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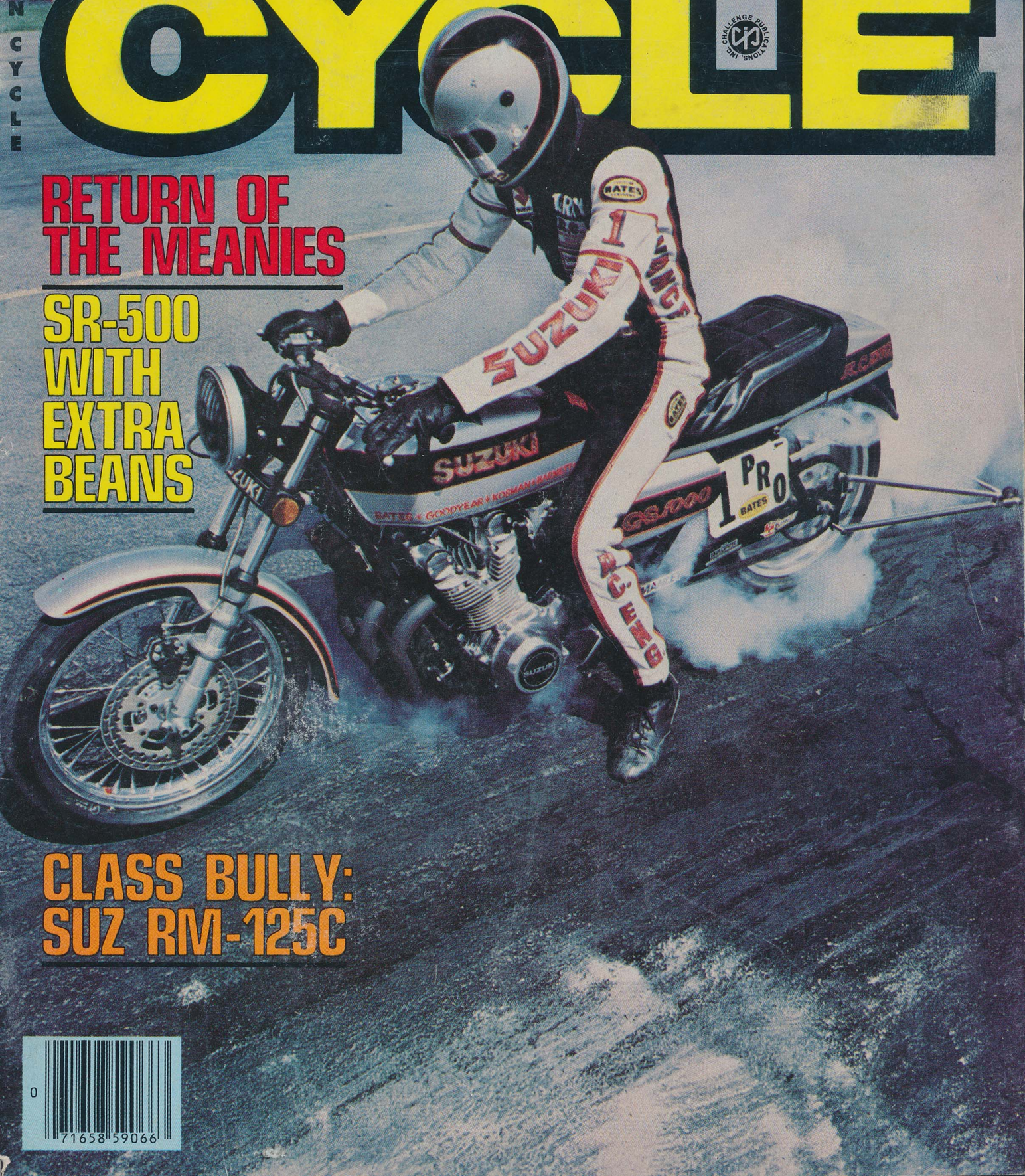
# MODERN CYCLE



## RETURN OF THE MEANIES

## SR-500 WITH EXTRA BEANS

MODERN CYCLE

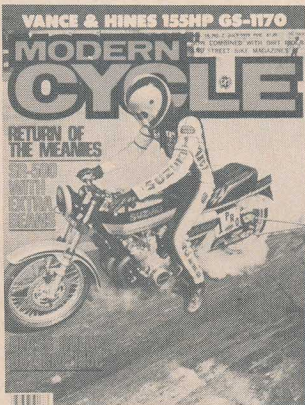


## CLASS BULLY: SUZ RM-125C



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**ON THE COVER:** Terry Vance warming up the skins on the Vance and Hines-RC Engineering GS-1000 plus. Photo by Dan Fitzgerald. Photo by Jeff Peck.

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# RETURN OF THE MEANIES

## Kan the New KX Kope?

By Ned Owens

### KX-250A-4 Track Test

Although they have been in the thick of things as far as factory participation goes in national motocross, Kawasaki was conspicuously absent from the competition on the show room floor. While Suzuki and Yamaha thumped each other repeatedly and traded wins at tracks all over the country, Kawasaki doled out some half-hearted efforts with replica paint jobs and little else.

The dealers cried out for a 'crosser that would be worthy of the Jammer, himself. Years went by and Kawasaki

continued to build potent factory scoots. When would they tool up and run off some of these replicas?

Finally the time has come, and the first of the lime-green repli-crossers, the KX-250A-4, is available to the public. For all intents and purposes the machine is a very close copy of the bike that the factory team raced last year in the stadium events—especially the motor design.

At a glance the bikes show some very trick features and good attention to detail. Strong, light goodies abound and a lot of effort was made to build a solid package. Did they succeed? How do you measure success? Will it appeal to the rider at whom Kawasaki has leveled their guns? Did the transition from "factory" to "assembly line" lose much in the final product? Can they do battle with the RMs and YZs at all levels of competition? Or is the modest suspension aimed at an all-out attack on the stadiums by local pros? Hmmm. All these things should be considered. Read on.

#### POWER PLANT

At the heart of the lime-greenie is a 249cc reed-valved air-cooled two-stroke engine that pumps an estimated 40 bhp (measured at the brochure). While the design of the overall motor is fairly common there are a number of items that set it apart from it's contemporaries.

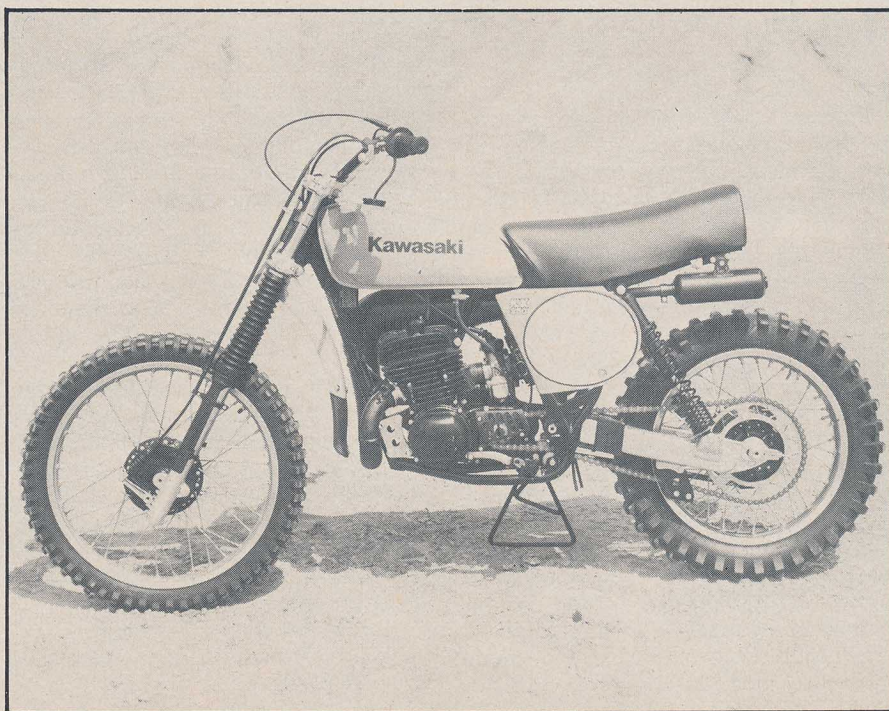
Designed and patented by Eyvind Boyesen, the reed valve assembly utilizes phenolic petals. The specially designed reed assembly is built with the

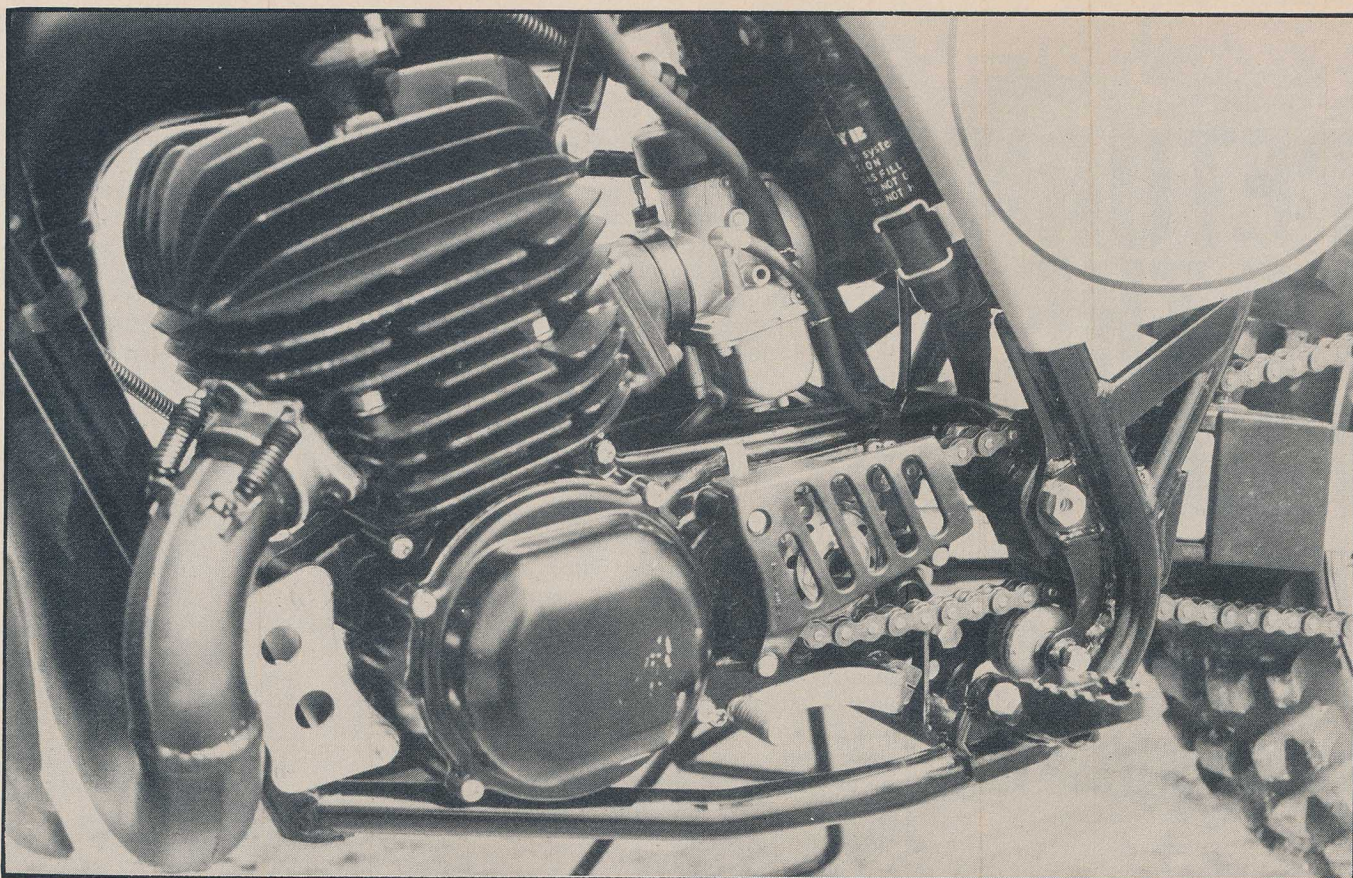
specific Kawasaki porting specs in mind. Boyesen reportedly had a hand in the cylinder design, too, to reach that point. Using a process Kawasaki calls "electrofusion," the cylinder is a cast aluminum, liner-less unit with a chrome bore. This enables the KX to utilize a full 249cc displacement because no boring is possible. Wear is limited to .10mm (.0041 in.) so the KX won't favor a rider who doesn't keep his filtering and intake maintenance up to par.

A healthy 38mm Mikuni feeds the cylinder through a single element air cleaner. The foam filter resides in a very practical air box designed for the current day high expansion chambers. Instead of forcing the filter down through the triangular hole at the top of the airbox (a la RM Suzuki), a large access hole in the side of the air box is exposed by removing the right side number plate. Filter changes are a lot more sanitary as a good seal can be assured and none of the foreign matter found in airboxes (leaves, dead bugs, seat bolts, etc.) can be easily knocked down in to the intake tract.

Ignition comes from an inner rotor magneto in combination with a capacitive discharge electronic unit. The stator plate on the mag can be adjusted to alter the timing and can be checked either statically or with a strobe light. Because the CDI requires no periodic timing, most riders will find this an unneeded asset, except after engine disassembly.

*Gold anodized rims, swingarm and motor mount plates highlight the cosmetic touches.*





Five-speed engine, nearly identical to the factory power plants, is fed by 38mm Mikuni and sparked with CDI.

Transmission and clutch configuration and layout is standard Japanese. The tranny features five well-spaced gears that mate with the crank through a multi-plate wet clutch. Actuation leverage has been carefully figured to provide a very light clutch—one that is literally a two-finger operation. This lightness is apparent on most 125s but is unusual on a 250. More on this later.

Liberal finning is prevalent on the black-painted cylinder. A six-bolt radial head tops off the entire power plant.

### CHASSIS

Built on a semi-double cradle design, the frame incorporates the engine as part of the strength of the chassis. A brace from the backbone to the cylinder head acts to stiffen the entire chassis. Eliminating this brace (as some riders have already) will lead to the eventual breakage of the motor mount bolts, tabs or the cases themselves. That gives you some idea of the necessity of the brace. Steering caster is at an even 60 degrees.

Rather than use a full laydown cantilever rear suspension, Kawasaki opted for a more upright shock of lengthy proportions. Measuring in at a whopping 16.5 inches, the remote reservoir gas Kayaba shock attaches at the rear third of the swingarm and up below the seat at the rear of the number plate. This results in two things—one good; one not-so-good. Because the top of the shock is not behind the number plate it

allows the bike to be very narrow. Gone is the “riding breeches” appearance and annoyance to the calves when leaning back that is apparent on the fully cantilevered models. The not-so-good part is that the shock garners only 5.3 in. of shaft travel, thereby limiting the rear wheel travel to 8.5 in. This sounds short compared to some of the current machinery, but we’ll explain the effects of this later.

Anodized gold and featuring some exquisite welding, the swingarm is a super strong, yet light, composition of forgings and extrusions. It pivots on no less than four needle bearing assemblies, which is undoubtedly one of the keys to the strength of the arm. A tubular axle and swingarm pivot bolt are just a couple of the “works” touches on the arm. These “hollow” bolts are not only lighter but stronger than conventional solid pins. These strong cross members also create some of the rigidity of the swingarm.

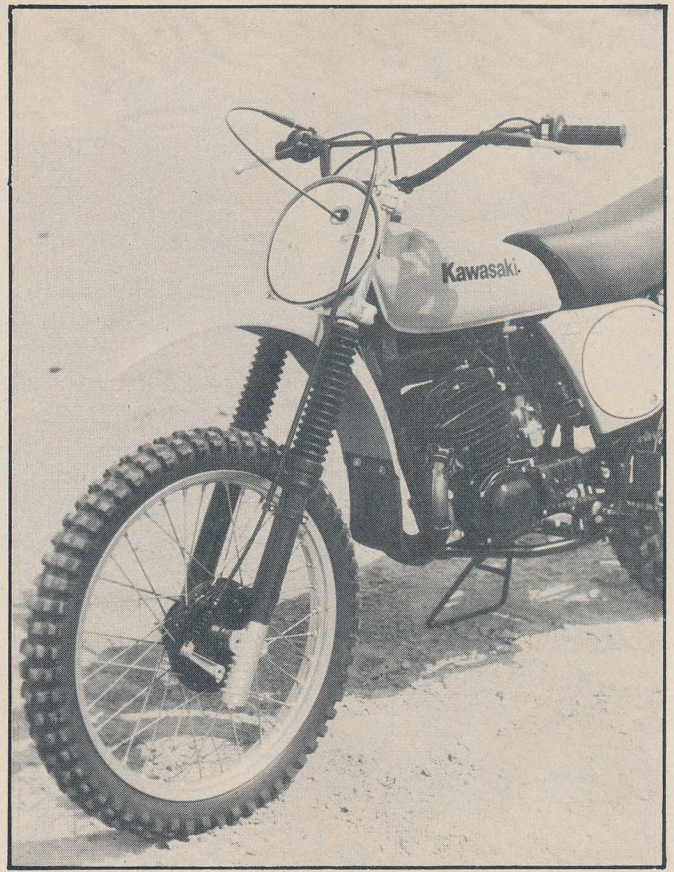
If Kayaba doesn’t have fork design down to a gnat’s butt, then they don’t have anything. The Kayaba-built forks on the RM Suzuki are some of the finest suspenders available. The units on the Kawasaki are, if possible, better. Producing a silky-smooth 9.3 in. of front wheel travel, these leading-axle babies are nearly flawless. Damping is spot on—rebound and compression. The combination of spring and air is extremely plush.

Besides the admirable action, the

forks display some other neat features. Not only are fork boots used (to protect the seals) but a fork guard reaches down nearly to the axle to protect the sliders from flying rock damage. Fins, cast on the bottom of the sliders, do double duty as a protector and also to aid cooling at the “action end” of the hydraulics. Another well-conceived feature is the bolt-on brake backing plate. Gone is the slop inherent in the “tongue and groove” method utilized by nearly all the rest of the current machinery. Wheel removal is aided by this backing plate which stays put. By merely pulling the axle and twisting the opposite fork leg away from the wheel, the hub, et al, comes off simply. Nice.

To provide as flex-free (as is possible) fork assembly, the triple crowns are both four pinch bolt models. Add to this tapered roller bearings in the steering head instead of the loose-ball arrangement, and you end up with forks that go up and down and back and forth with a minimum of fuss. Resistance to damage (severe shocks, i.e., colliding with a squid) and long wear life are both plus factors of the tapered bearings.

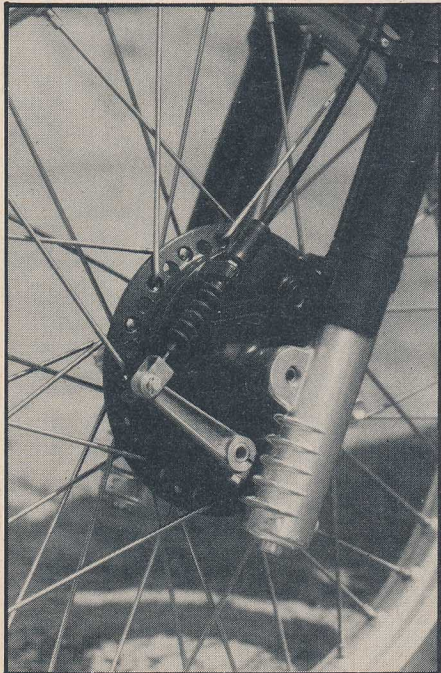
Both hubs are magnesium castings. The front is of a conical design, while the rear is a full-width unit. Spokes on our test model were heavy duty nine-gauge wire laced to some spiffy anodized (gold, again) rims. A 300x21 and a 500x18 set of Dunlop skins took up the space between the ground and



*Sporting 9.3 in. travel, Kayaba leading axle forks are superb.*

the rims at opposite ends. (The front tire on our test model was worn out so objective evaluation of this tire is not possible. The rear was in better condition and provided excellent traction on nearly all track surfaces ranging from tacky to dry and hard. More on this later, too.)

Brake design drew mixed reviews from testers and kibitzers alike. The front binder is a standard single lever, double shoe construction that features



excellent progression and good stopping power. As with the clutch, the leverage ratios have been finely tuned to come up with a very light feel at the bars.

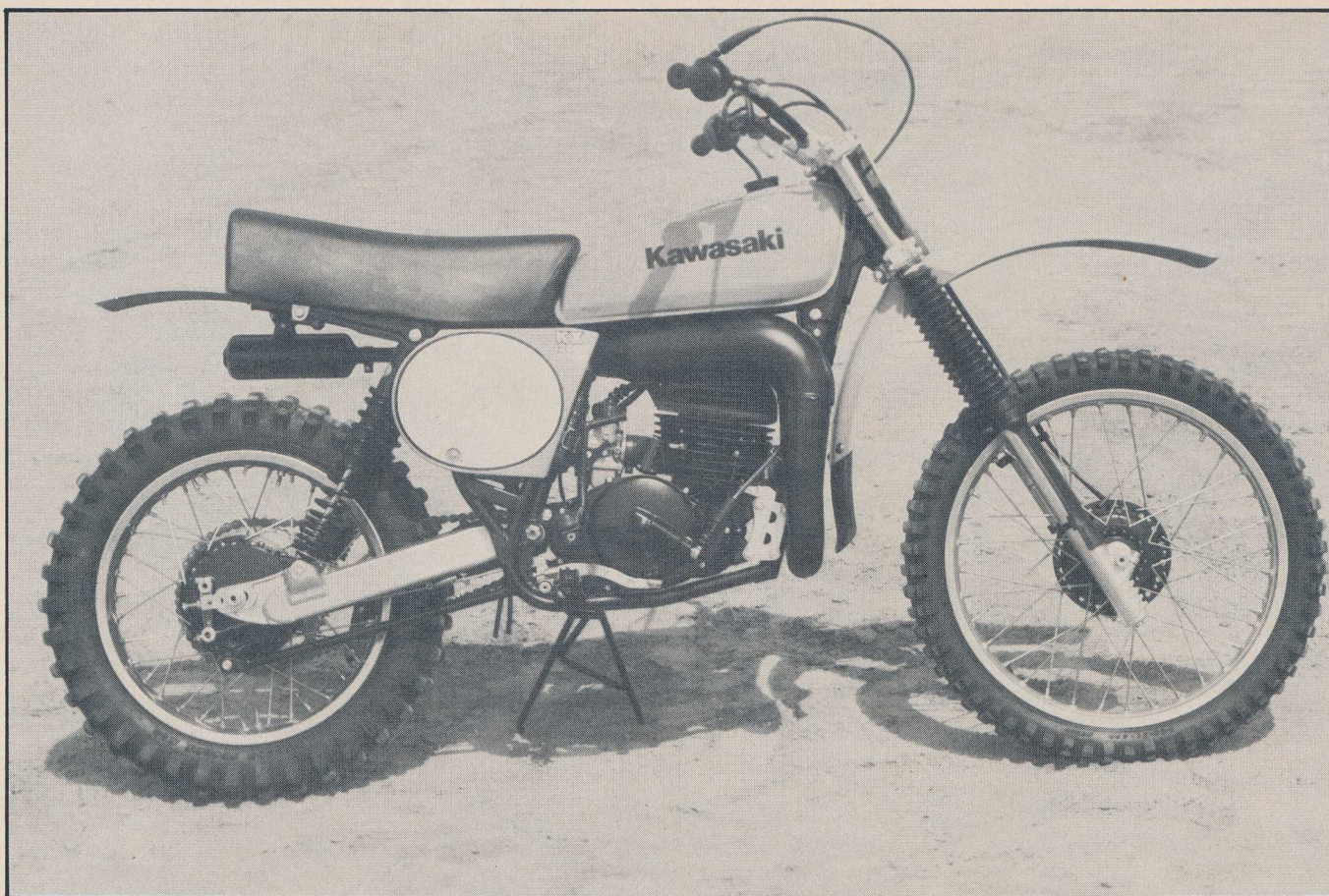
At the rear, however, is a mix of engineering that just doesn't jive. Whereas the front was progressive and smooth, the rear is touchy, overly sensitive and prone to locking up with the slightest provocation. This, we believe, comes from the unlikely mix of a full floating backing plate in conjunction with an odd-pull brake rod. It would seem that the full floater could work with a rod, but only if that rod pulls over the swingarm pivot. Unfortunately it does not pull near that bolt and the result is almost a full canceling of the progression that a full floating brake provides. This problem could be in the design characteristics of the shoes/backing plate causing a self-energizing situation, but even in that event a cable instead of the rod would seem to help. Since we weren't able to go at the KX with our own tools, the customer will most likely have to work this out. Unless he is used to super-sensitive brakes, as on the current Yamahas, a rider will find that he must alter his riding style to accommodate the rear binder.

Something that never occurred to us before, popped up on the KX and

*Cast magnesium conical front hub features backing plate that bolts to fork leg—eliminates tongue-in-groove slop.*

caused us to test a number of other set-ups. Something that was quite impressive on the Kaw was the fact that the rear wheel spun with very little effort. At first we thought that it was some trick bearings in the hub or some such thing, but we traced it to the fact that the KX does not have a spring-loaded tensioner. Instead, it has two stationary rollers—one below the chain; one above. The rollers feature sealed bearings and keep constant tension (alternately) on the chain. A guide on the swingarm helps channel the chain in adverse conditions.

(To test our somewhat new-found idea we took the tension off the spring-loaded tensioner on an RM-250C Suzuki and spun the rear wheel. It turned as effortlessly as the Kaw. Then we let the tensioner back down against the chain and gave the wheel a spin. Roughly, the tensioner slowed and stopped the wheel before it turned *half* as many revolutions. Since this friction absorbs energy, we can only speculate at how much power is lost with this type of tensioner. The lack of a spring-loaded tensioner no doubt enhances the power that the KX-250 delivers to the ground, so it is a very positive design element. In the near future we hope to get some figures on the amount of power lost to a spring loaded tensioner. It may prove to be insignificant, but we think not. We'll see.)



Some of the other details are strong, folding, non-slip pegs, durable plastic fenders and side number plates and an aluminum tank. Transition from the seat to the tank is smooth and narrow. The cables have very thick housings that give a very positive and "spongless" feel to the controls.

### TEST THRASHING

Lightness. That's what the KX-250-A-4 is all about. From the moment you climb aboard every sensation that feeds back from the machine spells light. The throttle is very light. Owing to the design of the twister itself and the good cables, it feels as though a much smaller carb (with much smaller and lighter spring) was being opened.

Your left hand is delighted by a clutch pull that is akin to that of an 80cc mini rather than a potent 250 class warrior. The front brake lever operates smoothly and positively. It is nearly impossible to keep mashing on the lever after the brakes are on—it's those cables again.

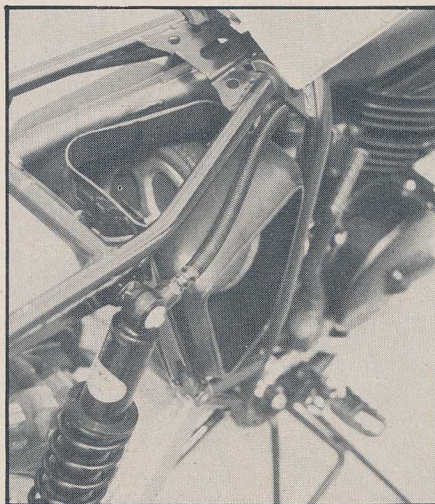
Movement of the bars is also light, without some of the high spots or clicks found in some steering set-ups.

Along with the lightness is the very narrow feel of the KX. The machine actually feels more like a 125 than a 250. There are a couple of other machines that may get the total weight down to match the KX, but it is doubtful that they also provide the

light feeling of the controls and the comfortable narrowness of the seat/tank/peg arrangement.

What this lightness, in all areas, means is that the bike can be ridden with *less effort* than nearly any machine in its class. The extra strength inputs on heavier bikes, however slight, add up at the end of a couple of half-hour motos.

Complementing this attention to lightness should be a killer engine and impressive handles. There is either not enough or too much of both, depending on how you view things. Confused?



Reservoir hose and reservoir are neatly tucked away from rider's legs and are well protected.

Read on.

As far as the handling is concerned, the KX can be ranked among the best. There are a couple of unsettling factors, though. On rare occasions, the front wanted to wash ever so slightly. Since it was not common and the action of the forks was so perfect, we pinned the blame on the half-dead (or half-alive, if you prefer) front tire. Despite this occasional bother, the bike steers precisely and tracks very well. The light steering input allows for quick and easy corrections over loose terrain. The overall light weight enables the rider to flick the bike around like a 1-2-5.

Another unsettling area is the rear suspension. Although, we found the 8.5 in. of rear travel to be adequate on our test track with a variety of riders, it is possible to foresee a need for more movement in some cases. Some of the pro riders will need more travel, but nearly everyone else will probably be happy with the stock numbers—that is, if they can get over the psychological aspect.

Since bikes are coming with as much as 11-inches of rear suspension, many riders feel that any less is inadequate. It has been our observation that for 90 percent of the riders a properly damped 9.5 in. is enough to do the job and do it well. Perhaps the other 10 percent could use more travel, but

(Continued on page 76)

# MEANIES

(Continued from page 48)

the first ninety are not making good use of 10-11 inches. Besides, better chassis integrity can be maintained with slightly shorter suspensions. (This is something that the new CR Hondas are susceptible to—chassis wallow.)

As a package, the suspension on the KX is well matched front and rear. Putting a longer shock at the rear (as some have proposed) would, we feel, mess up the good turning qualities of the bike. What may be a happier set up is to choose an aftermarket shock of the same length, but that offers more shaft travel. There appears to be some room left at full compression of the rear and an extra inch gained would bring the travel to a respectable 9.5—without changing the suspension geometry.

It is at this point that we introduce the power characteristics of the engine to this package, and therein lies the enigma. The chassis is, effectively, tailored for 90 percent of the riders, but the engine, on the other hand is groomed for the top ten.

An explosive, narrow power band requires all the attention of an expert rider to put it to the ground and turn quick lap times. Kawasaki even intimates in its literature and tech briefings that the power is for "experts only." We believe it. Those other than pro class riders will find it hard to navigate quickly on a track, especially loose ones. On loamy, moist tracks the KX is prone to wheelies, whether it is laid over, upright or being jumped. For lesser riders, the machine is a definite handful.

## CONCLUSION

The Kawasaki KX-250A-4 is close (oh so close), to being a definite power in the 250 class. There are parts of this machine that are absolutely flawless. There are also areas that are mismatched or need grooming. The bike steers well and is damped properly on both ends. While the rear is a little on the lean side in travel, it is by no means a terminal ailment. An extra inch might make all the difference for the expert rider. A less than expert rider can be happy as a little clam with the handling but will probably be spooked by the power characteristics.

With a wider power band that ex-

hibits more torque (perhaps more fly-wheel effect at the crank) and some milder porting, we would recommend it highly to good juniors and inter intermediates. With the motor untouched and another spot of travel, the bike is an expert class machine. It has this strange mix.

As an example of the unusual nature of the machine, test rider Joe Suebert said he would rather have a KX to teach motocross schools with than his RM-250—not on the basis of power, but on the light weight and its relationship to fatigue at the end of a long day. When asked what he would race on the other hand, he felt that he would have an edge overall with the RM because the package is more finely honed.

And that is probably what the bottom line comes down to. Compared to the RM-250C2, a bike that has undergone a steady, premeditated and positive evolution over a number of years and models, the Kawasaki KX-250A-4 is an admirable first effort. Only 2000 (or less) of the KX models will go out to the dealers this season at an undetermined retail price. With those small numbers, the KX greenies are not expected to grab the lion's share of the starting line. But they can quite possibly start massaging the psyche of potential customers who will be looking for a scooter next season.

These models are nearly identical to the mounts ridden in the stadium series last year. If Kawasaki follows through then we can expect to see a slick replica of this year's machines. The engines are nearly identical, but the Jämmer sported a full foot of travel on his new chassis. Watch out, Kawasaki is on the move.

(On the other hand, the quick turning, modestly suspended KX might just be the best out-of-the-box stadium racer offered. We'll see if someone tries out this theory as the supercross season progresses. ●

## KAWASAKI KX-250 A-4 SPECIFICATIONS

**Dimensions:**  
 Overall length ..... 2120mm (83.5 in.)  
 Overall width ..... 940mm (37.0 in.)  
 Overall height ..... 1185mm (46.7 in.)  
 Wheelbase ..... 1415mm (55.7 in.)  
 Road clearance ..... 300mm (11.8 in.)  
 Dry weight ..... 94 kg (207 lbs.)  
 Fuel tank capacity ..... 8 lit. (2.1 U.S. gal.)

**Engine:**  
 Type ..... 2 stroke, single cylinder, piston reed valve  
 Bore and stroke ..... 70x64.9mm (2.76x2.6 in.)  
 Displacement ..... 249cc (15.19 cu. in.)  
 Compression ratio ..... 7.6:1  
 Max. horsepower ..... 40 hp at 6500 rpm  
 Max. torque ..... 3.7 kg-m at 7000 rpm (26.8 ft./lbs. at 7000 rpm)

**Port timing:**  
 Intake—Open .....  
 Close .....  
 Scavenging—Open ..... 63° BBDC  
 Close ..... 63° ABDC  
 Exhaust—Open ..... 93° BBDC  
 Close ..... 93° ABDC

Carburetor ..... Mikuni VM38SS  
 Lubrication system ..... Petrol mix (20:1)  
 Starting system ..... Primary kick  
 Ignition system ..... Electronic CDI  
 Ignition timing ..... BTDC 20.5°/6000 rpm  
 Spark plug ..... NGK B9EV  
 Reed valve ..... Eyvind Boyesen's valve (Pat. No. 3905340, 3905341, 4000723)

**Transmission:**  
 Type ..... 5 speed, constant mesh, return shift  
 Clutch ..... Wet multi disc  
 Gear ratios:  
 1st ..... 2.33 (28/12)  
 2nd ..... 1.73 (26/15)  
 3rd ..... 1.41 (24/17)  
 4th ..... 1.16 (22/19)  
 5th ..... 1.00 (20/20)  
 Primary reduction ratio ..... 2.68 (59/22)  
 Final reduction ratio ..... 3.57 (50/14)  
 Overall drive ratio ..... 9.58 (5th)

**Transmission oil:**  
 Capacity ..... 1.0 lit. (1.1 U.S. qt.)  
 Type ..... SE class SAE 10W30 or 10W40

**Frame:**  
 Type ..... Tubular, semi double cradle  
 Steering angle ..... 45° to either side  
 Castor ..... 60°  
 Trail ..... 130mm (5.1 in.)

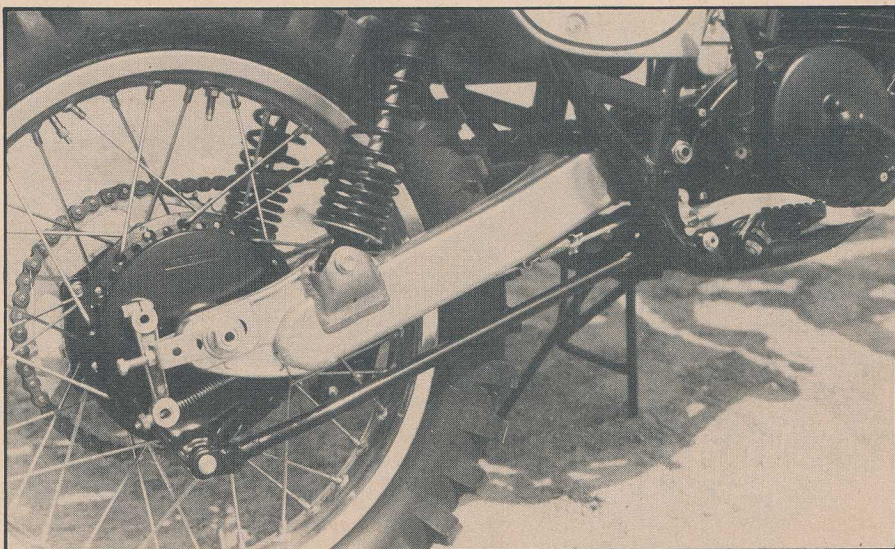
**Tire size:**  
 Front ..... 3.00-21 4PR  
 Rear ..... 5.00-18 4PR

**Suspension:**  
 Front ..... Telescopic fork  
 Rear ..... Swingarm

**Suspension stroke:**  
 Front ..... 235mm (9.3 in.)  
 Rear ..... 137mm (5.3 in.)

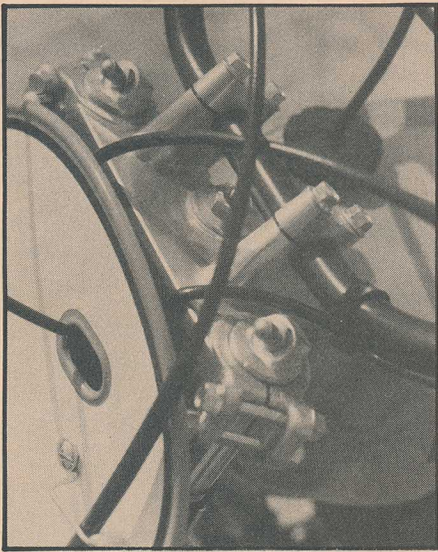
**Front fork oil**  
 (per shock absorber) ..... KYB G-10 or SAE 10W 270cc (9.1 U.S. fl. oz.)

**Brakes—Inside diameter:**  
 Front ..... 140x28mm (5.5x1.1 in.)  
 Rear ..... 150x28mm (5.9x1.1 in.)



Swingarm is meticulously constructed and pivots on four needle bearing assemblies. Tubular axle and pivot bolt add strength while subtracting weight.

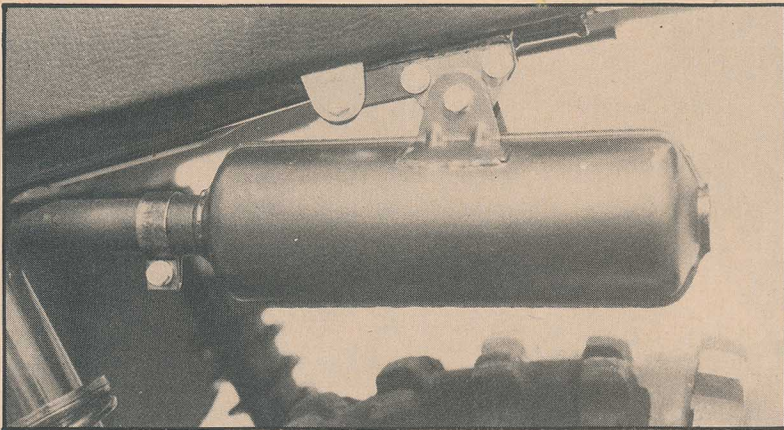
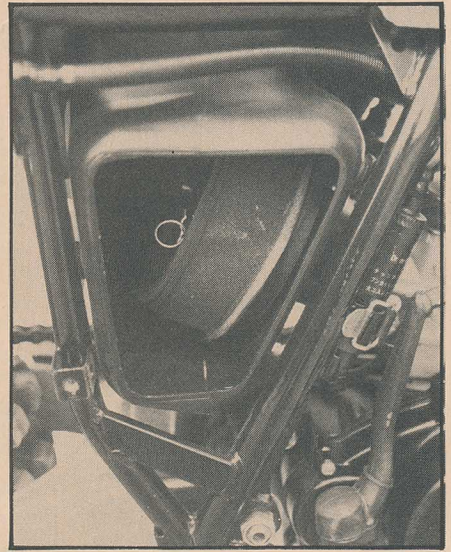




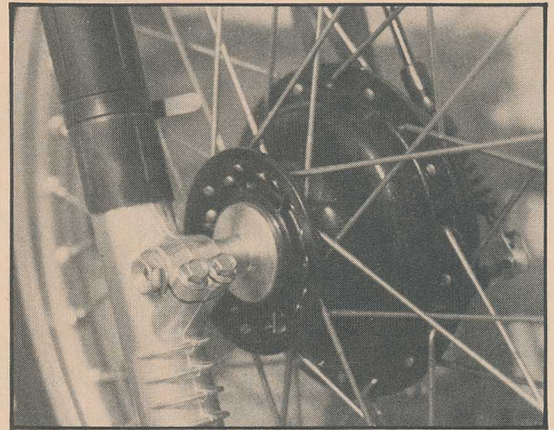
*Triple clamps feature strong, four-bolt design. Inside, stem rides on tapered roller bearings. Low effort is needed for steering.*



*Air box design and execution is good. Filter changes are made easy by "trap door" at side of box. Number plate side cover seals access hole with foam sealing strips.*



*Top mounting point for shock creates narrow bike by avoiding wide "hip" effect under side panels.*



*Floating rear brake is nearly canceled by unusual (for this type of brake) rod instead of cable.*

