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125 MX SHOOTOUT

KAWASAKI KX125A
HONDA CR125M/SUZUKI RM125
YAMAHA YZ125C

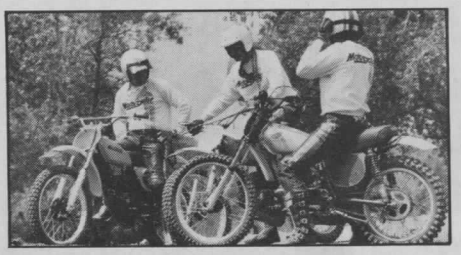
How To Ride:
EKINS GETS OFF EASY

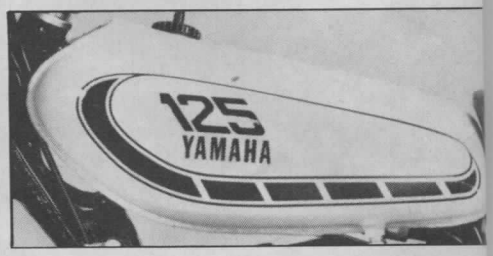
HIGH SCHOOL MX RACING REPORT

Van Tips:
LET THE LIGHT IN

Technical:

125 MX



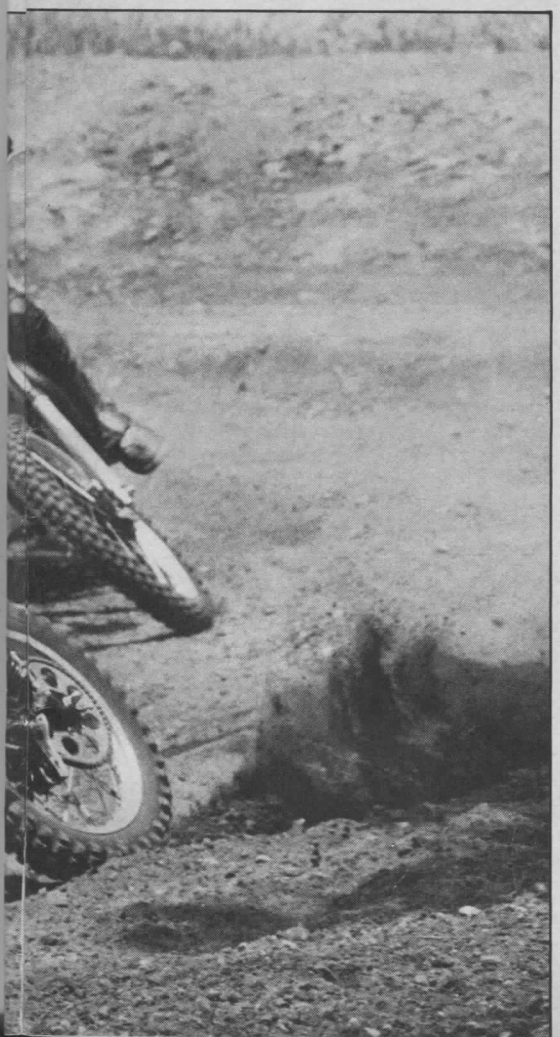


Like trying four brands of strawberry ice cream. They're the same, but they're not

BY DAVE EKINS

SHOOTOUT

PHOTOGRAPHY: PAT BROLLIER, PPC PHOTOGRAPHIC



It is more difficult to go racing on a 125 than on most larger displacement motocrossers because there simply is less room for error. If you're in the wrong gear the motor won't save you, and you've got to go like hell through the turns. These modern 125 MXers weigh very close to 200 pounds and get 20 hp as long as you've got a death-grip on the throttle and never back off. You alter your velocity on the track with the shift and brake levers, push it through turns by sitting on the gas tank, and race down the whoop-de-doos hung out over the rear axle. Body control has as much to do with getting good lap times as engine and chassis tune.

So you ask yourself, how can one 20-hp 125cc, 200-pound 'crosser with teledraulics, swing arm, and identical wheel size be better than the other three? Discounting price and make, which one works best, goes fastest, corners quickest, fits best, and is easiest to ride? Which 125 MXer is best for me? That, my friends, is the tack of this tale.

In an effort to remain as unbiased as possible we'll talk about these bikes in alphabetical order—reversed. Yamaha's much-heralded and highly touted monoshocking YZ 125 is the fastest, most trick of them all. Just ask anybody who has ridden one. It has go-fast stiff suspension, 23 ponies that run at full gallop (they won't canter or trot), and a close-ratio gearbox so close you never know exactly which gear you're in; just shift it up or down to your needs.

The 125 is fully scaled down from its uniquely sprung big brothers. Most the pieces are the same, only smaller. Swing arm, frame, and even the air filter assembly are 4/5th-scale miniatures.

Front fork legs are bigger than last year's. The stanchions are 2mm in diameter larger than the same part on Yamaha's 125MX. The new 250YZ is using a 36mm-diameter stanchion with a fork that moves the same 7.68 inches. The 125YZ appears to be fitted with last year's 250YZ fork assembly, again both have 7.68 inches of travel. Springs are lighter and damping rates are altered to allow for a motorcycle that is 30 pounds lighter.

Although smaller, frame construction is nearly identical to the 250YZ. The nitrogen-pressurized rear shock is basically the same for all five Yamaha racers, two MXers and three YZs. That is, housing, bodies and shafts are interchangeable. Damping rates have been changed by altering orifices and valves within the units for the larger YZs. The

125 MX SHOOTOUT

YZ125C carries a lighter spring and less gas pressure to balance out the flywieght.

Magnesium seems to be getting scarce. The word "magnesium" only appears on the brake backing plates, the outer engine cases being die-cast aluminum. Honda and Yamaha have made a habit of casting the magic word for lightness and expense into these pieces of their product more as a sales tool than anything else. It appears these "mag" pieces may become extinct

Both wheel hubs are of proven, lightweight conical design with cast-in steel liners for brake-shoe wear surface. The front hub carries a seal outside the bearing on the small end while relying on just the backing plate to shield the bearing at that side. There is a labyrinth seal between backing plate and hub that is very effective if you're motocrossing in a lake.

Akront over in Spain started this heat-treated aluminum-alloy-rim business for off-road motorbikes. D.I.D. in Japan did them one better by removing the lips that had a reputation of catching mud and making the whole unsprung mess too heavy. D.I.D.'s rims were dull and grey; we are told the heat treatment caused them to turn out that way. This YZ125C has those same D.I.D. rims only they have a silver shine to them. A nice touch, and just when we gave up having pretty wheels.

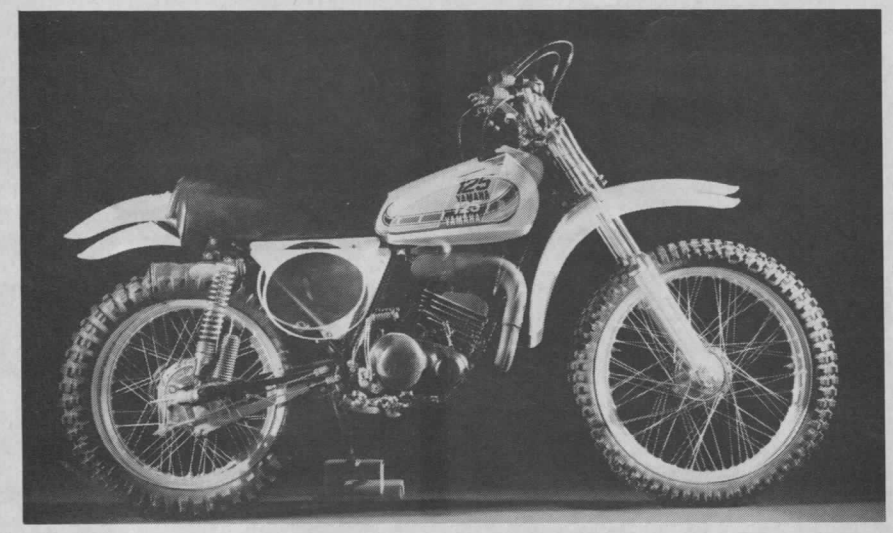
Dunlop Sports Seniors cover both front and rear rims. Some prefer to say "Dunrop" because they are made in Japan using Dunlop of England designs. The front is a conventional 3.00x21 and the rear, a new 4.10x18. Knobs go all the way around on the rear tire, halfway down the sidewall. Grip is quite good but wear life of the tire is severely shortened by the large space between the center row of knobs. One race weekend will about do it in. The front tire, quite frankly, is one designed before the advent of berms and is not as good a tire as what's fitted to the rear. More on this subject later.

Even big kids are gonna get turned off when they try straddling that 33.5-inch seat. But this is the price you pay when looking for 6.5 inches of rear wheel travel. Those extra inches get built into seat height. It feels tall, but you get used to that. We were jumping from tall bikes to short bikes and vice versa; couldn't get used to either.

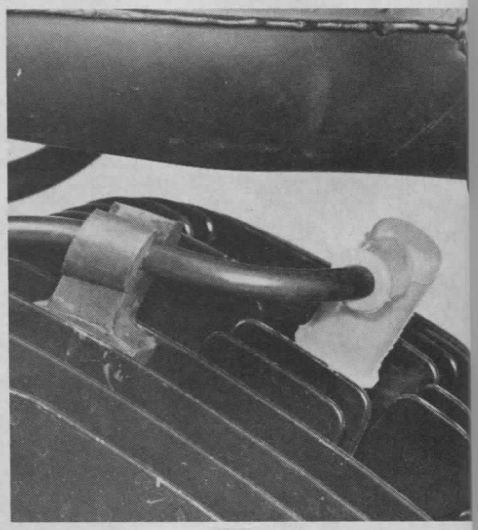
In relationship to the seat, handlebars and footrests are correct for most people. Hand and foot levers are also spot-

YAMAHA

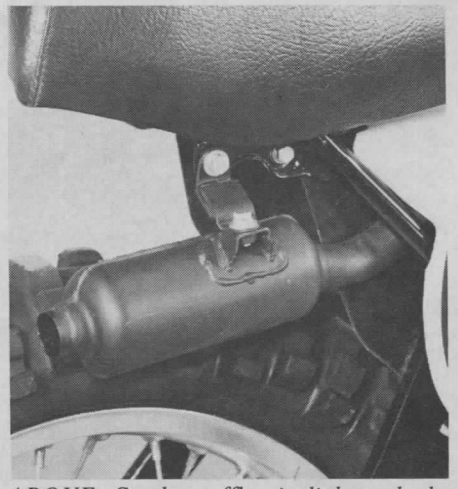
BELOW—We didn't goof, this is an intentional double exposure. Close study shows frame differences of MX and YZ.



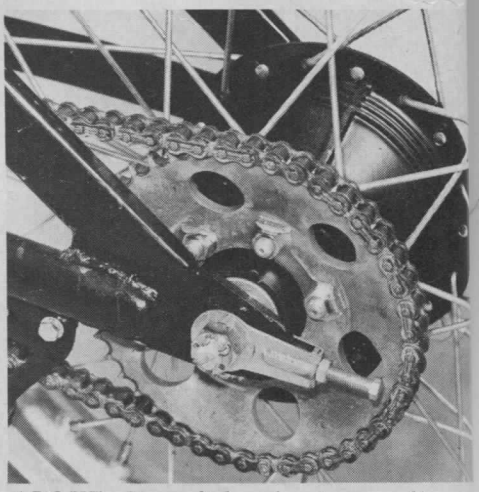
BELOW—Didn't have any drowning-out problems with the spark plug cover; note the rubber stand-off for the high-tension lead.



ABOVE—Each 125YZ is supposed to come with this Skyways muffler; ingenious device extracts more hp.



ABOVE—Stock muffler is lighter, looks more trick. Interesting thing is unit makes more noise and less hp.



ABOVE—Deep-dish aluminum alloy sprocket is fastened to lightweight conical hub with six 8mm studs.

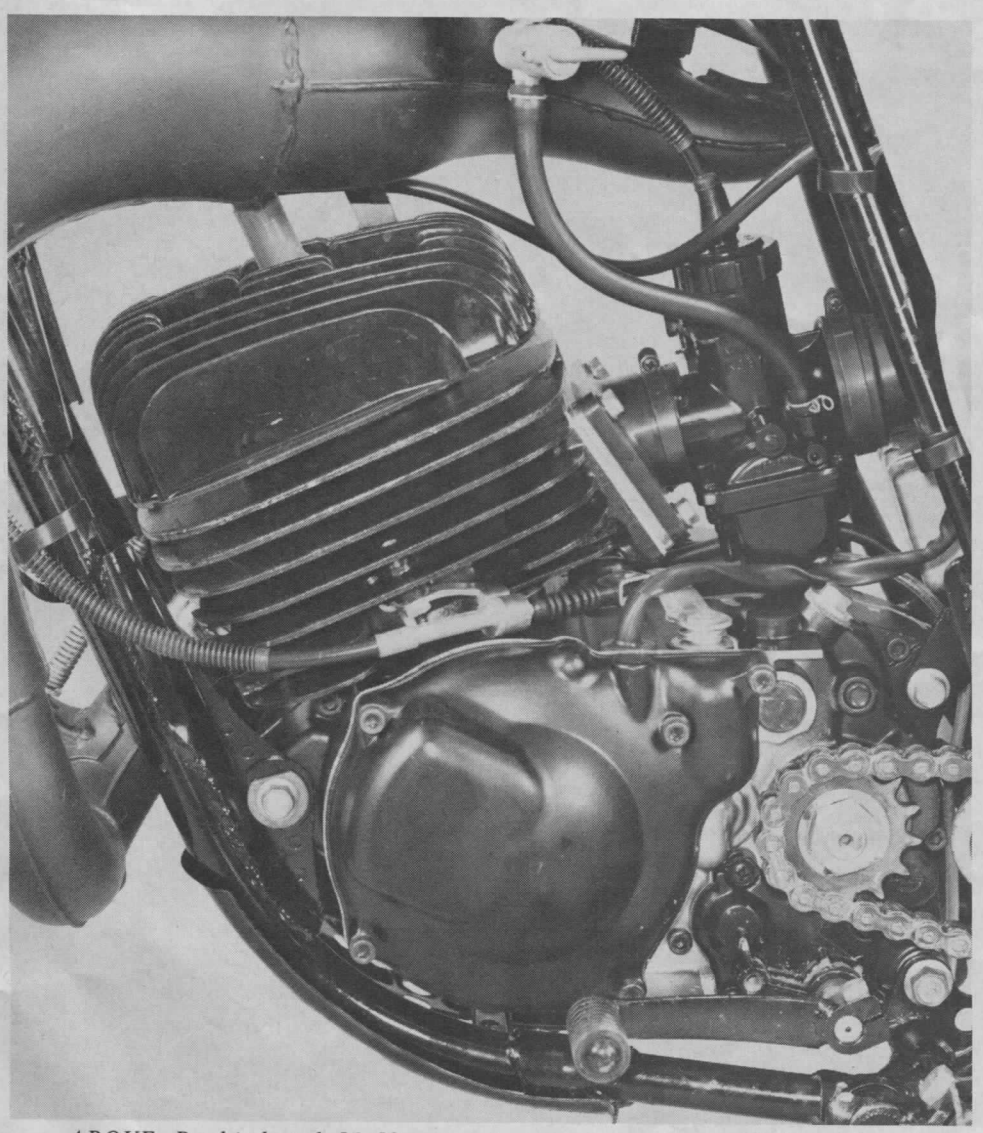
on and their functions can't be faulted either. Tank panels and seat are narrow to allow the rider ample movement to properly apply "body English" while competing, doing wheelies or "Europeans," or anything else for giggles.

It's fun with most the enjoyment coming from a healthy two-stroke with reed valve flappers between the carburetor and barrel. There are some other things of interest in the powerplant. A cast-steel liner is pressed into the cast-aluminum cylinder; it can be rebored. The piston uses a single iron ring hard chrome-plated on its rubbing edge. Piston clearance between piston and cylinder is a close .0016- to .0020-inch so care should be taken while running the first tankful of fuel through it. In fact, this is critical.

Yamaha recommends mixing your initial gas/oil ratio at 12 or 14 to 1. They recommend R-30 which is Castrol or Shell Super M—both are vegetable-base oils. These are not readily available in *my* neighborhood; they are European blends. The local Yammy dealer has a better answer. Anyway, you're supposed to run the thing at moderate throttle openings in the lower gears for about five minutes. Allow it to cool and run it again for another five minutes, while very briefly punching fourth, fifth and sixth, and nailing full throttle for response only. Now you let the bike cool down and look at the spark plug condition. Changing the main jet may or may not be necessary, depends upon altitude, atmosphere, etc. Repeat the operation again, full throttle and higher gears may be used but avoid sustained running at WFO. Then, they want you to allow the engine to cool, take off the head and barrel and sand the high spots off the piston. Clean and reassemble. Then you can put in a 15:1 gas/oil mixture and go racing. Run it another 10-15 minutes being careful not to run wide-open for any sustained periods of time. Now, the YZ is ready to race.

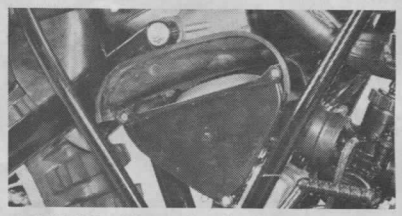
After reading all this, seems to me you've got to be a well-equipped mechanic with a thorough mechanical knowledge right down to knowing torque specifications before you can go race your shiny new Yamaha. The only tools you get with the bike are a spoke wrench, axle spanner, spark plug remover and mag puller. Even the simple chore of tightening spokes requires some practice and patience.

Spoke tightening seems to be the order of the day when these bikes are fresh out of the crate. All four required tuning on the front wheel while the back stayed tight. You could always tell when the front wheel was getting shaky, especially on the taller Yamaha and Suzuki. Weight transfer (to the back on acceleration and to the front on braking) is more pronounced, making it harder to keep the front wheel under

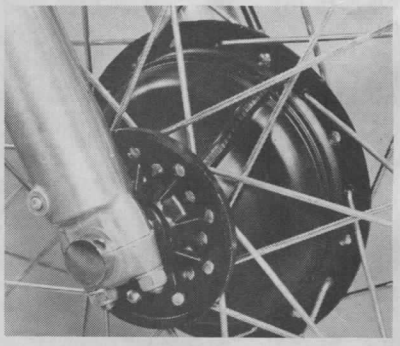


ABOVE—Reed-inducted 56x50mm engine squeezes out over 20 hp while spinning 10,500 rpm. Metal reeds seat on neoprene-coated aluminum reed block found inside inlet cavity. Magnesium side covers are no more for '75 YZ125C.

ABOVE—134-page Owner's Service Manual is small and complete. Tools are a bare minimum.



ABOVE—Monoshock forces air filter arrangement into lower position and a pair of elements.



ABOVE—Cast-aluminum front hub is of conical design and uses 45°-angle spokes in small side.

the bike; they are also more difficult to get off the line.

Even with Suzuki's claimed broader torque band you need lots of rpm and clutch-slipping to get moving. The other method—laying across the handlebars, using wide-open throttle and dropping the clutch—also works on gravel. With the rear tire lit and forward motion accomplished, grab second gear and slowly slide back to a riding position. If you move back too quickly the front end comes up and you have to either back it off, lay forward, or hit the brake. Any of the three will move you to the rear of the pack.

We would expect Suzuki's RM model to have a six-speed gearbox like the rest of the 125s tested. It doesn't. Instead, they carved another pair of transfer ports in the cylinder, put in hours of dyno time and came up with the same hp over a greater rpm span. You shouldn't have to change gears as often.

Suzuki sold a bunch of TM125s; the price was right and they worked. The RM125 is more money, but in the ballpark with these other 125s. The big, super-trick thing about the RM is its highboy, slant-shock swing arm. The seat is nearly three feet off the ground.

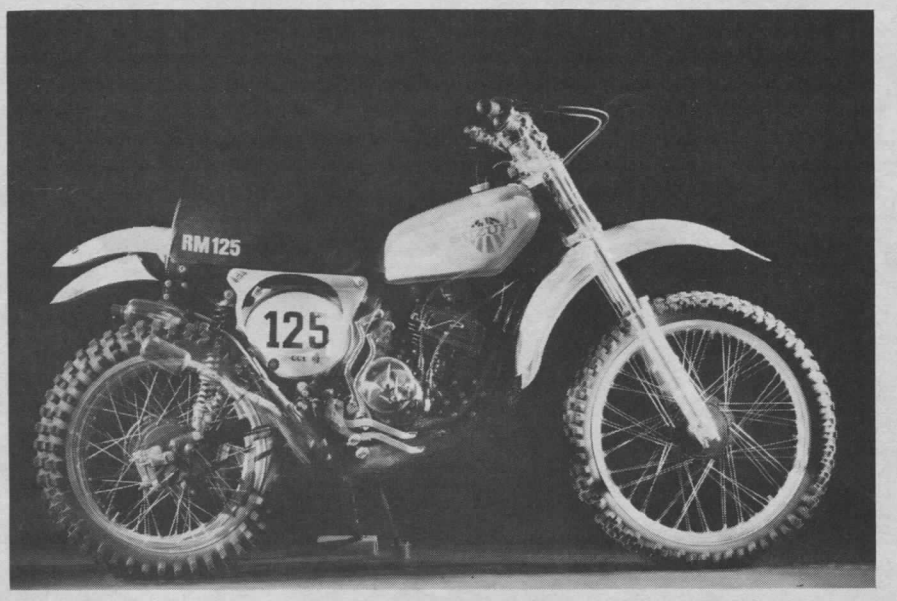
That's the penalty. The benefit is 7.67 inches of super-controlled rear axle travel. The front part of the frame is essentially the same. Like the YZ, a new fork is used, this one also has a 35mm stanchion diameter. Travel is 7.48 inches, more than the old 30mm legs on the TM.

They lost one degree of fork rake by jacking up the back end and not changing the head angle. This works out to 4.48 inches of trail, the YZ125C has 5.25 and Honda's is 5.5 inches. Lots of trail gives you high-speed stability in a straight line, little trail allows it to steer. The Suzuki would steer as long as the track was smooth. It has a problem which lies within the compression and return hydraulic damping rates of the front forks. We improved it a bit by going to a heavier-viscosity fork oil.

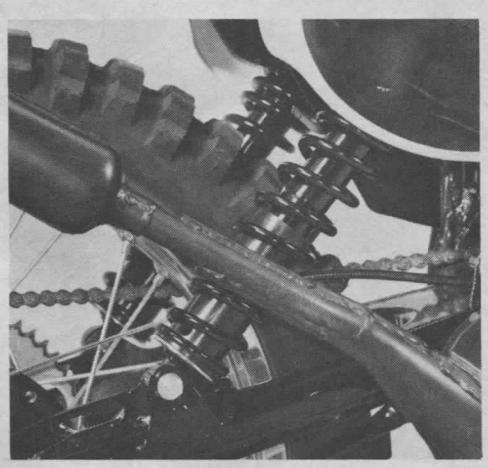
The back end is the best we've ever ridden, better than the monoshock. This RM uses the same type Kayaba shocks found on the 250 and 400 Kawasaki.. They are a normal gas/oil shock with a free-floating piston separating the two.

SUZUKI

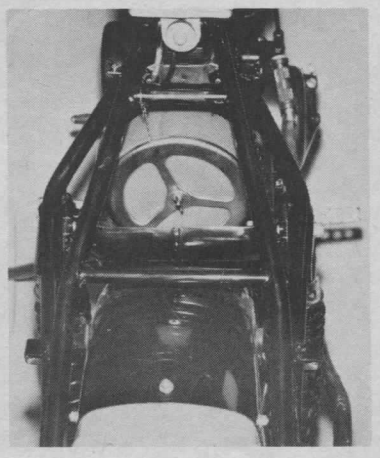
BELOW—We put Suzuki's TM and RM into the same photograph and came up with this. In this case, taller is better.



BELOW—Suzuki's tool packet has one more piece than Yamaha's. Screwdriver-looking thing is 6mm boxwrench.



ABOVE—Kayaba shocks for Suzuki are gassed. Severe-angled mounting allows rear axle to move over seven inches and shock 3½.



ABOVE—Additional frame tubes are for new shock mountings. Foam air filter is protected by side covers and seat.

ABOVE—Fork sliders are machined to a minimal thickness for lightness, plastic shin guards are for protection.

The unit is mounted in an inverted position which leaves less unsprung weight. They are not rebuildable, but heavy thought from the design department includes a seal that wipes the outside of the shaft and a plastic cover to protect it from dings. They expect these shocks to last as long as the normal ones with replacement cost about the same, $37 each.

A monoshock is rigid unless running hard, it handles the ripples like a rigid. Kayaba's miniature shocks for the RM are sensitive to the slightest bumps and have great control over the rest. It takes a huge effort to get them to bottom.

There is another penalty with this new rear section. It is too wide. If you are a long guy and try to move over the back of the bike, the number plate/upper shock covers spread your knees apart. You should also take the number plates off if you want to jack up the shock springs. Yet this is the bike with a tank that is contoured so you can easily move around the front when applying English.

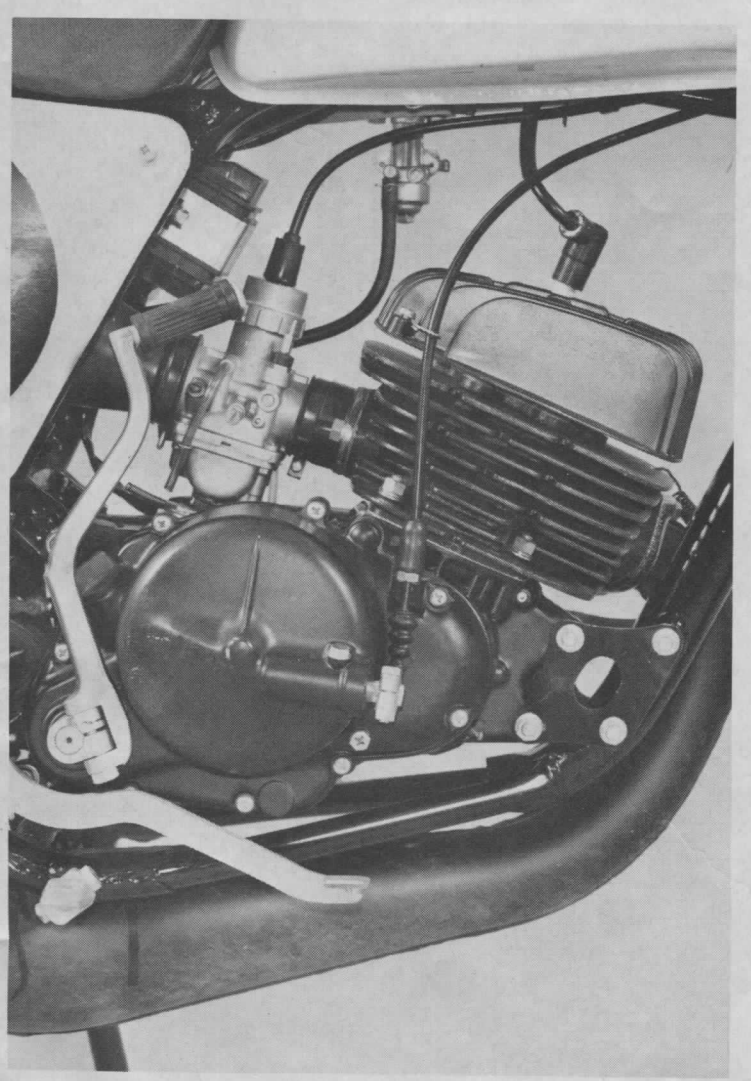
There is no magnesium on the RM. It has the largest brakes, fattest seat, and weighs 200.5 pounds full of gas. The hardened-aluminum-alloy rims are made by Takasago, although similar to D.I.D.'s effort. Tires are by I.R.C., the front a 3.00x21 and a 3.50x18 fitted to the rear. The other three are using a larger-cross section rear knobbie.

The bike is comfortable, everything fits . . . it lost the drag race. Suzuki also offers a modified cylinder that should change that. I liked what the owner's handbook said about breaking-in. "The RM125 is manufactured using the latest know-how relating to two-stroke engines and thus requires relatively short break-in period. However, it is advisable that the machine be operated for the first 30 minutes using only half-throttle. This practice will help all moving parts to break in and will assist in acquainting you with the machine. Once it is fully broken in, you can be assured of high performance during off-the-road riding [and] in competition."

Know anybody who can ride this new racer and resist the temptation to gas it, even for the first half-hour?

Lowboy bikes seem to gas it better than the high riders. They stay flat longer and corner faster. The Kawasaki KX125 is one of these. It has a 32-inch seat height, seven inches of ground clearance with a full downpipe. It is a conventional bike, something I think we will be drifting back toward, but not duplicate.

BELOW—New Suzuki engine has six transfer ports instead of the usual four. Piston-port engine is close to its competitors in hp department but five-speeder limits it.



KAWASAKI

ABOVE—Little disc valve engine has most grunt and least power at the peak. Also has greatest hp potential. Note all the plumbing from side-mounted carburetor to air box.

125 MX SHOOTOUT

You wonder how racers with an antiquated 6.3 inches of front fork movement and 3.75 at the rear axle can work so well over a tight, twisting motocross course. The only place it wasn't as quick as the tall bikes was down the straight whoop-de-doos, and those high-speed ripply turns. But in the other areas the KX125 was faster and easier to ride. It even got off the line in good form.

There are several reasons why the new Kawasaki works so well. The chassis design is spot-on and made of chrome moly steel tubing fully welded for rigidity. The skinny fork legs look like all other last-year's forks, except these work. It is apparent they've found the proper combination of hole sizes and placement within the fork damping system. 5-30W oil is used. 10-40W will make them stiffer, and ATF will soften the ride.

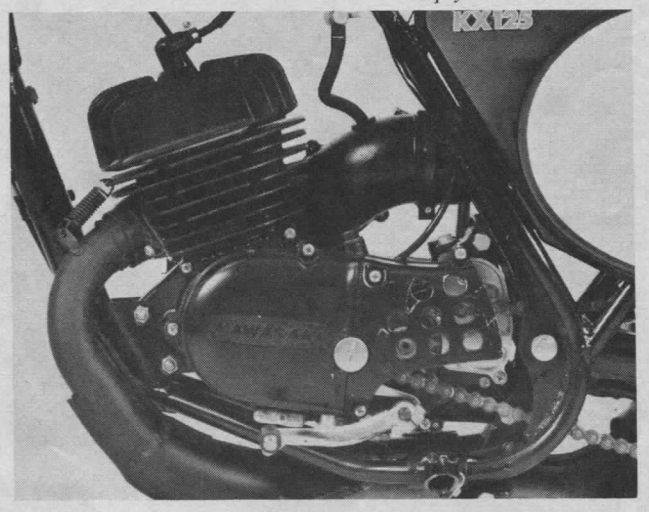
The rear shocks are new. They have a progressive-wound spring with the tighter coils at the top, the open-wound, harsher coils contained by the aluminum shock body below. In theory, half the spring is sprung weight, the other half is unsprung. By placing the loosely wound coils at the bottom they have put the lighter-weight part of the spring on the unsprung part of the chassis. The aluminum body, mounted to the swing arm, weighs less than the steel rod-and-piston assembly which is fastened to the frame. The shock fluid is on both sides of the piston, so its role in the suspension opera is undetermined. These are all little things, but when done right—as this bike obviously is—it adds up to a good ride.

Sitting/standing positions are good, access to the levers easy and direct, and there's nothing sticking out to snag your bod. One gripe: The end of the shift lever sticks out too far. When you lay the bike down, the footrest folds and the end of the shifter digs in and gets bent like a pretzel. You could hack off a half-inch and save yourself some grief in the future.

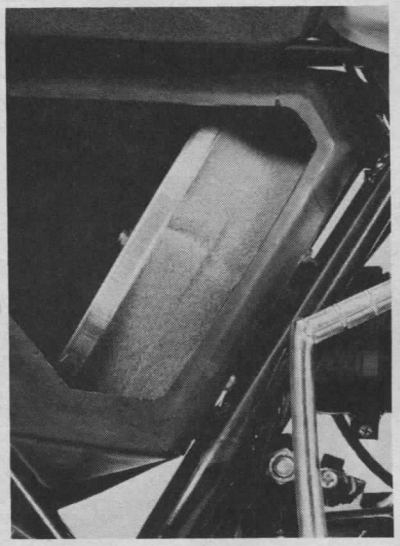
Two things in the engine make the KX125 the easiest of the lot to race. It has a rotary valve engine that puts out hp and torque. You usually can get one or the other but a disc valve allows both. The other factor is a six-speed gearbox with a spread between first and sixth that's greater than the other three. Gearing is just right. You can wheelie the Kaw in low and second by twisting the throttle open. Sixth is the tallest of the lot and if the KX spun tighter it

KAWASAKI

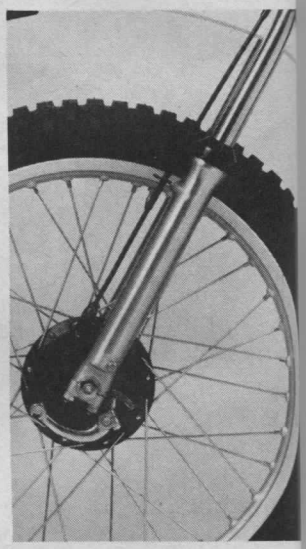
BELOW—Left-side view of engine shows enduro kinship. Oil-pump cavity is empty.

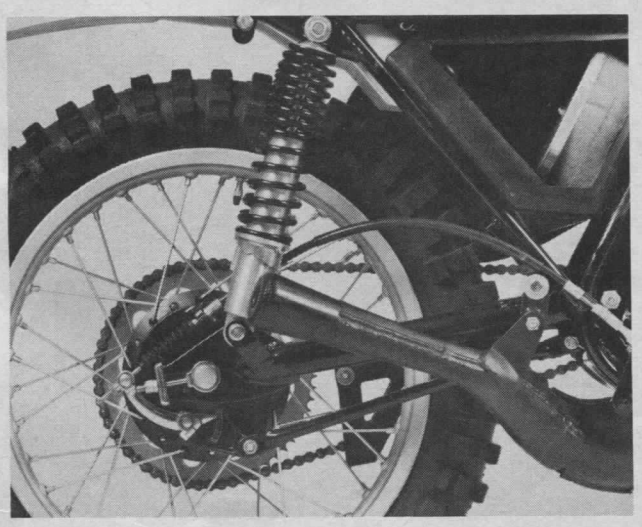


BELOW—Side hole in air filter is for getting element out; air enters from top.



BELOW—Forward-pull f brake provides good feel lotsa leverage too.





ABOVE—Megaphone muffler outlet is a classic, although noisy as the others. Aluminum-bodied Kayaba shock unit worked very well and didn't fade under our testing.

ABOVE—Shop Manual is truly that. Toolkit is hardly up to manual, you need lots of your own. They do give away three main jets, but neglected to allow us a spoke wrench.

would outrun the screaming YZ.

Ratios within the gearset are matched perfectly to the engine's output curve. A 26mm Mikuni, housed within the right-side engine case, feeds the engine through the rotary valve. There is a grommet-covered hole in the case that allows you to make minor idling adjustments. Any majors like needle lifting or main jet swapping require the removal of additional covers. A fully covered carburetor has its problems, but stays clean in its own little room and that's good.

This bike has an oil-wetted, open-pore foam filter like the others. It also gets air from under the seat as the others do. A plastic air box fits within the triangle between rear wheel, seat and engine with service accessibility to the air filter element made simple by removing the side cover/number plates. A huge bit of piping ducts the incoming air from filter to carburetor housing. This tunnel also carries the fuel line.

In skipping over the break-in procedure for the KX125 they say to race the engine slightly, but never open to full-throttle. This is for the first hour of operation. So play-ride it around at half-throttle or less, stopping frequently to check spoke tightness and chain slack. Of the three bikes delivered this one came with additional main jets, and a wrench for adjusting the rear shock spring load.

A fault found with Kawasaki's KX125A is their choice of tires. (Yamaha and Suzuki have made the same error.) Honda's well-seasoned and much-raced CR125 does have a set of tires that *do* work. Not that the 3.50x18 Bridgestone rear gets a better bite than the 4.10s used by Yamaha and Kawasaki: the difference is up front where they steer.

The 2.75x21 Bridgestone Honda uses looks just like a Trelleborg and probably works as well, too. You can fairly flip the little bike around without having the front tire try to escape. Berm shots are a ball. Suspension works as good or better than Kawasaki's, with a heavy effort required to bottom either end. At 188 pounds, getting airborne is an occupational hazard. The little bike launches easily and stays in flight for a long time.

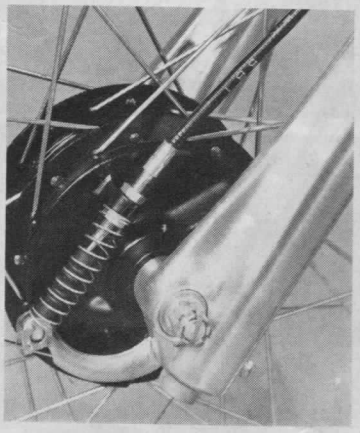
The race for the first corner is touch and go. First gear is very tall and the CR engine literally has no flywheel effect. Power comes in wheel-spinning spurts with no long periods of winding it out. The thing just explodes. This type of hp requires a very close-ratio gearset and Honda's is the closest. In order to race this bike successfully you've got to be lightning-fast at the shift lever. If you find yourself in the wrong gear, usually a quick jab at the clutch lever will get the rear tire spinning again.

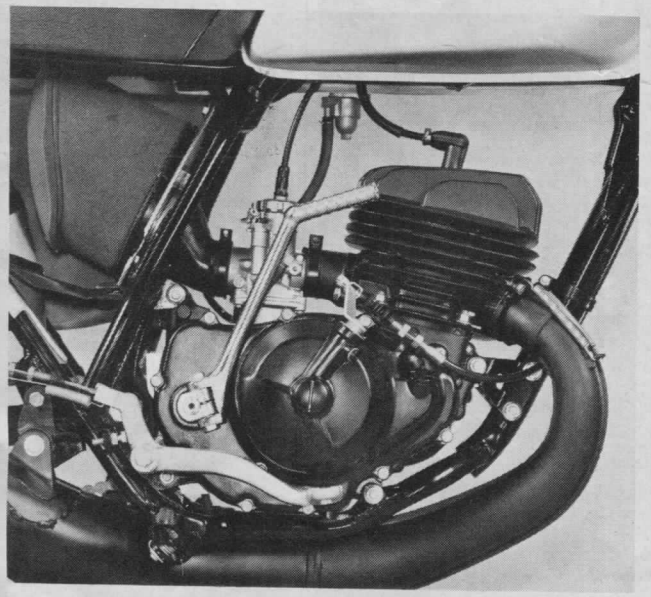
continued on page 61

HONDA

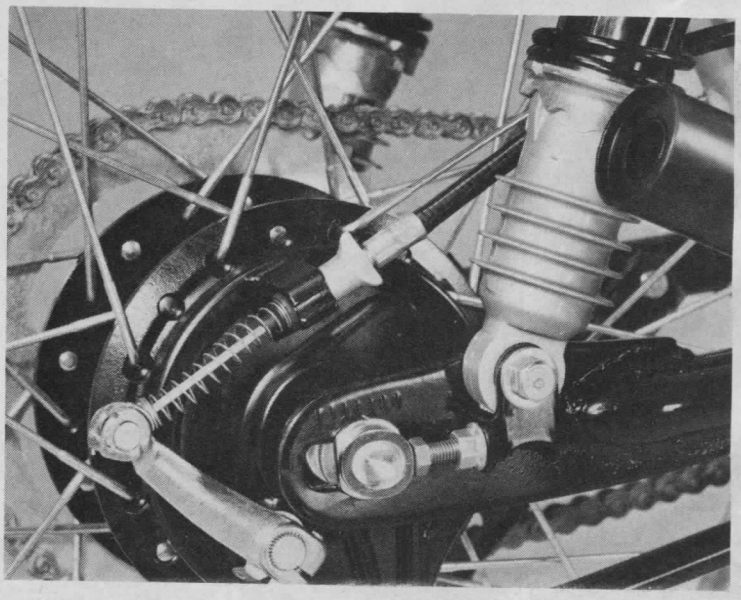
BELOW—Elsie has an Owner's Manual the size of Kawasaki's, and just as few tools too.

BELOW—Return spring pushed rubber guard off cable end. Note forward-pull brake arm.





ABOVE—Little engine is still most popular in the field. Adept engineering and magnesium side covers allow near-20-hp unit to scale in at 46 pounds.



ABOVE—Simple rear brake adjustment can be made on the starting line with your fingers. Finned-aluminum Showa rear shock units are unchanged as is most the CR for the updated M-series racers.

continued from page 33

Last year Honda's CR outsold all other 125s. This was not because they have the strongest dealer network, or Marty Smith. They are number one simply because the kids who make up the buying crowd feel they have a better chance of winning on a Honda than any other 125. There are additional, less important factors. Like all the aftermarket goodies to make it go that are readily available. You can purchase suspension and horsepower for the bike but too many fledgling motocrossers buy the go-fast goodies before they learn to go fast with what they've got.

The CR125M is a very good example of an out-of-the-crate, ready-to-race racer. It has changed very little from its original concept just two years ago. Most significant of these was the decision to use a Keystone-type top ring in place of the rail. A Keystone is not pressure-sensitive like a Dykes. Its tapered edge is effective for keeping the ring free, not allowing it to gum up.

Significant improvements have been brought to the CR125M, the most current model. In its quest for more torque and hp, Honda has made minor changes to the cylinder. Volume in the downpipe has been altered to assist in the power increase. The rear wheel sprocket mounting studs, a past problem, are a couple mm bigger now. And finally the phoenalic bushings in the swing arm are being made to fit closer in the hopes that this problem will also be solved.

The cast-aluminum cylinder has a cast-steel liner thick enough to allow four overbores. Honda has the pistons. Both engine outer cases are magnesium, and the rest of the bike is virtually unchanged.

It is still the high-output little screamer that wins so many races. With it comes a big magazine-size owner's manual that step-by-step disassembles the complete motorcycle. It also goes into detail on the subjects of maintenance and inspection. The book is thorough and should be a great help for anyone who has purchased a CR125M. It also has a paragraph on running-in the motorcycle: "When first riding a new or reconditioned motorcycle, or after replacing the piston, rings or cylinder (which must be broken-in), operate the motorcycle for the first hour (about 16 miles) using not more than half-throttle and shifting gears so that the engine does not lug."

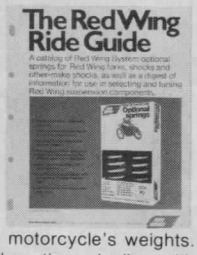
Now I ask you, what racer-to-be is going to ride this brand-new shiny motocross bike for a whole hour . . . without gassin' it!? •

catalogs

BASSANI PIPES

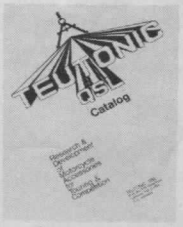
Bassani Manufacturing produces a brochure listing their complete line of exhaust systems for motorcycles. Systems for Honda, Yamaha, Suzuki, Kawasaki, Bultaco, CZ, Husky and more are listed by model, style of pipe and dbA sound level. Also listed are accessory items, silencers, spark arresters, rebuilding kits, etc. Send 50¢ to Bassani Manufacturing, 3726 E. Miraloma Ave., Dept. MC, Anaheim, California 92806.

RED WING



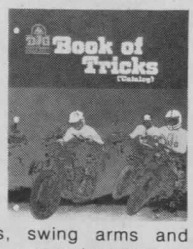
Red Wing offers a really informative catalog that features their complete line of fork springs and rear shock springs. Charts are provided showing the correct spring to use based on the rider's and motorcycle's weights. Also included are special sections dealing with Cafe Racer applications and determining the proper spring rate for forward mounting of shocks. Write to Red Wing Group/Mac, 200 Park Ave., 42nd Flr., Dept. MC, New York, New York 10017.

TEUTONIC QSL



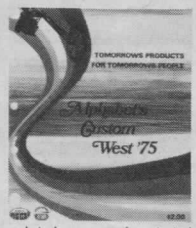
Teutonic puts out a small catalog featuring their "Total Comfort Package." Included are a solo seat, rumble seat, back rest, and a variety of racks all designed to reduce fatigue and increase your touring pleasure. To go on the rack is the big new "Grizzly Bag" that's big enough for a regular sleeping bag with room left for personal belongings. Contact Teutonic QSL, Post Office Box 778, Dept. MC, Chula Vista, California 92012.

DG



DG Performance Specialties Inc. has just released their latest "Book of Tricks" catalog. Polishing, porting and reed additions are featured in addition to a variety of carbs, radial heads, pipes, tanks, swing arms and shocks. DG also makes a complete kit that totally tricks out your CR125/250 Honda. For added info write to DG Performance Specialties Inc., 5552 La Palma Ave., East, Dept. MC, Anaheim, California 92806.

ALPHABET'S



Alphabet's Custom West '75 is a semi-glossy catalog that's aimed directly at the road rider. Featured are such things as custom pipes, tanks and seats, oil coolers, batteries, cams, Pirelli tires and tubes, and a total selection of custom and general accessories. Look your best all season long by sending $2 to Alphabet's Custom West, 821 W. Gardena Blvd., Dept. MC, Gardena, California 90247.