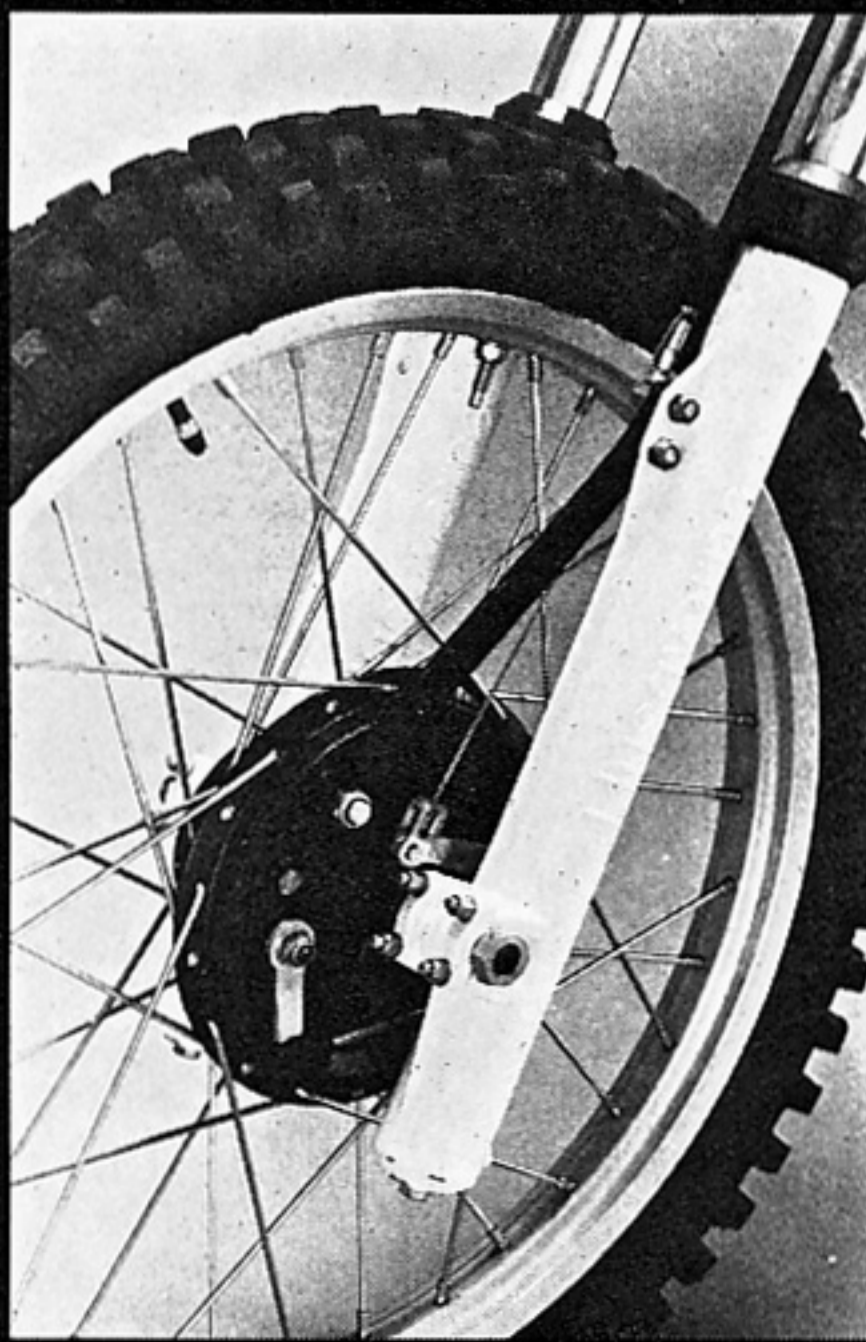
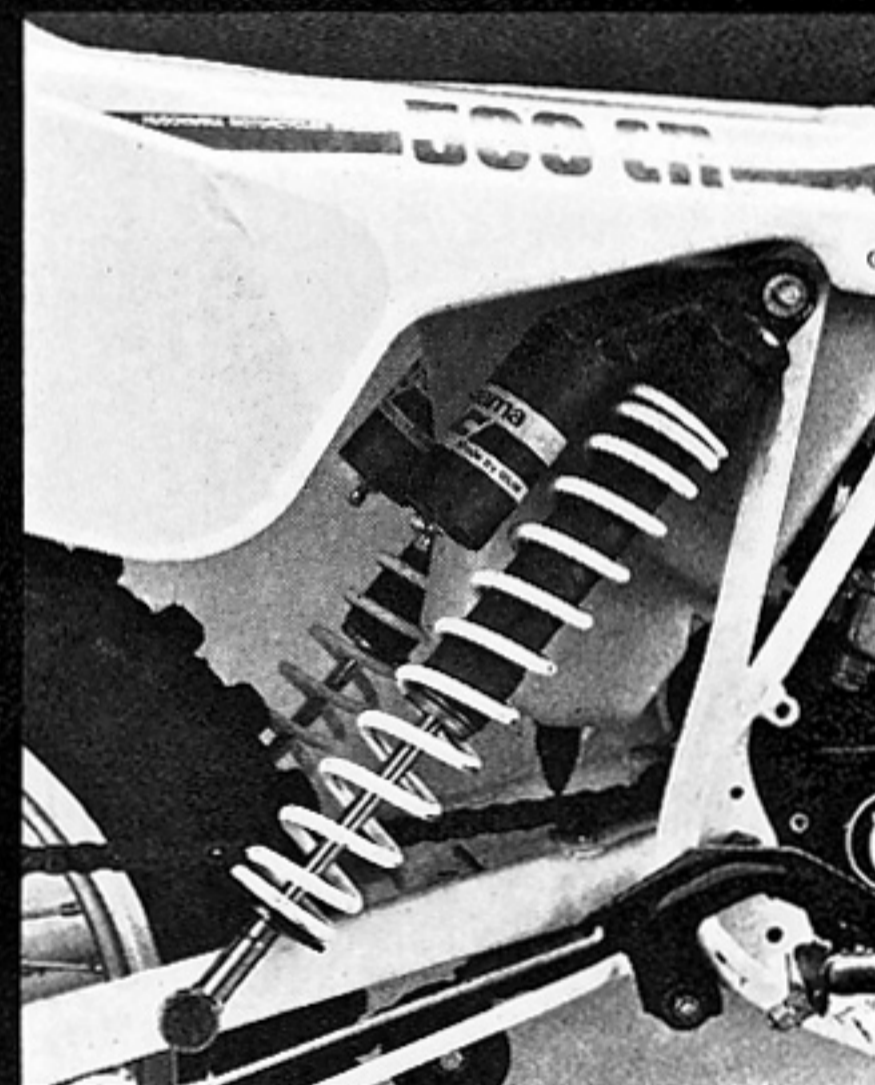
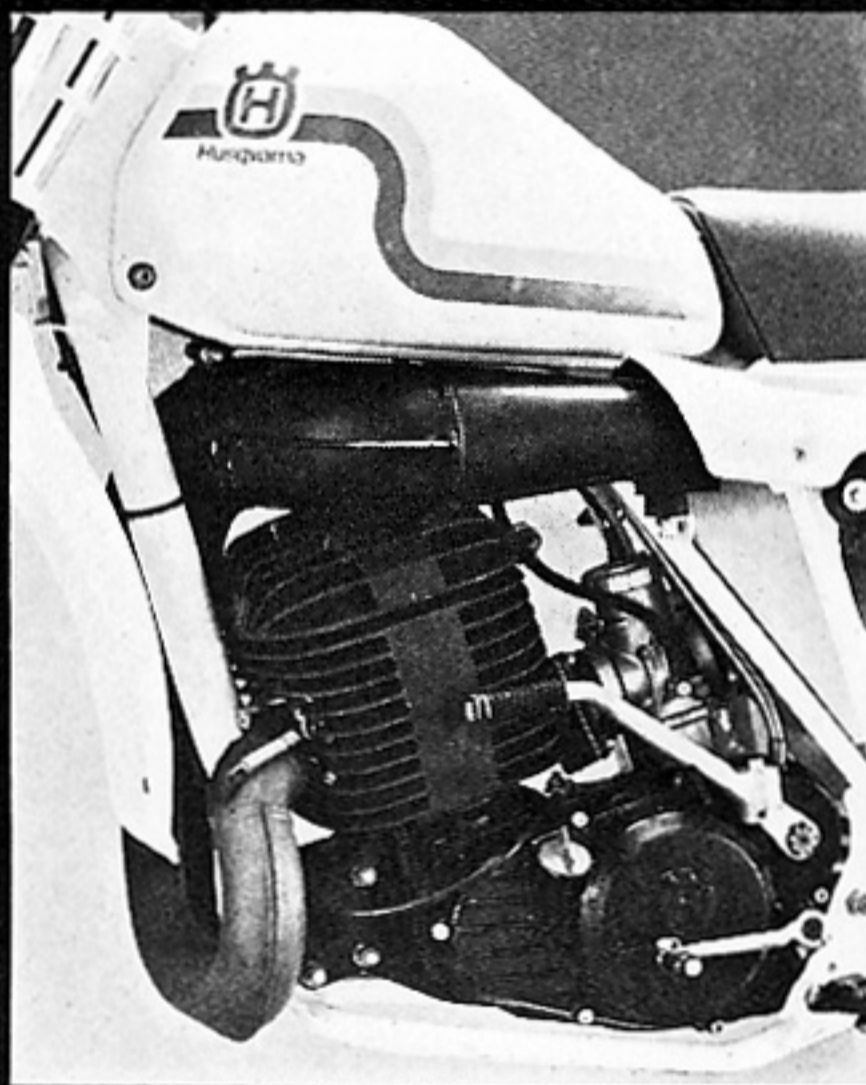
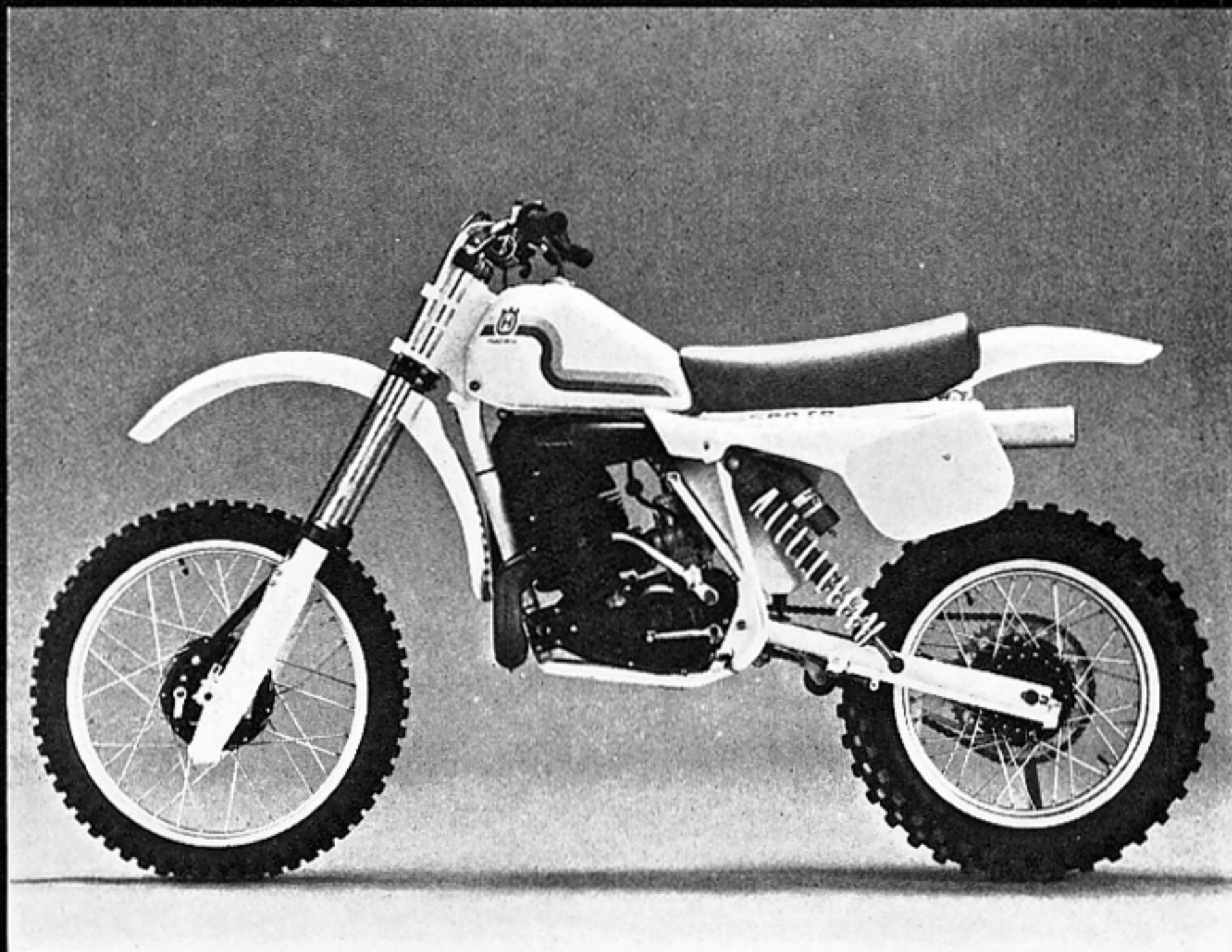
The '83 Husky line can be described in one word: white. The new machines have shed the age-old tasteful-tank-color-with-aluminum-knee-panel design in favor of some of the wildest new-wave graphics ever seen on motorcycles.

Husqvarna Motorcyklar AB introduced the 500CR late in the '82 model year, and yet here we are, a few months later, with an '83 500CR that features an all-new chassis and a slightly revised engine. Husky has, of course, stuck with its twin-Ohlins rear suspension system in the face of unanimous single-shockery from every other serious motocrosser manufacturer; the system offered on Husky's '83 models incorporates a number of new twists on a basic design that was created some 70 years ago.

The new layout uses a more radical lay-down angle than before, and the frame has been redesigned to accommodate the new shock position. The old frame's vertical rear tubes swept back from the swingarm pivot to the upper shock mounts, but the new frame's tubes curve forward, making room for a longer shock. The distance from each of the shock mounts to the swingarm pivot remains equal, but the new angle makes the leverage ratio decrease from a soft 3.8:1 in the first inch of travel to a stiffer 2.2:1 in the 12th inch. To augment the new rising-rate geometry, there's also a new progressive-wound spring replacing last year's pair of stacked straight-rate springs. The shocks themselves have a new anti-bottoming compression-damping valve; a second piston at the bottom of the shock shaft slides into a tapered sleeve at the bottom of the shock body, increasing compression damping as the last inch or so of travel approaches. This makes bottoming a much gentler process and eliminates the need for the urethane foam bump stops usually found on Ohlins. The concept isn't new; a similar arrangement has been built into most Japanese forks for years, but it's a new wrinkle in shock design.

Huskys are famous for slow steering and rock-solid stability on rougher tracks, and the '83 500 should provide all of that with its chopperesque 30-degree head angle and six inches of trail. The new chassis has the engine moved forward and upward for a little more ground clearance and better traction at the front wheel; with the torque of the 500 motor, the rider is going to need all the help he can get to keep the front of the machine near the ground.

The 488cc engine is fundamentally identical to the '82 model's; the major difference is the 40mm Mikuni on the '83 replacing the



44mm instrument fitted last year. The gear-box on the CR is still a four speed, but the venerable six speed of the 430 engine can now be had with the desert-racing-oriented 500XC. The 500 engine has the same 86mm bore as the 430; the extra displacement comes from a 10mm increase in stroke, to 84mm. The longer stroke necessitated a new iron-sleeved aluminum cylinder, but the cases are identical to the 430's.

There are changes in both wheels of the new 500. The rear is now an 18-incher; after years of Huskys with 17-inch rears, the Swedes have finally given in to the increased availability of 18-inch tires. The front brake is a new double-leading-shoe design coupled to a shorty Magura two-finger lever.

The 40mm fork assembly is identical with that issued on the '82 500; it incorporates damper rods with a more severe taper than those found on other '82 Huskys and so necessitates different oil and a higher oil level in the tubes. The new damper rods will fit into older legs; Husky is usually careful to see that new parts can be fitted to older machines. To decrease stiction, the new fork uses seals without wipers. **M**

when traction is plentiful. Some riders would have liked a bit more flywheel or at least a more predictable rear brake to prevent accidental engine killing while braking into slow corners. This difficulty isn't unique to the Kawasaki, and given time, a rider could develop a more sensitive right boot. The disc front brake met with mixed reviews, though everyone felt it got the job done. The brake has a solid lever feel and doesn't fade. The aluminum master cylinder and braided steel

hose should be resistant to damage, more so than the KTM's plastic reservoir and rubber hose.

The Husqvarna has a very different personality than the Kawasaki, but most of our riders liked it as well. You sit on top of the Husky, not "in" it as you do on the Japanese bikes. The Husky is tall, but after a short acclimation period, the height didn't give anyone problems. The 500CR steers more slowly than most of the bikes, but that doesn't keep it from get-

ting around flat corners easily. The front tire holds its line securely and predictably. Like the Yamaha, the Husky takes slightly more effort to bend into a corner than the other three Japanese bikes. It gets through bends more easily than the KTM and Maico, however, thanks to its superior suspension action.

The Husqvarna's Ohlins rear shocks kept the wheel on the ground as well as any of the single shocks. There was no harshness in the shock action, but it was

KAWASAKI KX500

Big Green returns with
an all-new 500

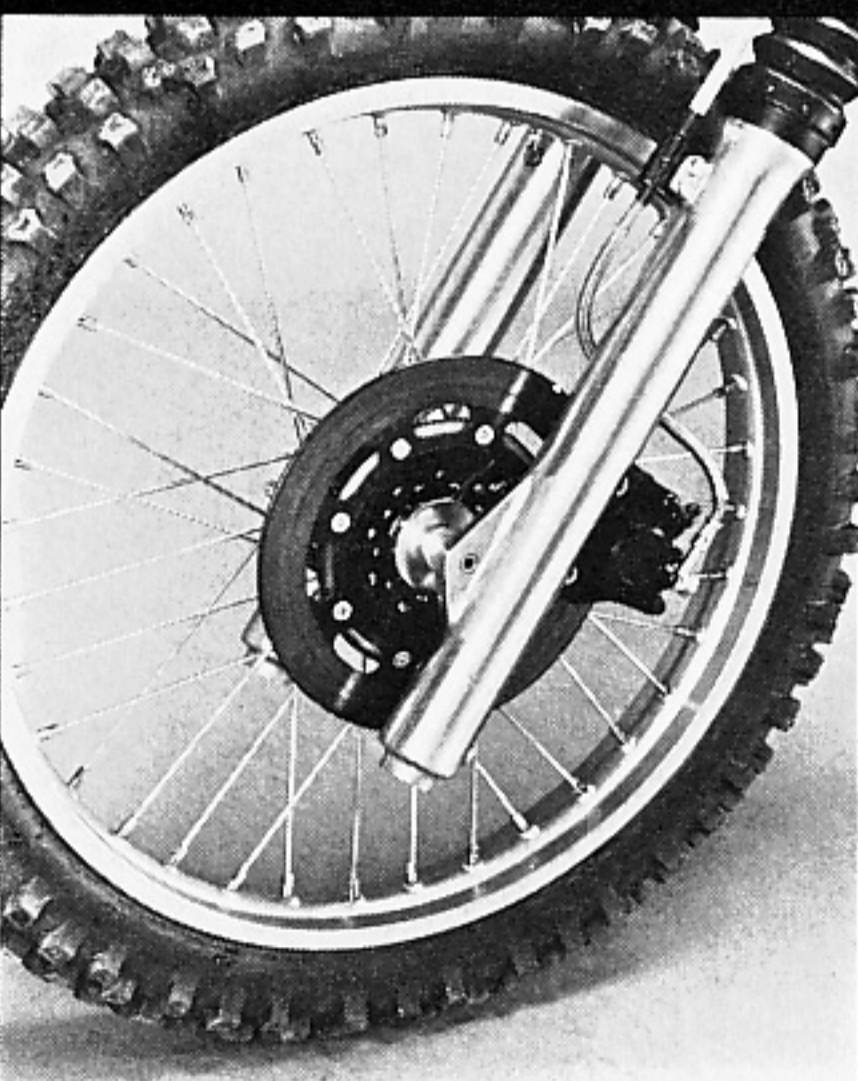
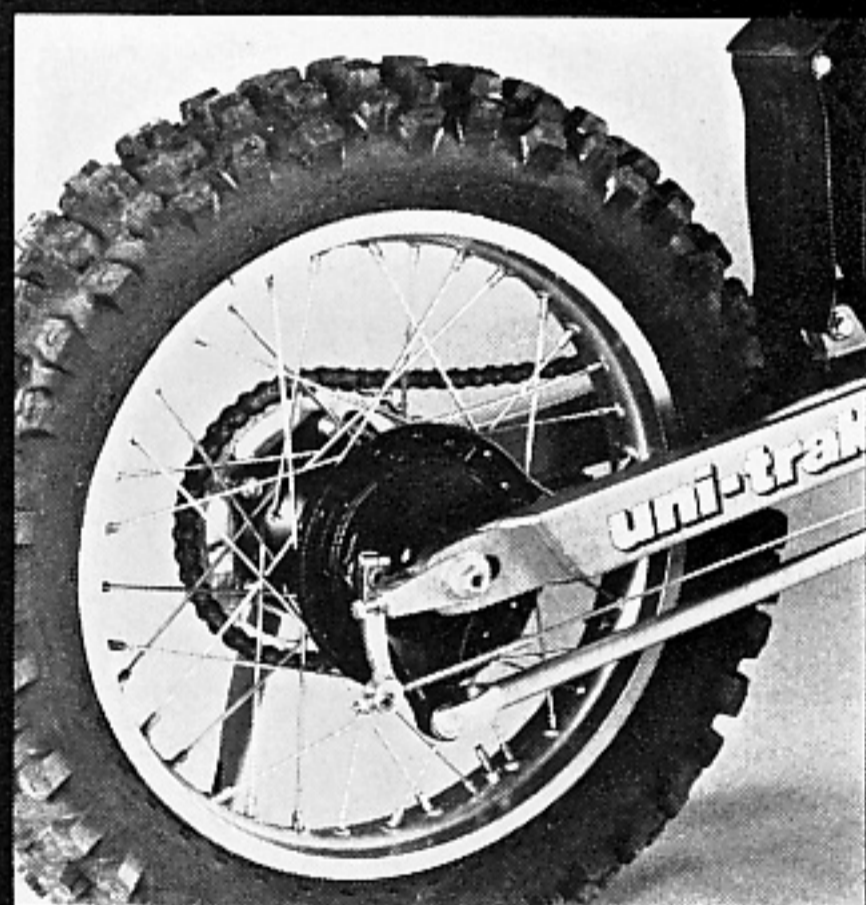
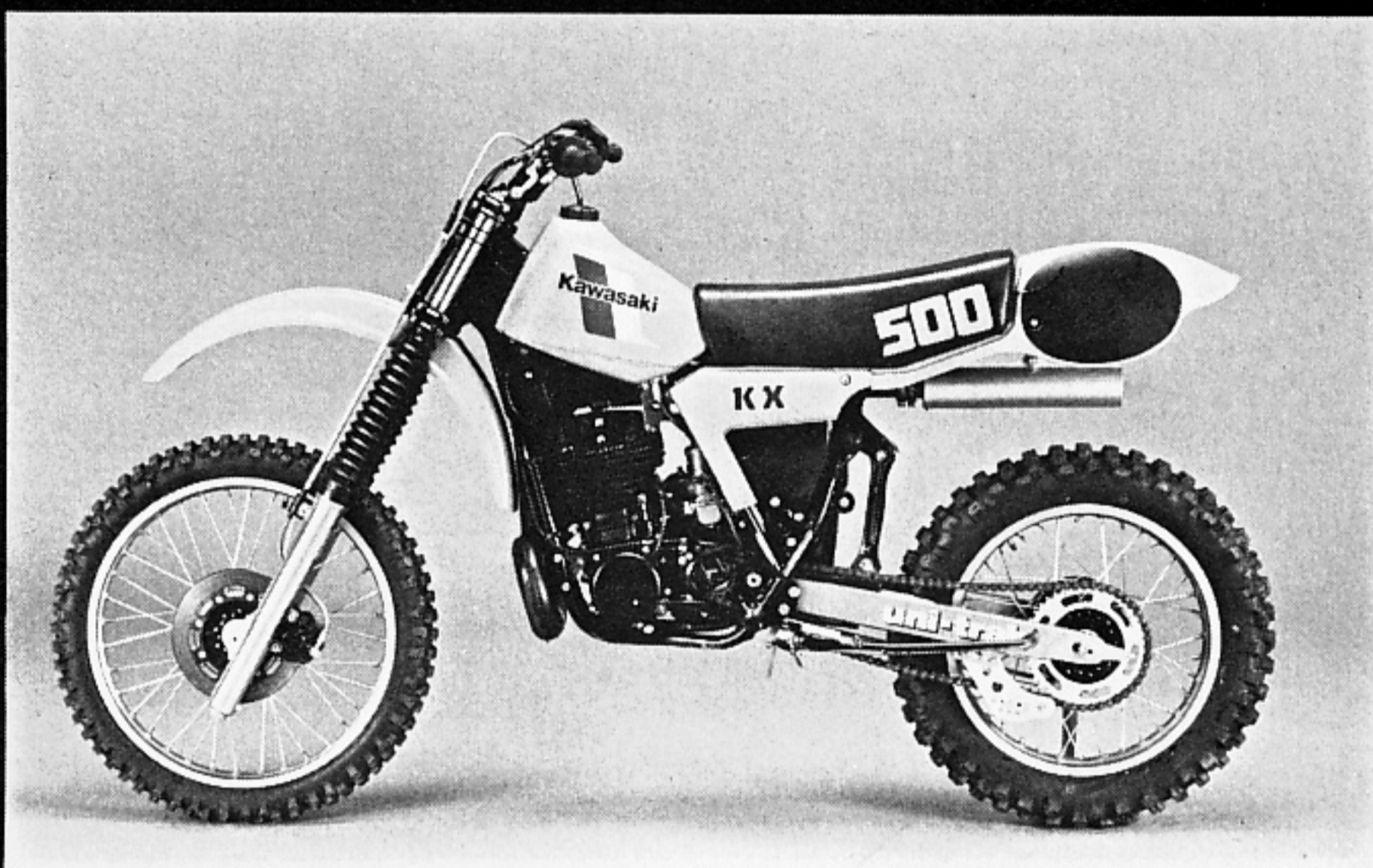
From a no-start in the '82 open-class wars, (Kawasaki offered no big-bore motocrosser), the Big Green has clearly established the position of its ditchdiggers in '83; the new KX500 is a well-thought-out, competitive weapon. Its chassis is very close to the '83 250's, with minor gusseting changes to support the extra weight, power, and vibration of the new motor. The 499cc motor is totally new; it's reported to be 4.4 pounds lighter than the '82 KDX 450s and much, much faster.

Rear suspension is the new single-link Uni-Trak; instead of the two steel links that connected the swingarm to the bell crank in the past, there's now a single aluminum forging mounted on the crosspiece of the swingarm. The new system uses a longer, lighter shock than did last year's 250, and leverage ratios are now less radical to allow a softer spring and correspondingly softer damping in the shock. Rebound damping is adjustable; there are four possible positions on the shock-mounted dial. The '83 KXs have a new, light box-section aluminum swingarm, and steps have also been taken to pare off unsprung weight in the rims and the rear hub. The rear brake arm is now aluminum. The front disc, impressive last year on the 125, comes with a bigger caliper on this year's 500, providing more stopping power.

The front fork is also new. It's a 42mm unit from Kayaba which uses a spring-loaded compression-damping release valve to smooth fork action over steeper, harsher bumps; the system is similar to that used on Yamaha-mounted Kayabas.

Compression damping is adjustable; a screw at the bottom of each leg varies the preload on the compression-damping valve spring.

As we said, the engine is new from the ground up; it has very few parts in common with previous big-bore Kawasakis. It's air-cooled, of course, and uses a six-petal reed valve in the intake manifold. Besides the usual reed-valve porting arrangement (bridged intake port, bridged exhaust port, and four transfers), the big KX has two boost ports running from the floor of the intake tract to the crankcase. Two additional Boysen-type boost ports from each side of the intake track lead directly into each rear transfer tunnel. The carburetor, a 38mm Mikuni, has a new trick: the top of the spray nozzle has a 1.2mm slot cut in it for better atomization of



fuel at low revs; Kawasaki people say the slot, designed in collaboration with Mikuni engineers, adds a lot to low-end power.

Transmission is a five speed; after a year of four speeds, the trend may be moving back toward the more flexible fives. Since relatively few open-classers spend their whole lives on real motocross tracks, five speeds seem to offer considerably more value to the average big-bore buyer.

The seat, fenders, and gas tank of the 500 are stolen directly from the '82 250, and that's no apology; the seat-and-tank junction is so narrow that the rider can easily slide up to put all the weight he wants on the front wheel. That can be a real comfort when it's time to stuff the bike into a tight and slippery corner.

With its smooth, torquey new motor, state-of-the-art suspension, and light new chassis, the KX appears well prepared to live through *Motorcyclist's* all-out trench warfare. **M**

KTM MC495

The Teutonic Tiger learns manners

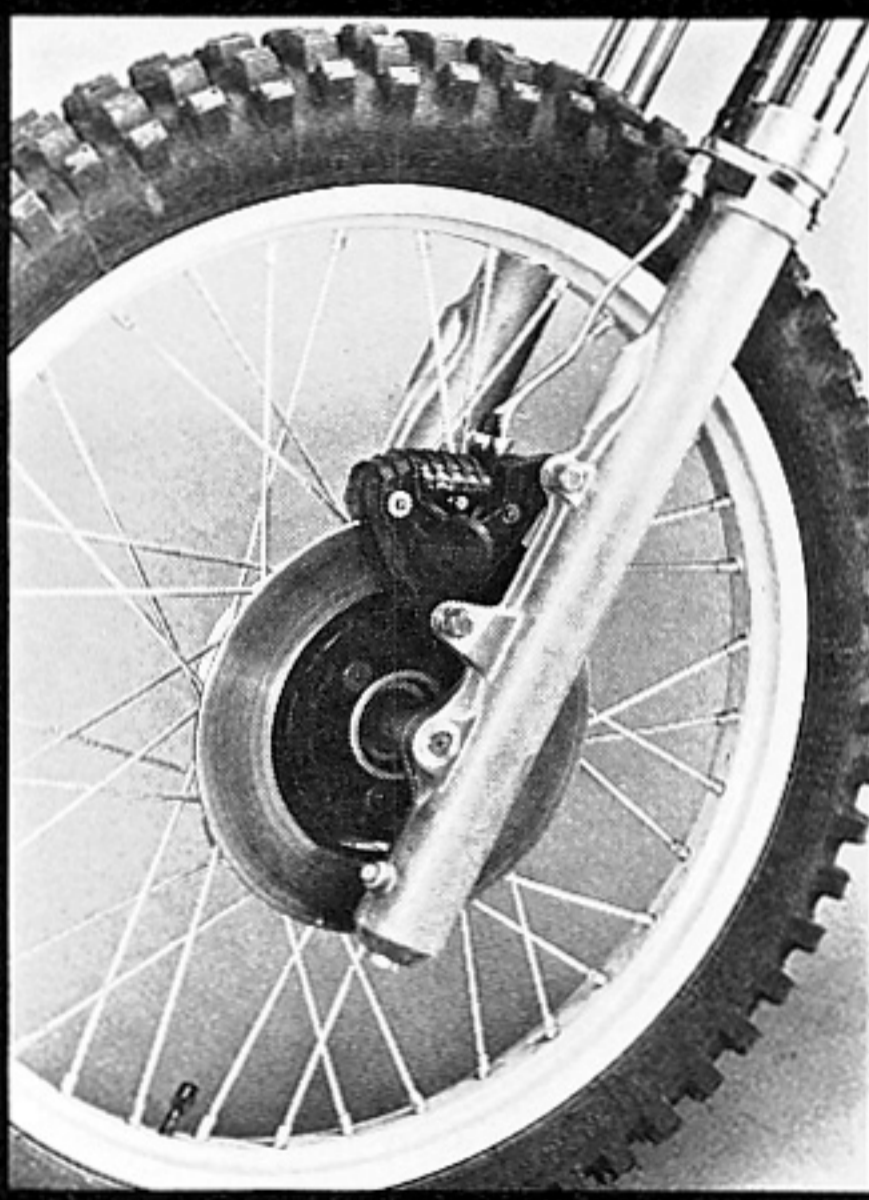
KTM's potent 495 is known primarily for its awe-inspiring power. For '83, the Austrian firm's engineers have done their part to put the power to the ground more manageably than before. The chassis is completely new, with a more progressive Pro-Lever rear suspension system, revised geometry, a more rigid, smoother fork, and a lighter, stiffer frame. There's a new front disc brake, along with enough engine and transmission changes to make the '83 big-bore KTM a giant step beyond what you could buy last year.

The new frame has thin-walled, 28mm chrome-moly tubes in place of the 24mm tubes used before, and the frame configuration has been juggled for better high-speed stability. The steering head has been moved to the rear to get more weight on the front wheel, and rake was pushed out half a degree (from 27.5 degrees to 28 degrees) to eliminate the head shake some riders experienced on the '82. As before, the rear section of the frame is easily detachable for easier shock and air cleaner maintenance. The mounting points for the Pro-Lever linkage system were moved on the existing frame pieces to modify the suspension action; the softest leverage ratio, at full extension, is softer than before, but the stiffest ratio, at full bump, remains the same. The shock on the MX version is a White Power Super Adjuster, with 12 stages of rebound damping and 24 stages of compression damping. The swing-arm is made of heat-treated aluminum; it reportedly takes a full 48 hours to treat each swingarm to KTM's specifications.

The front fork is a 42mm Marzocchi item made to KTM specifications. Last year's 40mm Marzochis were a two-bushing design, much like Honda's early dual Syntallic units, but KTM engineers found that the dual bushings were causing hydraulic lock when oil became trapped between them. The new 42mm legs have only one bushing, in the top of the slider, and this is said to reduce stiction and hydraulic locking substantially.

The basics of the 495cc engine are the same for '83, but carb jetting and pipe configuration have been juggled to smooth the KTM's famous light-switch power delivery at low revs. The engine displaces a true 495cc, with a wildly oversquare 92.5 x 74mm bore and stroke.

The carb is a new 40mm magnesium Bing, which has a wider intake bell than before to slow air velocity at small throttle openings. The carb is now more accessible; the frame tube that used to hide the carb is gone. Both the top and the bottom of the Bing are held on by spring-loaded clips; rejetting can be



accomplished with a pair of pliers and a pair of fingers.

The MX version of the 495 is a four speed for '83, though the five speed will be available in a cross-country version, complete with a Fox Shock valved for high-speed running. The gearbox has been modified for easier shifting; the dogs and slots are undercut only three degrees now, from five degrees last year. The clutch has been redone also; the hub is now shaped to hold the plates flatter, allowing softer springs to act over a greater area of actual contact between the plates. This results in a substantially lighter pull at the lever.

The new front brake draws immediate attention at trackside. It's an unshielded hydraulic disc actuated by a small aluminum master cylinder on the handlebar. The advantages of a disc are many; the design is less susceptible to fading or 'water lubing' and should be just the thing for those 100-mph pickup-truck-dodging runs through Baja California. **M**

firmer than the Kawasaki's, making it a bit more tiring to ride. We lightened the shock preload by two notches for our relatively light riders. After raising the oil level in the front fork, the bike worked quite well in rough terrain. The fork had plenty of bottoming resistance to handle the

gravity dips and was cushy in the stutter bumps too. With these minor suspension adjustments, the Husky had a very balanced feel. The chassis was stable, and geometry changes were kept to a minimum, resulting in predictable handling.

The bike's large stature isn't conducive

to really tossing the machine around, but that didn't seem to slow down our better riders. Though some people noticed the machine's extra width near the upper shock mounts, the riding position is still comfortable. The 500CR vibrates more than the other bikes, but it isn't noticeable

or uncomfortable.

The Husqvarna is the least powerful (when the Honda is running as it should). As you would expect, it pulls from idle strongly, but has less midrange power than the others. On top, it gives up little or nothing to the competition. The 500CR is the only bike that has any problem pulling the jumps between gears. With its wide-ratio four-speed transmission, it needs to be wound up fairly tightly in second and third to really accelerate hard after the upshift. If you short-shift it, you'll

catch the next gear in the lower mid-range; it will accelerate briskly from that point, but not with the wheel-spinning ferocity of the others. This was only really apparent on our hilly high-traction course. On flat or slippery circuits, the situation goes unnoticed. The slight bogging after an upshift doesn't seem to slow the bike down significantly. In fact, it covers the ground just as quickly as the others. The Husqvarna also requires a more deliberate shifting foot. Speed-shifting doesn't work consistently, so you must

back off slightly at each upshift.

Like the other Japanese machines, the Suzuki was pretty much a hop-on-and-ride affair. It felt right and worked right. Its riding position was generally thought to be the best. It was easy to move around on—that's important, since the bike is quite sensitive to rider position. The bike felt short and low. This, combined with the sharpest steering characteristics, made it the best cornering bike of this group by a very narrow margin. Direction changes and corrections required only

MAICO 490 SPIDER

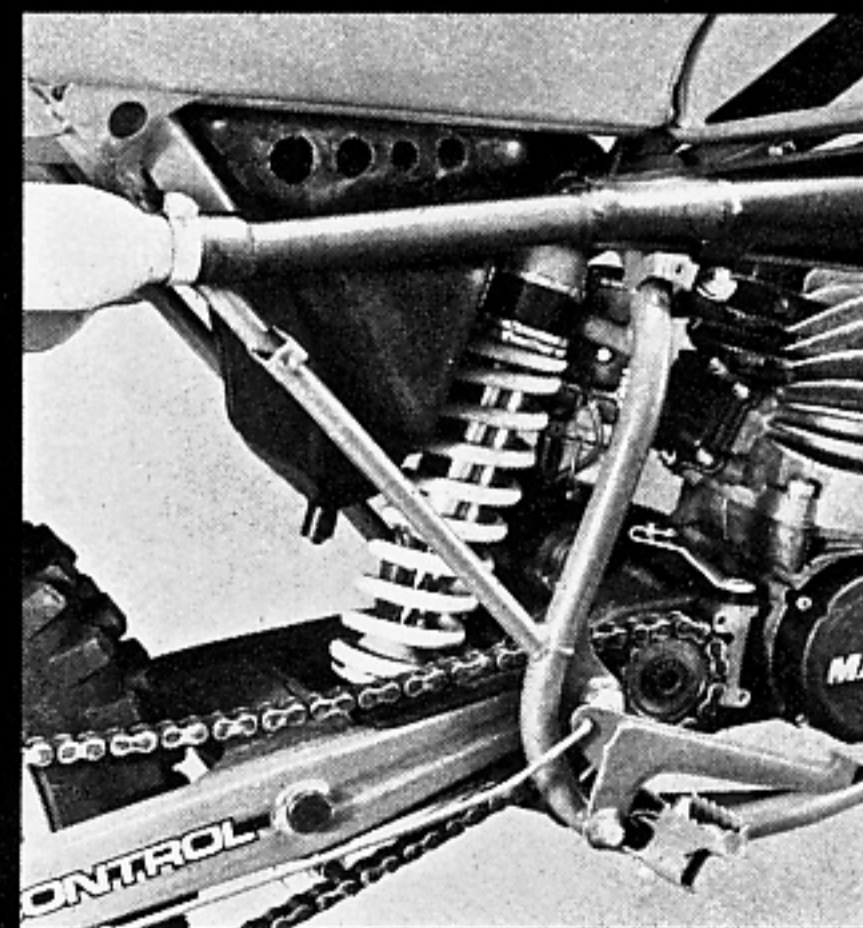
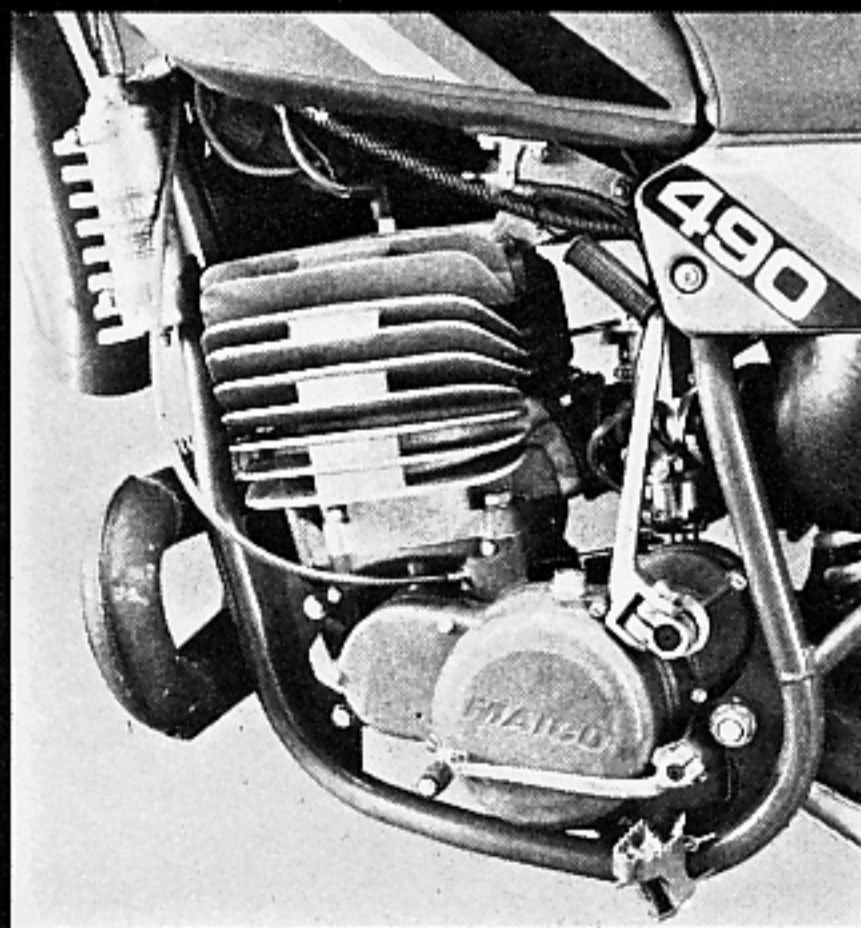
Lighter, quicker, smoother, prettier

The Maico name is nearly legendary in the history of big-time privateer motocross; when a top-name factory rider lost his high-buck factory ride, he often wound up riding the next season on a Maico. The German manufacturer has been known as a company that offered its real, honest-to-God works bikes to the public the season after they had been raced, long before the Japanese started their annual radical redesigns.

The 490 Spider is a completely new design; everything from the fork to the rear suspension system was drawn on a clean sheet of paper for this year. The 42mm Maico-manufactured front end has new progressively wound springs to match the new rate-rise of the revised Dual Control rear end. The frame is a new design, with a single front downtube branching into a double cradle under the engine. Large, but light, gussets are all over the machine, and special attention has been paid to the angles between each of the tubes; the result is, according to Maico, less weight and lots more strength.

The new rear-end linkage bolts to a new swingarm, and the arm is steel. It tapers from the Dual Control pivot toward each end, much like the early Honda Pro-Link swingarms. The linkage is another chapter in the saga of the Pro-Link concept as well; we see so many different under-the-swingarm linkage systems now, it's a full-time job just to tell them apart. The shock is an externally adjustable Ohlins unit, and rebound damping can be changed by twisting a dial on the bottom of the shock.

The big news in the engine bay is the demise of the much-hated primary chain; the new primary drive is by straight-cut gears. The arrangement allows the engine cases to be much more compact, eliminates chain replacement, and saves some weight at the expense of a small amount of horsepower. The intake tract is now a full-reed setup, with both the intake port and the crankcase fed through one large reed block just downstream of the carburetor. Maico engineers say the new cylinder greatly enhances the already strong low-end power characteristics; the factory's GP riders claim the first gear (in the four-speed box) is never used in a race. Great pains have been taken to lighten the crankshafts of both the 250 and the 490 for better throttle response and less overall weight. The cylinder is undersquare; bore is 67mm, and stroke measures 70mm.



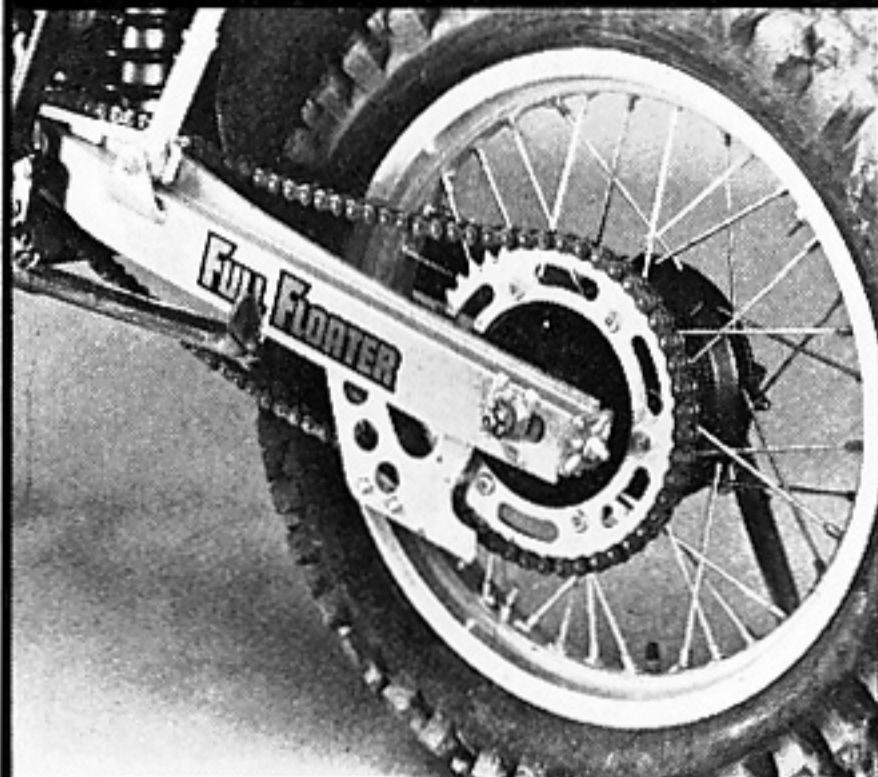
The engine has been strengthened to withstand the rigors of a full season of competition. There are larger bearings all through the unit, and the cleanliness of design makes the new power plant look almost, ahem, Japanese. The clutch has a new rubber cushion on the basket to smooth the power pulses through the drive train and lessen shock loads from the crank all the way to the ground.

Nordisk rims make the wheel assemblies stronger and lighter than before, and the straight-pull rear brake hub is said to be half as heavy as the piece it replaced.

With all the changes inside, the new Maicos just had to have new cosmetics; a red safety seat, cleaner side panels, and a lighter overall look signal that Maico is serious about meeting the other makers head-on in what used to be its exclusive turf, the privateer's open class. **M**

SUZUKI RM500

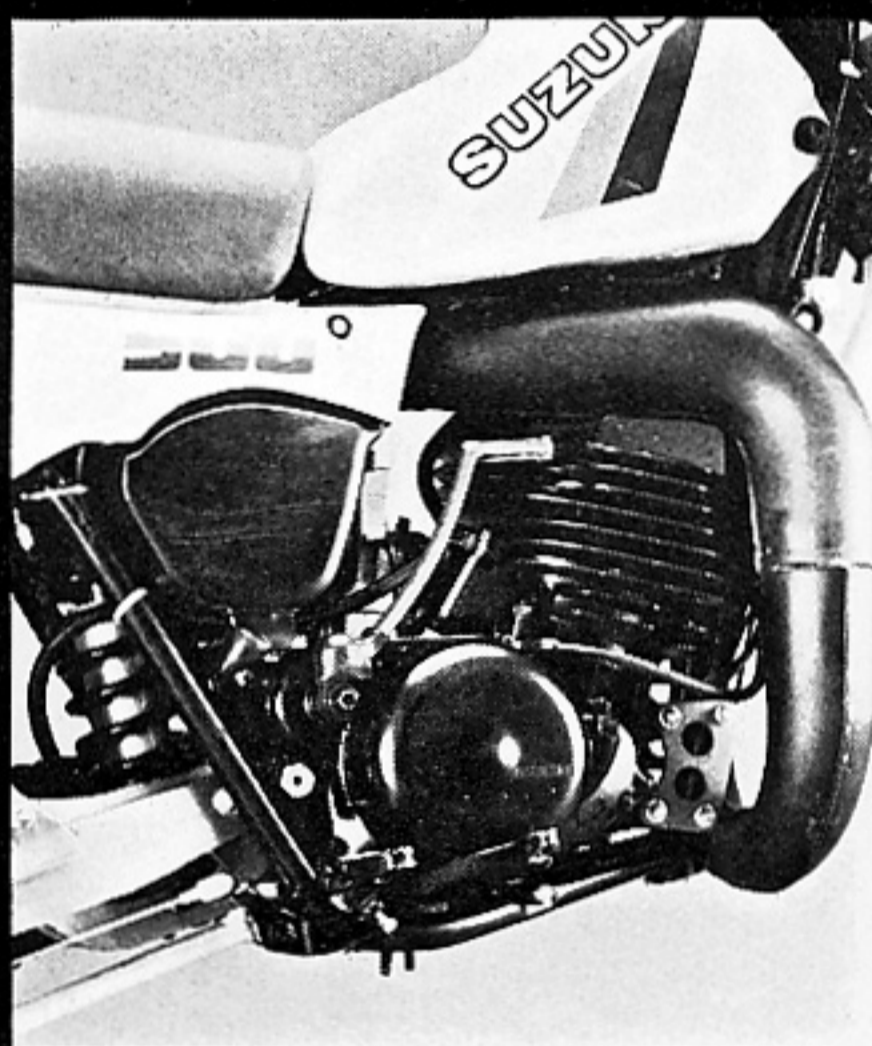
Evolution, not revolution



Suzuki has a unique ability to change its motocrossers very little from year to year and still offer race bikes that are at least equal to the best of the competition. The RM500 we tested is an evolution of last year's RM465; it has detail changes in the motor, the suspension systems, and the brakes, but it's unlikely that an owner of last year's 465 could immediately detect the difference while sitting in the saddle.

The most obvious difference between last year's Suzuki turf-tearer and this year's is the designation; the 464cc actual displacement of the '82 has been increased to 492cc by the simple expedient of a 2mm bore increase. Transmission ratios have been changed slightly to accommodate the increased power; second gear (in the four-speed box) is taller, and the final drive ratio has been raised (lowered numerically) by subtracting a tooth from the rear sprocket. Porting in the bigger cylinder is fundamentally the same as before, with Suzuki's Full Reed system feeding both the intake port and the crankcase with one reed block. There's more flywheel effect this year to keep the extra power from turning into wheelspin with the first twitch of the wrist.

The Full Floater rear end is subtly different, with a new shock, (adjustable for both compression and rebound damping with four clicks each), new aluminum struts (replacing the old steel units), and relocated (11mm far-



ther forward) strut mounts on the swingarm. This strut relocation is accompanied by a 15mm lengthening of the swingarm, and the result is a softer wheel rate and slightly longer travel. The head angle has been pushed out ever so slightly from 29 degrees, 20 minutes to 29 degrees, 40 minutes. Trail has been lengthened a silly millimeter to 123mm.

The front fork assembly is new, with 43mm tubes and eight stages of compression-damping adjustability. The front brake is a



double-leading-shoe affair for extra stopping power.

All the trick stuff that made Suzuki motocrossers so impressive in the past is still there. The wheels are very strong, very light straight-pull assemblies. There are amazing weight-saving tricks all over the machine; like the Honda, the Suzuki even has hollow ball ends on its handlebar levers to keep the weight and the center of gravity as low as engineering can make them. **M**

minimum effort, making the bike a gas to ride in tight sections. The bike was stable at speed too.

The RM lacks the Honda's Cadillac-plush suspension action, but it still sucks up all the bumps without pounding the rider. The spring rates at both ends seem nearly ideal for riders in the 150-pound range. Stutter bumps pose no problems, and there's enough rate-rise at each end to prevent hard bottoming.

With its nearly ideal chassis, the RM's only flaws were in its engine performance and brakes. The motor made competitive power, but our test bike tended to over-heat and lose power. The jetting was correct for the riding conditions, so maybe

the ignition timing was to blame. Full power returned after the engine cooled down. Otherwise, the motor worked well. Shifting was slick and accurate, and the clutch was strong. The other problem area was the front brake. Though the dual-leading-shoe unit responded strongly to the first bit of pressure, pulling harder didn't increase the stopping power proportionally. More progressive action would be an improvement. The initial grabbiness could easily be eliminated by purposely misadjusting the shoes, but that wouldn't add to the total braking power.

When it came time to pick the best motor, the vote was unanimous: the Yama-

ha. It feels the most powerful on top and delivers controllable power all the way up from kickstarting speed. The broad, strong powerband makes the bike easy to keep under way, even when you make a major screw-up. The transmission has a somewhat notchy, indefinite feel, so missed shifts occur occasionally. The clutch pull on our particular test bike got progressively stiffer as the test progressed, due to a high-friction cable.

Though the YZ's engine is the most forgiving of this bunch, its chassis places a few more demands on its rider. The Yamaha is one of the lighter bikes in the test, but its somewhat high-effort steering makes it feel heavier than it is. The Yama-

YAMAHA YZ490

New rear suspension,
reduced weight

Yamaha richly deserves *Motorcyclist's* Bravery in the Face of Lukewarm 1982 Motocross Tests award, if the '83 YZ490K is any indication. The rear suspension system used on the '82 YZ125, 250, and 490 got less-than-rave reviews last year from the motorcycling press, mostly because of the high center of gravity created by the system's high shock absorber and resulting high gas tank. The 125 and the 250 had their radiators stuck way up on the triple crowns as well; the effect was, in the words of one of our testers, "like having a torpedo slung under the gas tank." "The bike," our tester added, "steers you more than you steer the bike."

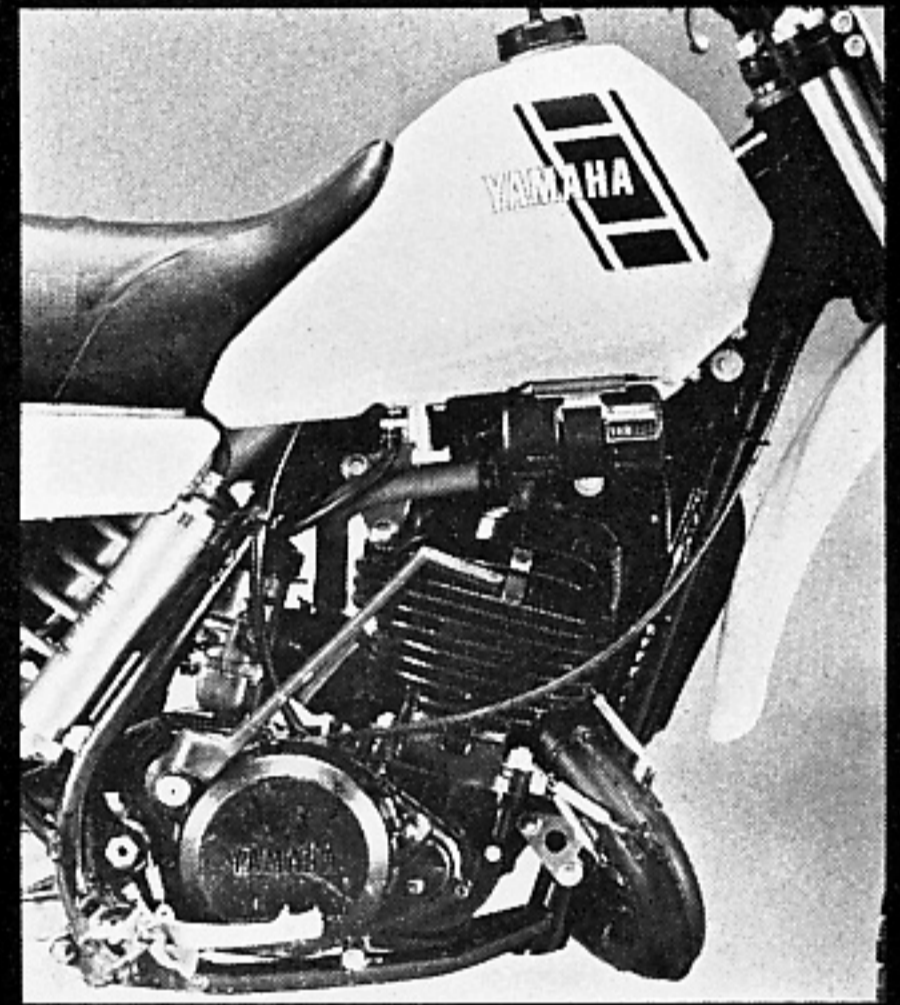
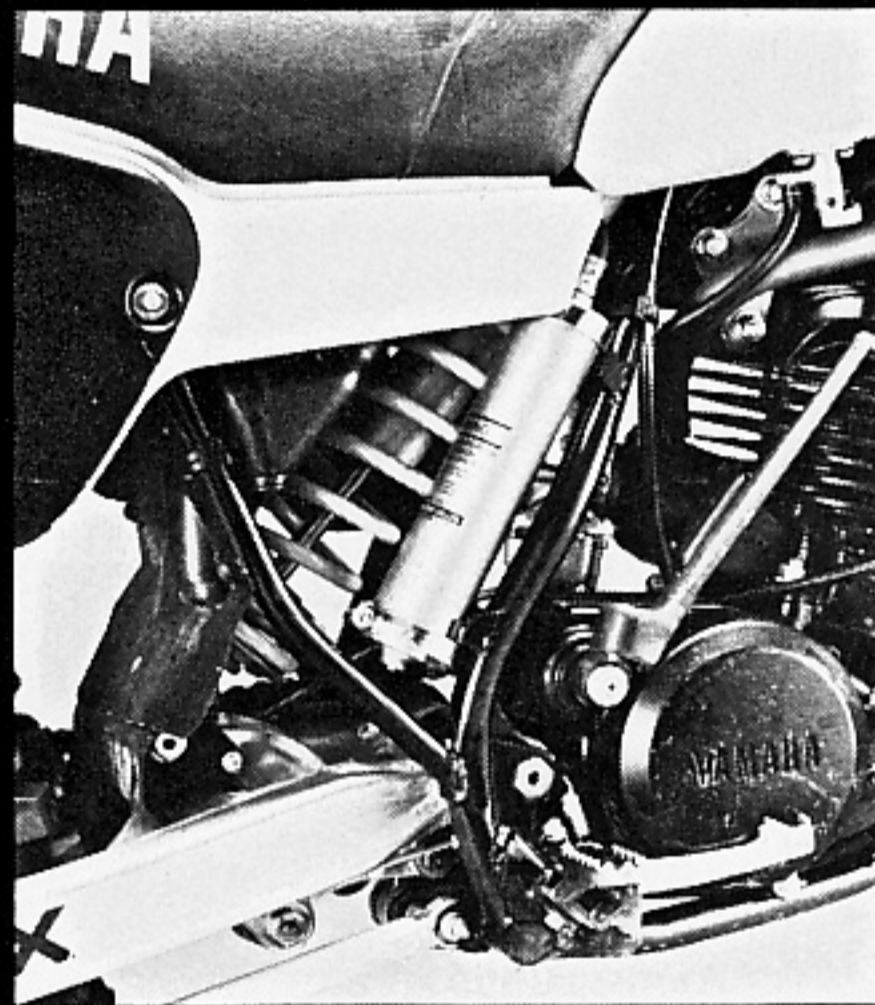
Some manufacturers might have blamed the testers for not liking their machines, but Yamaha is made of sterner stuff. Diving right back into the minds of its R&D engineers, Yamaha completely redesigned its entire motocrosser line. The "under the tank" shock position, sacred on Yamaha MXers since 1974, is history. The new system resembles the Honda, Maico, Can-Am, and KTM upright single-shock systems, with the shock mounted more or less vertically behind the airbox and attached to the swingarm via a pair of articulated struts, one of forged iron, one of forged aluminum.

Yamaha has been a leader in providing the rider with maximum shock adjustability, and the '83 490's new shock comes with a full range of damping choices; there are 25 stages of rebound damping and 20 stages of compression damping.

With the rear-end pieces juggled to accommodate the new suspension configuration, the frame, of course, had to be completely redesigned. It's made of small-diameter, high-tensile steel tubing. Steering geometry remains the same as on the '82, at 28.5 degrees of rake and 4.72 inches of trail.

The fork has 43mm stanchions, as it did last year, but there is a new wrinkle in the damping system. The '82 490 had a fixed compression-damping orifice; the '83 comes with a new spring-loaded compression-damping valve that rises progressively as damper speed—and thus oil pressure—rises. With this system the slow-speed damping, still controlled by a fixed orifice, can be higher without bringing on hydraulic lock with harder impacts. There is more rebound damping as well, and the spring rates have been changed to work with the new valving. Thanks to a new, double-lip design, the fork seals create a little stiction at first but are supposed to break in and provide smooth stroking after the first few hours of operation.

The '82 490 motor was an impressive piece of work, pumping out nearly 50 horsepower with a smooth, wide powerband. Yamaha would have been justified in leaving the motor alone, but that would have been too easy; there is a long list of refinements incorporated into the '83. The cylinder head is a new casting, with one fin fewer than before. The head raises the compression ratio from 7.0:1 to 7.4:1 (corrected); combustion-chamber volume is down from 50.2cc to



46.9cc. The pipe and porting have been reshaped for more power and an even broader powerband. Also, the carb is now offset 20 degrees to mate with the new airbox, which was moved forward to clear the new semiupright shock.

The YEIS bottle, known outside Yamaha circles as a Hemholz reservoir, has been enlarged this year to work with the new pipe and porting specs. The clutch has also been redone, with new steel plates in addition to an enlarged rubber damper between the primary ring gear and the clutch basket. The

clutch hub and pressure plate have also been lightened to reduce rotating inertia.

The savvy manufacturers have been concentrating on lightening their machines this year, especially in the area of unsprung weight. Yamaha appears to have made a firm commitment to staying competitive in the weight war; the 490 bristles with neat weight-saving tricks. There are new, lighter rims; the edge rolls are hollow, and the overall width is 10mm greater. Yamaha even went so far as to use aluminum nipples in the rims, just like those used on the works bikes.

The brake hubs are also new, though the basics of the braking system remain the same. Drum diameter, front and rear, is still 130mm, but the new items are thinner and have been heat-treated for extra strength. The rear brake, rod actuated last year, now has a cable.

Detail lightening changes are too numerous to mention, but a partial list will show just how serious Yamaha is about getting close to works-bike weight figures. The starter plunger in the carburetor, brass in all recent motorcycles, is aluminum on the YZ. The clutch-cable holder, usually steel, is now aluminum. The entire kickstarter mechanism has been redone, with lighter weight a primary goal. The new rear suspension system allows a lower CG, better suspension action, and, of course, less weight; Yamaha figures the new suspension system alone saves 4.4 pounds. **M**

ha feels long and a little reluctant to change direction. It can't be snapped into a corner with the same ease as the other Japanese scooters or the Husky. This makes the Yamaha more tiring to ride. The bike will steer through flat turns on the inside without dealing out any surprises to the rider. It works on the berms, too, with the proper suspension settings. Some riders noticed a tendency for the YZ to try to climb over berms, requiring correction from the rider. The Yamaha will corner competitively with the best bikes; it just takes a bit more planning and effort on the rider's part.

With a little fiddling, the suspension lets the YZ track straight through the bumps. The wheels stay on the ground effective-

ly, though the ride isn't as cushy as that of the CR480. Neither end bottoms excessively, even in huge bumps. The YZ has a unified character, one that is different from the other Japanese bikes. It's almost European in its slower steering and larger feel.

Besides praise for its engine, the YZ also garnered warm comments about its brakes. The double-leading-shoe brake is powerful and very controllable. Any of the bikes' front brakes will lock the wheel with a two-fingered squeeze; the Yamaha's takes little effort and is the most progressive. The rear brake is good, too, but is susceptible to mild chatter over stutter bumps.

After any major Gatorade break in the

testing, the Maico and KTM were invariably the last to be picked for the next riding session—not because of any major shortcomings, but simply because they were more taxing and difficult to ride.

None of the Maico's weaknesses lie in its engine. A blindfolded rider would be hard-pressed to pick the Maico out of the pack by judging engine performance alone. It's got the customary flow of dirt-sliding power stretching from one end of the rev band to the other. The gearbox shifts well, and surprise, surprise, the clutch even has a light pull.

The main stumbling block for the Maico is its height. The 490 is amazingly tall; even our six-foot-and-over riders felt uneasy tossing the bike into a corner.

PERFORMANCE AT A GLANCE

In the interest of confusing you even more about these seven monsters, we've compiled this series of comparison charts (Confusion At A Glance?). Each bike is listed in the order in which it was rated by three of our testers: a national level Pro, local Expert, and a staff Intermediate.

The bikes were rated on a curve with the best bike receiving 100 points (except in the event of a tie, in which case each received 95 points, or in the category of Suspension and Stopping

Ability, in which front and rear brake and suspension components were judged separately on each machine and then averaged). By using 100 to represent the best possible score in each category, we were able to award the bikes with a point value that reflected the closeness of the finishing order. Rating them from, say, one to ten, simply would not reflect the minor differences. Even though these figures are subjective, we think they accurately reflect the performance range.

Power/General Performance

	Pro	Expert	Intermediate	Average
Yamaha	100	100	100	100
Maico	98	98	98	98.0
Kawasaki	97	97	96	96.6
KTM	95	94	95	94.6
Suzuki	95	94	93	94.0
Honda*	92	94	95	93.6
Husqvarna	91	90	89	90.0

Shifting Action

	Pro	Expert	Intermediate	Average
Honda	100	95	100	98.3
Suzuki	95	90	95	93.3
Kawasaki	85	100	83	89.3
Maico	90	85	80	85.0
Yamaha	80	80	75	78.3
Husqvarna	75	75	83	77.6
KTM	70	70	70	70.0

Cornering

	Pro	Expert	Intermediate	Average
Suzuki	100	100	100	100
Kawasaki	98	98	90	95.3
Honda	90	90	95	91.6
Husqvarna	90	90	85	88.3
KTM	80	81	79	80.0
Maico	82	82	75	79.6
Yamaha	75	75	85	78.3

Braking Ability

	Pro	Expert	Intermediate	Average
Yamaha	97.5	90	89	92.2
Husqvarna	92.5	87.5	84	88.0
Honda	77.5	97.5	84	86.3
Kawasaki	80	85	90	85.0
Suzuki	87.5	82.5	82.5	84.1
KTM	77.5	75	79	77.1
Maico	72.5	72.5	75	73.3

Suspension

	Pro	Expert	Intermediate	Average
Honda	89	100	97.5	95.5
Suzuki	100	90	82.5	90.8
Kawasaki	90	72	82	81.3
Yamaha	70	75	77.5	74.1
Husqvarna	79	79	62.5	73.5
Maico	60	60	60	60.0
KTM	55	48	47	50.0

Riding Position/Comfort

	Pro	Expert	Intermediate	Average
Suzuki	100	100	90	96.6
Honda	90	80	100	90.0
Kawasaki	80	90	80	83.3
Yamaha	70	60	70	66.6
Husqvarna	60	70	50	60.0
KTM	45	45	45	45.0
Maico	40	40	40	40.0

Riding Ease

	Pro	Expert	Intermediate	Average
Honda	95	95	100	96.0
Kawasaki	75	70	90	78.0
Husqvarna	60	95	80	78.0
Suzuki	95	70	60	75.0
Yamaha	75	70	70	72.0
Maico	50	55	60	55.0
KTM	50	50	52	51.0

Overall Winner

	Pro	Expert	Intermediate	Average
Honda	96	100	100	98.6
Suzuki	100	94	96	96.6
Kawasaki	94	96	94	94.6
Yamaha	94	92	94	93.3
Husqvarna	92	94	92	92.6
Maico	88	88	87	87.6
KTM	85	85	86	85.3

*Due to constant problems with the Honda's ignition, it was difficult to give it a true position in the ratings.

PRICE	2000 2200 2400 2600 2800					
1983 Honda CR480R	[Bar]					\$2398
1983 Husqvarna 500CR	[Bar]					\$2895
1983 Kawasaki KX500	[Bar]					\$2399
1983 KTM MC495	[Bar]					\$2875
1983 Maico 490 Spider	[Bar]					\$2845
1983 Suzuki RM500	[Bar]					\$2399
1983 Yamaha YZ490	[Bar]					\$2449

WET WEIGHT	180 200 220 240 260					
1983 Honda CR480R	[Bar]					241 lb
1983 Husqvarna 500CR	[Bar]					257 lb
1983 Kawasaki KX500	[Bar]					248 lb
1983 KTM MC495	[Bar]					272 lb
1983 Maico 490 Spider	[Bar]					257 lb
1983 Suzuki RM500	[Bar]					246 lb
1983 Yamaha YZ490	[Bar]					244 lb

SUSPENSION TRAVEL	10.5 11.0 11.5 12.0 12.5					
1983 Honda CR480R	[Bar]					Front 12.0 in.
	[Bar]					Rear 12.4 in.
1983 Husqvarna 500CR	[Bar]					Front 12.0 in.
	[Bar]					Rear 13.0 in.
1983 Kawasaki KX500	[Bar]					Front 11.8 in.
	[Bar]					Rear 12.0 in.
1983 KTM MC495	[Bar]					Front 11.8 in.
	[Bar]					Rear 12.6 in.
1983 Maico 490 Spider	[Bar]					Front 12.2 in.
	[Bar]					Rear 12.8 in.
1983 Suzuki RM500	[Bar]					Front 11.2 in.
	[Bar]					Rear 12.7 in.
1983 Yamaha YZ490	[Bar]					Front 11.8 in.
	[Bar]					Rear 12.6 in.

Shorter guys simply couldn't reach the ground when they needed to put a foot down and straighten things out. A major lowering program would be worthwhile. The bike's unladen seat height of 38.6 inches isn't all that astronomical, but the dense seat foam and high-riding suspension combine to position the rider far above the track surface.

Other aspects of the riding position didn't exactly endear the machine to our test crew either. The long, firm seat has very little forward slope, so it doesn't hold the rider in position under acceleration. Your butt slides along it as if it were on a greased rail. With close to 50 horsepower on tap, the rider's arms get a real workout holding the body in position. And body position is critical with the Maico; the combined bike/rider center of gravity is very high, making the bike wheelie-prone. A softer or cut-down seat and lower ride height would be of tremendous benefit.

Underneath the high-rider exterior, however, the classic Maico steering is fully intact. Even though the rider might feel awkward, the bike will slash through flat corners on the inside line as surely as the best in the test. The steering is light and precise, though the high rider placement slows the bike's response to banking inputs. If you can live with the seat height, the Maico is a flexible handler; it lets you use almost any line around the track successfully.

Besides the bike's altitude-related problems, it also suffers from some sus-

pension woes. Both ends require a good deal of break-in to get them loosened up, and even then they are somewhat harsh and unresponsive. As delivered, the fork bottomed hard in big dips. We raised the oil level substantially to eliminate the problem. The resulting fork performance was superior to that of the KTM's Marzocchi unit, but harsher and more abusive than that of the rest of the machines. The rear suspension is lightly sprung, so it carries a lot of spring preload in an attempt to gain bottoming resistance. The firm preload makes the rear wheel slow to respond to sharp bumps, but it still bottoms on big impacts. The spring would likely work well on a smoother track, where it could be run with less preload, but on our rough, natural-terrain test track a stiffer spring with less preload is needed. Since the Ohlins shock adjusts externally for rebound damping, it should be easy to dial in the suspension with a new spring.

The KTM's rear suspension seems to suffer from the same too-soft springing problem. There's no way to make the White Power shock work properly on both big bumps and small stutter bumps. You can have it right for one type, but not for both. A stiffer-rate spring would seem to be the answer; luckily the shock adjusts for compression and rebound damping, so tuning with a new spring should be straightforward.

The KTM's Marzocchi front fork requires a fair amount of break-in and, even then, suffers from stiction. Like the Maico, the fork is reluctant to move over small bumps and only bothers itself with the

larger jolts. With the proper oil level, the springing is about right, and hard bottoming can be eliminated. We've heard that there are some fairly easy ways to reduce the Marzocchi's stiction, so there is room for considerable improvement.

Suspension shortcomings aside, the KTM MC495 is a decent handler. It steers more quickly than the Yamaha or Husky and can easily hold the tight inside line in smooth, flat corners. Direction changes are quick and easy, thanks to the nimble steering and reasonably natural riding position. One rider complained that the footpegs were too far forward to make standing easy. Everyone agreed that the seat was too firm. We trimmed the wide handlebar down a bit to suit our smaller riders.

No one leveled any complaints at the engine. It has the broad, usable power that's indicative of these open-classers. The powerband works well with the four-speed gearbox. It pulls the jumps between the gears with authority. The first-gear ratio is perfect for the power characteristics; you can torque through tight turns without slipping the clutch. The shift lever must be moved through a long throw to engage the next gear, and the transmission is reluctant to speed-shift. The lever sticks way out from the engine case, so all our testers kicked the bike out of gear accidentally until they learned to keep their toes clear of the lever.

The KTM is one of the two bikes in the test with a disc front brake; like the Kawasaki's, it was greeted with lukewarm enthusiasm. One rider with lots of street riding (disc-brake) experience liked it for its feel and power. The rest got along with it well enough, but were equally happy with

OFF THE RECORD

Motocrossers get better every year—they'd better, or the industry would be in real trouble. Each year we get new or reworked engines and chassis. But less obvious improvements are showing up in other areas too. This group of open-classers proves that standard chassis setup is improving drastically. These '83 models come out of the box with chassis settings that are very close to ideal for the average rider and track. The new bikes come closer than ever before to realizing the full performance potential designed into them. Previously, a great deal of the final fine-tuning was left to the buyer; he could end up spending many practice sessions swapping springs, fork oil, shocks, etc. Maybe he could get his scooter performing up to its full potential, or maybe not. With these bikes, the buyer has been spared most of that heartache. In most cases, chassis tuning on these machines takes little time and can be accomplished by turning a screw or an adjustment ring. Now the factories seem to be doing their final research and development testing themselves, instead of leaving it to the customer. It's a welcome change.

—Jeff Karr

I must be getting old. I can remember when I loathed open-classers and the people who rode them. Both were usually too big for

their own good, and I figured the only reason all the old coots I knew owned them was to augment their manhood. I figured there were only a handful of guys in the world who could actually ride one of these beasts at tenths, and all the rest were simply double-fisting their egos.

So after riding this year's crop of open-classers, I came to the conclusion that I'm either aging rapidly or these bikes are getting a whole lot better; I can't remember the last time I had so much fun on a motocross track. I guess the manufacturers have realized that horsepower can only get you so far, and when you're talking power in the upper 40s range, it's time to turn your attention to the chassis, which is precisely what's happened. Not only do these bikes get more of their power to the ground, but they now give nothing away in the chassis department to the more popular 125s and 250s. Most of this year's open-classers are really easy to ride and come set up almost perfectly from the factory.

The easiest one to ride, at least for me, is the Honda. I couldn't ask for anything more from a suspension system, and the bike is supremely comfortable and steers precisely through all types of corners. Even though our Honda ran poorly at high revs, I was still able to go much faster on it than on any of the others, which tells you something about the importance of a sound chassis. The Suzuki is my second favorite only because it takes a bit more effort to ride. Like the RM125 and 250, it demands that the rider pay close attention to weight transfer while cornering, and when I'm dealing with as much horse-

power as these things make, I don't need one more thing to think about.

The rest of the bikes also demand attention in one area or another that distracts from the task at hand, that of making the most out of all the horsepower. Perhaps better riders than I—and there are many—have enough concentration left over to deal with these things, but for me, any extraneous concentration has the potential to draw my attention from the racetrack. With the Honda, however, there is only the racetrack; because of that, I have to pick it as my favorite.

—Ken Vreeke

Each year when we do open-class comparisons, we end up picking a winner, though other bikes could easily be winners with the right adjustments. This year all the bikes come set up so well that I really can't pick just one winner.

But for me, being "Too Short," I tend to like the smaller Japanese bikes more than the tall European machines. I appreciate the comfort of the Honda, the low feel of the Kawasaki and Yamaha, and the short feel of the Suzuki. I also like the new graphics and totally redesigned chassis of the new Husky. It's the first Husky that doesn't seem to have that unmistakable Husky feeling; I like it better than last year's bike. Then, of course, there is the brute power of the KTM and Maico. I guess I'd race any one of these seven bikes [then again, Willy would race a rump roast to get his picture in the mag.—Ed.], but I would probably do best on the Honda, Suzuki, or Yamaha.

—Willy "Too Nice" Simons

	Honda CR480R	Husqvarna 500CR	Kawasaki KX500
Suggested retail price	\$2398	\$2895	\$2399
Warranty	None	30-day limited	None
Engine type	Air-cooled two-stroke single	Air-cooled two-stroke single	Air-cooled two-stroke single
Displacement	472cc	488cc	499cc
Bore x stroke	89.0 x 76mm	86.0 x 84mm	86.0 x 86mm
Compression ratio	6.7:1 (corrected)	9.5:1 (uncorrected)	7.0:1 (corrected)
Carburetion	38mm Keihin	40mm Mikuni	38mm Mikuni
Final drive	No. 520 chain, 54/14	No. 520 chain, 53/12	No. 520 chain, 43/14
Front suspension	43mm Showa, 12.0 in. travel; adjustments for air pressure and compression damping	40mm Husqvarna, 12.0 in. travel; adjustment for air pressure	43mm Kayaba, 11.8 in. travel; adjustments for air pressure and compression damping
Rear suspension	Honda Pro-Link, 1 Showa damper, 12.4 in. travel; adjustments for spring preload, rebound damping, and compression damping	Dual Husqvarna/Ohlins ITC dampers, 13.0 in. travel; adjustment for spring preload	Kawasaki Uni-Trak, 1 Kayaba damper, 12.4 in. travel; adjustments for spring preload and rebound damping
Front brake	Double-leading-shoe drum	Double-leading-shoe drum	Single hydraulic disc
Rear brake	Single-leading-shoe drum, cable actuated	Single-leading-shoe drum, rod actuated	Single-leading-shoe drum, rod actuated
Front tire	90/80-21 Bridgestone M33	3.00-21 Trelleborg Motocross T544	3.00-21 Dunlop Sports K490
Rear tire	150/80-18 Bridgestone M32	5.00-18 Pirelli Sandcross MT32	5.10-18 Dunlop Sports K490
Rake/trail	26°/3.9 in. (99mm)	30°/6.0 in. (151mm)	29°/4.8 in. (122mm)
Wheelbase	58.5 in. (1485mm)	58.3 in. (1480mm)	58.3 in. (1480mm)
Seat height, unladen	37.5 in. (956mm)	37.5 in. (956mm)	39.0 in. (991mm)
Ground clearance, unladen	13.5 in. (345mm)	13.0 in. (330mm)	13.0 in. (330mm)
Weight	243 lb (110kg) wet; 228 lb (103kg) tank empty	257 lb (117kg) wet; 242 lb (110kg) tank empty	248 lb (112kg) wet; 231 lb (105kg) tank empty



PHOTO: KATHLEEN DANTINI

the competition's drum front brakes. The 495's rear brake glazed over after a few day's riding and lost most of its power.

We'd love to pick a clear winner from this group of big-bore racers; the problem is most of them are too close for us to name an overall winner that is guaranteed to take the trophy at every racetrack, no matter who's in the saddle. There are too many conditions and qualifications for that. We can tell you our choices based on the results from our test track.

Bringing up the rear are the Maico and KTM. As delivered, our riders couldn't go as fast for as long on these as they could on the rest of the machines. Given some well-thought-out suspension adjustments (and some seat paring, in the case of the Maico), they can work at least as well as the other bikes. Both are basically top-flight handlers with competitive engines. The Yamaha ranks in fifth place simply because it is a bit more demanding to ride than the best. Like the rest, it could be fit to race (and win) after an hour's worth of tuning. The Kawasaki, Husky, and Suzuki are in a three-way tie for second place. They'll take a small amount of tuning to get set up, but as far as we could determine, they'll get around the track as quickly as any of the others. The Kawasaki, Suzuki, and Honda are ideal for the cut-and-thrust rider; the Husky is perfect for riders with a less violent style. That leaves us with the Honda CR480R. It edges out the other machines because it comes ready to race; it's the easiest to ride and the least tiring. Assuming that Honda gets the CR480's ignition sorted out pronto, it's the best bike to hop on and win with, right out of the box. **M**

KTM MC495	Maico 490 Spider	Suzuki RM500	Yamaha YZ490
\$2875	\$2845	\$2399	\$2449
None.....	None.....	None.....	30-day limited
Air-cooled two-stroke single.....	Air-cooled two-stroke single.....	Air-cooled two-stroke single.....	Air-cooled two-stroke single
495cc	488cc	492cc	487cc
92.2 x 74mm.....	86.5 x 83mm.....	88.5 x 80mm.....	87.0 x 82mm
10.0:1 (uncorrected).....	12.1:1 (uncorrected).....	6.2:1 (corrected)	7.4:1 (corrected)
40mm Bing.....	38mm Bing	38mm Mikuni.....	38mm Mikuni
No. 520 chain, 52/14	No. 520 chain, 52/14	No. 520 chain, 46/14	No. 520 chain, 46/14
42mm Marzocchi, 11.8 in. travel; adjustment for air pressure.....	42mm Maico, 12.2 in. travel; adjustment for air pressure.....	43mm Kayaba, 11.2 in. travel; adjustments for air pressure and compression damping	43mm Kayaba, 11.8 in. travel; adjustment for air pressure
KTM Pro-Lever, 1 White Power damper, 12.6 in. travel; adjustments for spring preload, compression damping, and rebound damping.....	Maico Dual Control, 1 Ohlins damper, 12.8 in. travel; adjustments for spring pre- load and rebound damping.....	Suzuki Full Floater, 1 Kayaba damper, 12.7 in. travel; adjustments for spring pre- load, compression damping, and rebound damping.....	Yamaha Monocross, 1 Kayaba damper, 12.6 in. travel; adjustments for spring pre- load, compression damping, and rebound damping
Single hydraulic disc.....	Single-leading-shoe drum.....	Double-leading-shoe drum.....	Double-leading-shoe drum
Single-leading-shoe drum, rod actuated.....	Single-leading-shoe drum, rod actuated.....	Single-leading-shoe drum, cable actuated.....	Single-leading-shoe drum, cable actuated
3.00-21 Metzeler Moto Cross.....	3.00-21 Metzeler Moto Cross.....	100/80-21 Bridgestone Motocross M33	100/80-21 Bridgestone Motocross M33
4.50-18 Metzeler Multi-Cross.....	4.50-18 Metzeler Moto Cross.....	140/80-18 Bridgestone Motocross M32	150/80-18 Bridgestone Motocross M32
27°/3.9 in. (99mm).....	27°/4.7 in. (120mm).....	29.6°/4.8 in. (123mm).....	28.5°/4.72 in. (120mm)
58.3 in. (1480mm).....	59.4 in. (1510mm).....	58.1 in. (1475mm).....	60.1 in. (1527mm)
37.5 in. (956mm).....	38.6 in. (980mm).....	36.5 in. (927mm).....	36.0 in. (914mm)
13.5 in. (345mm).....	13.5 in. (343mm).....	13.2 in. (335mm).....	12.5 in. (318mm)
270 lb (122kg) wet; 256 lb (116kg) tank empty.....	257 lb (117kg) wet; 239 lb (108kg) tank empty.....	251 lb (114kg) wet; 234 lb (106kg) tank empty.....	246 lb (112kg) wet; 227 lb (103kg) tank empty