

CYCLE GUIDE MOTOCROSS TEST

KAWASAKI KX125

Kawasaki's teeny Green Meanie is not so teeny. But it's really green . . . and really mean

PHOTOGRAPHY BY ART FRIEDMAN



Until a few years ago 125 motocross bikes were terrible little things. Instead of having been designed from the ground up as motocrossers, they were merely warmed-over versions of something else. The manufacturers would start with a street bike or trail bike, take off the lights and electrics, give it some radical porting, slap on some knobby tires, bolt on an expansion chamber and some number plates, and call whatever they ended up with a motocross bike.

The designers of those machines must have thought anyone who would stoop so low as to ride a 125 had no interest whatsoever in going fast. Or maybe they thought only rank beginners and meek little kids rode 125s.

Whatever it was that they were meant for, 125 motocrossers were better at tossing the rider off than they were at anything else. The short-travel forks were about as rigid as two strands of wet spaghetti. The rear shocks had all the characteristics of a pogo stick. Some of the engines were so peaky that you needed a feeler gauge to measure the powerband. The frames were made of bamboo or rubber or some other non-hardening material, and the frame designs showed about

the same level of thought and ingenuity that went into the building of a snowball. They usually made the wheelbase so short that the tires would almost rub together, and the layout of the seat, bars, and controls indicated that the bike was intended for a child or an incredibly small adult. In general, they were *really* bad little motorcycles.

If you wanted to rule the 125 class, all you had to do was get a good frame (or properly modify your existing one), bolt on some good suspension units, find a pipe and porting combination that gave a usable powerband, and find a way to pay for all that stuff. If you succeeded, it didn't matter whether or not you could ride worth a damn; your motorcycle was so much better than anyone else's, you *had* to win.

That was years ago. Since then, the bike companies have gradually realized that if a 125 motocrosser were properly built, more people would buy them, more people could ride them fast, and on some courses, they would actually turn quicker lap times than 250s or 360s. So, they started building bigger and better 125s.

Things were progressing nicely in the 125 class until last year, when Honda

unleashed the 125 Elsinore on the public. The class hasn't been the same since. The CR 125M literally blew the competition into the weeds. Instead of trying to be first overall, the other 125 riders would compete instead to see who would be the first non-Elsinore.

Suzuki soon responded with their best 125 ever, and Yamaha made their trick YZ 125 available. Although the Elsinore riders still generally dominated the class, they had to push a lot harder to stay ahead of the other "new breed" 125s.

Kawasaki was noticeably absent from the 125 class at first, but they were hard at work readying a 125 to add to their line of KX motocrossers. They had experienced a few last-minute problems with the KX125 and decided to iron out those kinks before putting the bikes in the dealers' showrooms. Late this year the KX125s were officially released to the public, and a month or so later we received one for testing purposes.

The *Cycle Guide* staff wanted to find the answers to two questions during its test of the KX125: Is this new Kawasaki a threat to the 125 Elsinore, and can a full-sized person ride it comfortably?

THE BIKE: The KX125 engine is small,

compact, and has a flat black finish on all its outer surfaces for added heat dissipation. A 56mm bore and 50.6mm stroke yield 124.6cc of displacement, and the compression ratio is 8 to 1.

The 125 uses a rotary disc valve intake system instead of an intake controlled by the piston or reed valve. The disc mounts on the right side of the crankshaft and, at the right time, allows the fuel mixture to enter directly into the crankcase. The mixture is then pumped by the piston from the bottom end into the combustion chamber through three transfer ports. The burnt mixture leaves the engine through a bridged, T-shaped exhaust port.

The cylinder doesn't have a steel liner, but instead uses an aluminum bore treated by a special electrical explosion called ELEX. A wire electrode is placed down the center of the cylinder bore and given a charge. The cylinder is then given an opposite charge, which causes the wire to

expand and hold in place by springs and flexible rubber bushings. The pipe runs under the engine and ends with a tapered stinger/silencer alongside the right swingarm leg.

The innards of the 125 engine are common to most two-strokes. Two ball bearings support the three-piece crankshaft, and the rod spins on needle bearings at its big end. The wrist pin moves inside a caged needle bearing at the small end. Straight-cut primary gears transmit power from the crankshaft, through the wet clutch, and into a very-close-ratio, six-speed gearbox.

The KX125 uses a magneto CDI ignition system. The magneto flywheel unit is mounted on the engine's left side, and the coil and CDI units bolt to the frame underneath the gas tank. A kill button mounts near the left handgrip.

The single-downtube mild steel frame cradles the powerplant neatly. Gussets

Unbreakable plastic fenders, snap-on plastic side panels which cover the airbox and double as number plates, a front number plate, and cleated folding footpegs are all standard items on the 125.

The workmanship and finish of the KX125 are well above par. All the pieces fit together nicely, and there are no unnecessary geegaws or gadgets, giving the machine functional good looks.

ENGINE AND GEARBOX: Starting our KX125 test bike was always an easy job, even when the engine was cold. It's equipped with a primary kickstart system, so the gearbox doesn't have to be in neutral for starting. If you pull up the enricher knob atop the carburetor and leave the throttle *completely* closed, a gentle kick of the starter lever brings the engine to life. The bike generally fired off on one kick, although a couple of times it required three or four prods.

When the engine was warm, the enricher wasn't needed, but the throttle had to be opened slightly while kicking. After a few seconds of warmup, the engine carburetes cleanly, so you can ride off without any surging or loading up.

When you blip the throttle open, the KX revs rapidly. This quickness can be attributed to the 1/8-turn twistgrip, coupled with the lightweight crankshaft and a small amount of flywheel inertia.

Since the KX125 is equipped with a rotary valve, the engine pulls well from just above idle in any of the six gears. When you turn the throttle wide open in the higher gears, the engine doesn't bog out; it just accelerates slowly.

The peaky little two-stroke doesn't start working to its fullest until it reaches 8000 rpm. Best acceleration comes between 8000 and 11,000 rpm, which is the extent of the narrowish powerband. The engine will rev to 11,500 rpm, but at this point there's a noticeable power loss. The maximum horsepower and torque are both developed at 9000 rpm.

As you get accustomed to the engine's power characteristics, you find that it's necessary to shift a lot to keep the bike zinging in the healthiest part of its power range. The transition into the powerband is smooth and gradual, so there's never a sudden burst of power to contend with. You can tell when the engine starts making usable power just by listening for a change in the exhaust note.

The KX125 is one of the fastest box-stock 125cc motocrossers available. Even with a 175-pound rider aboard, it is capable of cutting lap times close to those of larger displacement machines. But to do so, you must make a conscious effort to be in the right gear at the right time. Sometimes you'll have to downshift twice to get through a turn that requires only one downshift on a bigger bike or a torquier 125. At every motocross track where we tested the 125, there was at least one turn where this extra-downshift method was a necessity. The bike would pull out



explode and coat the bore with a thin layer of metal. The piston can have a tighter fit in the bore with this process, but if a seizure or broken ring ever scores the cylinder, it will have to be replaced because it can't be bored or honed.

A 26mm Mikuni slide/needle carburetor mounts to a plate that covers the rotary valve, so the bulge on the right side of the engine is the carburetor cover. Even though the bulge sticks out pretty far, it's up high and never causes any ground clearance problems.

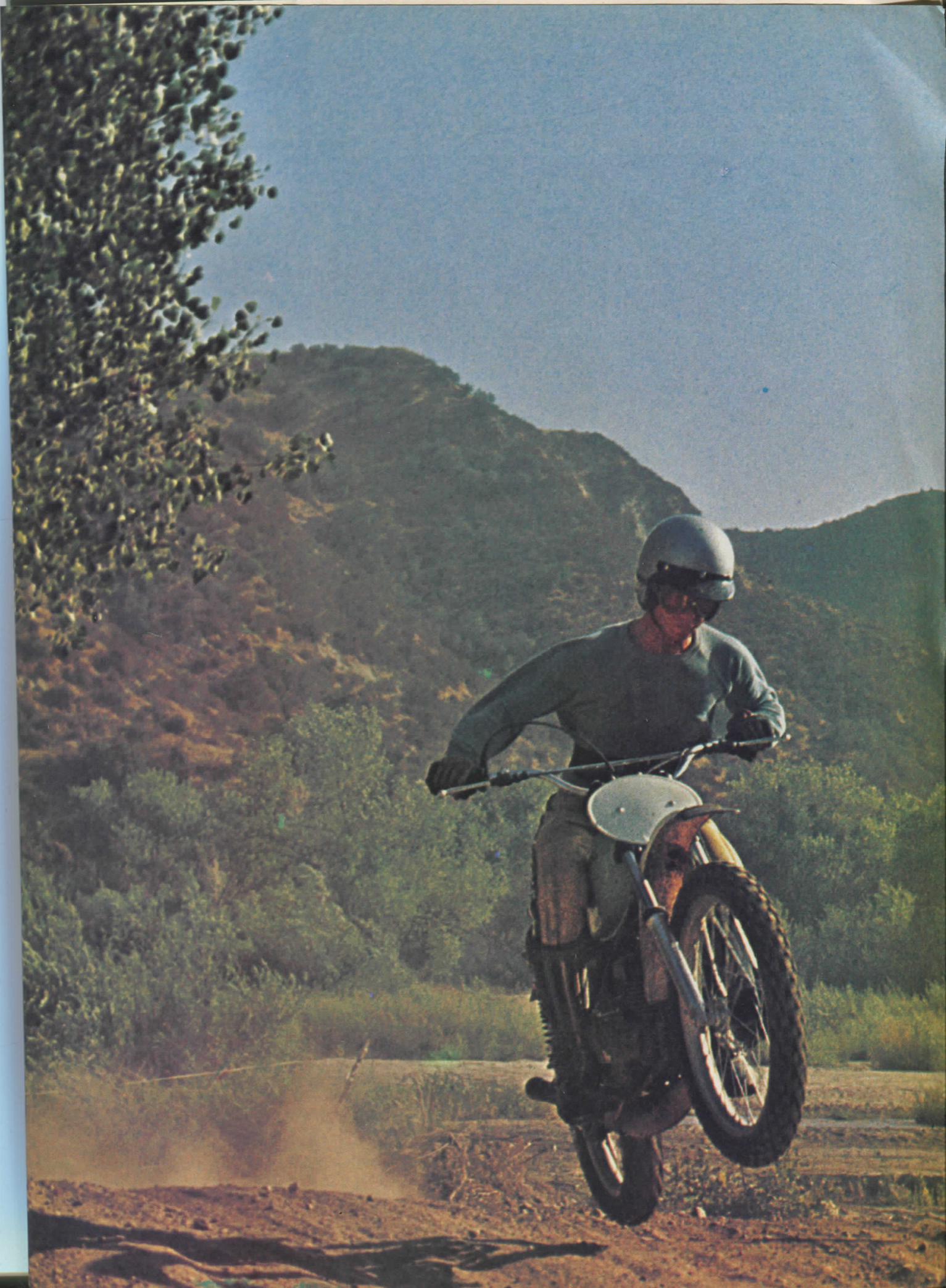
A huge plastic airbox mounts under the front half of the seat and houses a washable, oiled-foam element. Clean air gets to the carburetor through a large air duct that runs from the airbox to the carburetor cover. The fuel line, which contains an in-line fuel filter, also runs inside this duct.

The exhaust flows into a downswept

around the steering head and swingarm mount insure a minimum amount of frame flex, and are cleanly and smoothly welded in place. A 1.7-gallon steel gas tank rests over the one-piece backbone, and the long seat bolts to the top frame members.

Alloy triple clamps hold the slender front forks that allow 5.8 inches of wheel travel. The aluminum-bodied rear shocks look like they were designed for a much bigger machine and give the rear wheel 3.5 inches of travel. The rear shocks have dual-rate springs, and each front fork leg contains two separate springs which give the same effect as a single dual-rate coil.

DID shoulderless alloy rims spoke to small, conical hubs at both ends. A 3.00 x 21 Dunlop knobby tire comes on the front, and a 4.10 x 18 Dunlop is on the rear. Both brakes are the single-leading shoe variety.



of these turns cleanly and smoothly if we didn't do the extra downshift, but at a very lazy pace. After a few feet the engine will rev up into the powerband, but you'll lose valuable time if you're in a race. By downshifting the extra time before a turn, you're assured that there will be plenty of torque on hand to pull you through the corner quickly. As soon as you emerge, you have to upshift so you don't over-rev the engine. If you do it right, the KX125 really rockets out of the corners in a fashion befitting a larger bike.

A quick-turn throttle and closely-spaced gear ratios make this task easier than it sounds. A small turn of your right hand will open the carburetor slide all the way, and since there aren't any big rpm drops between gears, you can easily keep the engine in its peak performance range.

With six gears to choose from, you'll always be able to find one that matches the engine's powerband to the bike's ground speed. About the only time you'll use first gear is off the starting line; afterwards, second is low enough to get you

taking off in first gear, and after that we would shift without using it.

HANDLING: The KX125 tips the scales at 183 pounds. Only 80 pounds (43.9%) of the total weight is on the front wheel, and 103 pounds (56.1%) rests on the rear. The steering head angle is 31 degrees, and the front wheel has 5.1 inches of trail. With an average wheelbase of 53 inches the geometry and chassis specifications indicate that the bike will be relatively stable at high speeds, even though it is very short-coupled.

For the most part, these indications are correct. The 125 is light on its feet and easy to maneuver at slow and intermediate speeds. With a flick of the handlebars it goes through slow, hairpin turns quickly. You can charge up to the corner, point the front wheel where you want to go, dial on the power, and the rest of the bike follows the front wheel around. If the ground is loose, the front wheel has a tendency to wash out. You have to move all the way up on the seat for better front wheel traction in those situations.

All of our testers continually pushed the KX to its limit and were pleasantly surprised at the outcome. Many times we should have bailed off, but the machine's light weight and forgiving handling characteristics let us throw it around and get back under control very quickly. If you make a mistake, you can usually correct it as soon as you realize you are out of shape.

The 125 is a predictable jumper, too. The bike sails off all types of jumps with the front wheel higher than the rear, mostly because of its light front end. You don't have to yank on the bars or whack the throttle open to get the front wheel up. In fact, you may loop the bike if you do.

If you get crossed up in the air after leaving the jump, it doesn't present any problems. As soon as the KX touches the ground, it straightens up and goes where the front wheel is aimed. The bike doesn't wobble or shake when it hits; it just takes off in a straight line.

But cornering and jumping aren't the only things a motocross bike must do well. It also must be stable at high speeds over sandy, loose, and choppy terrain, and the KX125 often gets a little squirrely in those situations. The short wheelbase makes it relatively easy for the KX to fishtail from side to side. You must back off the throttle and keep a tight grip on the bars when this happens, otherwise the bike is liable to come out from underneath you. On smoother, harder-packed track surfaces, the bike doesn't exhibit this skittery nature.

The front forks do a great job of absorbing nearly any bump or rut without bottoming out. As you ride along, you can watch the front wheel bobbing up and down, but your arms and shoulders don't feel the severity of the jolts. Even when you hit these obstacles at an angle, the forks soak them up instead of sending the bike off in another direction. The forks never topped out, and we could only get them to bottom when we purposely landed on the front wheel after a big jump.

The rear shocks work nearly as well as the front forks, but the dual-rate springs will be too stiff for a lightweight rider. The softest spring preload is just a tad too stiff for a rider weighing around 175 pounds. While sitting, the ride is firm, but not harsh, and the rear wheel tracks nicely. But when you stand up, the rear end hops up and down, causing the seat to tap your behind. There's often a small amount of side-to-side motion, but it's nothing to cause any great concern.

If the shocks are barely right for a 175-pounder, there's no way they'll be right for a lightweight rider, and that's who the bike was primarily designed for. Since none of our testers weigh less than 165 pounds, we can only suggest that a softer set of shock springs are in order for a lighter rider, but we can't say specifically which springs will work the best.



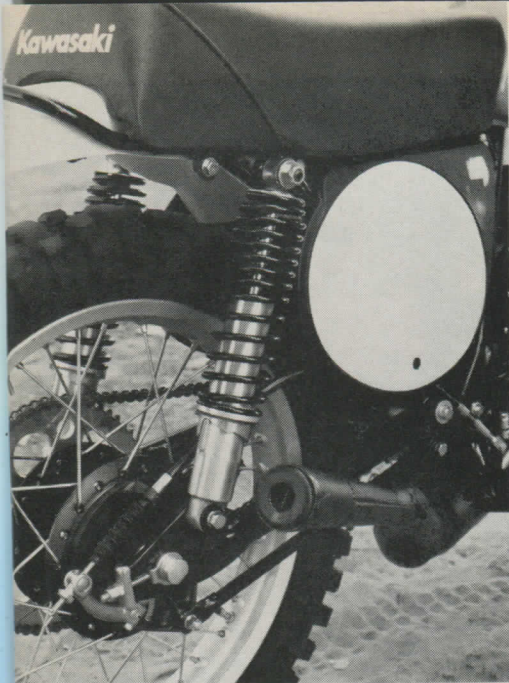
through any turns.

Kawasaki's engineers must have foreseen the need to shift the KX a lot, so they designed the shift mechanism to work positively. The shift lever is positioned in a spot that's easy to reach, and the lever throw is short. A tiny lift of your left toe will net a smooth gear change. However, the foot pressure needed to change gears is so slight that we occasionally ended up in a false neutral by accidentally bumping the lever. A stronger shift spring would help remedy this problem.

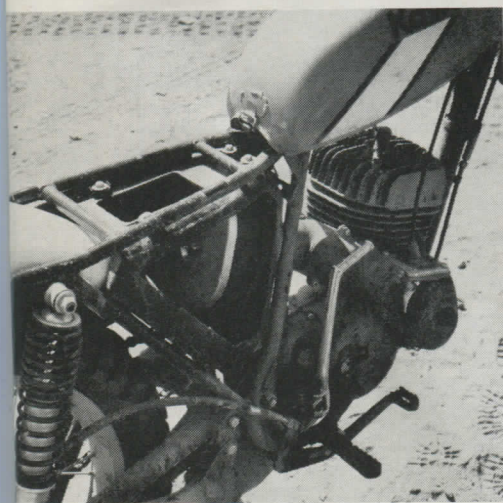
The engagement of the clutch resembles the operation of a toggle switch. The engagement span is over a very short amount of lever travel, and the engine doesn't give you any warning when it's about to stall, so you'll probably kill the engine several times before you acquire the knack of starting off. We only used the clutch for

When you go through faster, wide-open turns, you'll be amazed at how well the KX handles them, provided you're in the right gear. This doesn't mean the bike handles poorly if you're one gear too high; it just means that you can't rely on the engine to help you through the turn.

Provided it's in the right gear, the 125 does berm shots perfectly. And it doesn't object to broadsliding either. Motocross tracks usually don't have smooth, wide-open corners, but if you happen to find one, the KX will negotiate it in good flat-track style. You'll be able to race into the turn, pitch the bike sideways, and control the bike's direction by steering the front wheel and working the throttle. When you're leaned way over and the rear tire is shooting a rooster tail, the bike doesn't try to sit up and pitch you off if you hit a spot where there's good traction.



The aluminum-bodied rear shocks are light, but they look like they belong on a bigger machine. The tapered stinger/silencer on the end of the expansion chamber doesn't keep the KX125 quiet.



Access to the air filter is gained by removing the right side panel. Despite the large intake holes, the element stays clean and dry, even after many hours of riding.

COMFORT AND RIDE: Although the KX125 is primarily designed for smaller riders, its overall construction makes it comfortable for riders of many sizes. Our six-foot-plus testers found the seating position to their liking. They didn't have to curl their bodies or get in awkward positions to operate the controls.

The handlebars are as wide as those on bigger motocrossers, and they have a nice rearward rake. They give you plenty of leverage when you need to toss the little critter around. The long seat is narrow at the front and gradually gets wider toward the rear. Riders with wide behinds may think the seat is too skinny, but others



will find it delightful. It offers good, firm padding, and you'll be able to sit for long periods without getting sore.

The relationship between the footpegs, seat, and handlebars is nice for short and tall riders alike. Whether you're sitting or standing, the controls are all easy to operate, and you won't find yourself straining to make the KX perform.

Like most other production bikes, the 125's handgrips don't offer much cushion, so blisters quickly develop on your palms.

The little motocrosser also has some noticeable vibration, but it's felt mainly through the handlebars. After about 30 minutes of continuous riding, your hands have a numb feeling. Luckily, your feet and rear end don't feel the effects of the vibrating engine, so a different set of grips would possibly help this situation.

As we mentioned earlier, the suspension units do a terrific job of absorbing jolts, preventing your body from becoming prematurely fatigued by constant pounding. You'll be able to ride for long periods of time without feeling any aches and pains in your arms and shoulders.

Kawasaki needs to come up with a better exhaust silencer on the KX125. Our decibel testing showed that the machine

emits 102.3 decibels, which is much too loud, especially at a time when noise restrictions are being rigorously enforced.

BRAKING: Both the front and rear stoppers on the KX125 are excellent. They match the machine's size and power output perfectly. The small-looking brakes are powerful and always stop the bike quickly and predictably. Even after a number of repeated full-on stops, we didn't experience any fade.

Both brakes have a nice, progressive feel, so you won't lock them up accidentally. But you can lock them if you wish just by applying a lot of pedal and lever pressure. Although the rear brake isn't the full-floating type, hard braking on choppy terrain doesn't cause the rear wheel to hop.

We made several runs up and down a stream near one of the local motocross tracks to check the effect of water on the brake linings. Some braking ability was lost, but there was still good stopping power left. Within a few minutes the linings were dry again, and their full stopping potential had returned.

RELIABILITY DURING TEST: After many punishing hours on some rough motocross tracks, the KX125 held together

perfectly. On our initial ride a bolt that holds the expansion chamber in place vibrated out. We installed a new one using a little Loctite on the threads, and it stayed in place for the duration. Nothing else vibrated off, broke, or stopped working during the entire test.

The KX is easy to work on, and all routine maintenance can be done quickly. Unsnap the right side panel, and you've gained access to the washable air filter. Loosen the single rear axle nut, and you can adjust the chain. You won't ever have to worry about a change in ignition timing, thanks to the magneto CDI unit. All the control cables have adjusters, so you can readily set the brake, clutch, and throttle adjustments. The only unusual service headache you'll possibly encounter is jetting the carb. You must remove the right engine cover to gain access to the carburetor, so any maintenance on the Mikuni takes longer than with a normal induction system.

The only items we had to service during the test were the chain, air filter, and spokes. The KX125 performed as well at the end of the test as it did at the beginning.

SUMMARY AND CONCLUSION: The KX125 has a peaky, powerful, high-rpm engine with a powerband that is 3000 rpm wide. You must shift gears frequently to keep the engine operating in its most efficient power range but the rotary-valve induction system prevents the engine from bogging if the revs drop below the powerband.

The 125 handles well and corners nicely under most conditions, but the short wheelbase sometimes makes the bike a little skittery on fast, rough terrain, and the rear shocks are too stiff for lightweight riders.

The seating position will work for riders of all normal sizes, and except for some engine vibration and hard handgrips, the bike is comfortable to ride for long periods. The brakes are powerful, predictable, and progressive. And the exhaust system is entirely too loud.

The KX125 is nothing like the 125s of the past. It has been designed, engineered, and built just like the bigger motocrossers, and a full-sized person can ride it with the same degree of confidence that he would a larger bike.

As for its ability to keep up with the 125 Elsinores, we think the KX125 can do it. The immediate problem will stem from the fact that the Elsinores have been around for a year or so, which has given the sharp tuners enough time to learn all the good tricks for making them run and handle better. Most of the Elsinores winning the big races have been modified in one way or another, so a box-stock KX may be at a disadvantage. But that probably won't last long. When the Kawasaki tuners get the KX125s dialed in, the 125 class won't be a Honda parade any more.

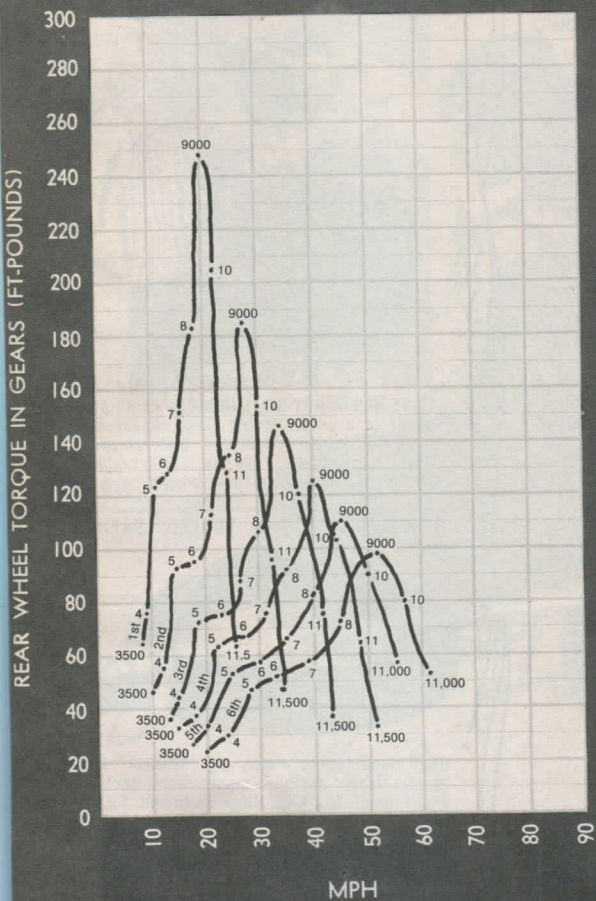
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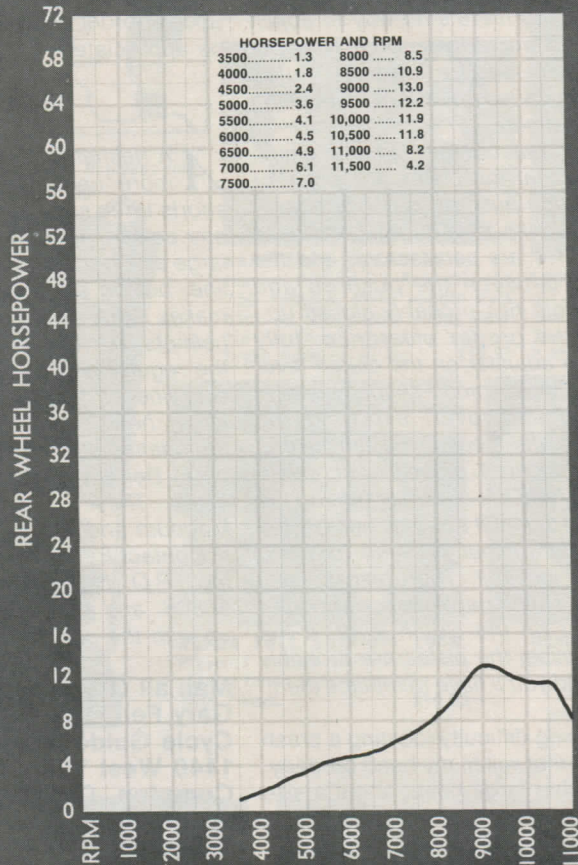
SPECIFICATIONS

Engine type	two-stroke
Cylinder arrangement	vertical single
Port arrangement	one rotary-valve-controlled intake, three transfers, one exhaust
Bore and stroke	56mm x 50.6mm
Displacement	124.6cc
Compression ratio	8.0:1
Ignition	magneto CDI
Charging system	none
Carburetion	one 26mm Mikuni slide/needle
Air filter	bristle-covered, washable oiled-foam element
Lubrication	pre-mixed fuel and oil
Primary drive	straight-cut gears, 3.14:1 ratio
Clutch	wet, 5 drive plates, 4 driven plates
Starting system	primary kick
Transmission	6-speed, left foot shift
Overall drive ratios	(1) 32.86; (2) 24.46; (3) 19.25; (4) 16.50; (5) 14.48; (6) 12.88
Transmission sprocket	13-tooth
Rear wheel sprocket	60-tooth
Drive chain	1/2-in. pitch, 5/16-in. width (#428)
Front forks	5.8 in. (147.3mm) travel
Rear shocks	3-way adjustable, 3.5 in. (88.9mm) travel
Front brake	drum, single-leading shoe
Rear brake	drum, single-leading shoe, cable-operated
Front tire	3.00 x 21 Dunlop Sport knobby
Rear tire	4.10 x 18 Dunlop Sport Senior knobby
Frame	tubular steel, single downtube
Steering head angle	31 degrees from vertical
Front wheel trail	5.09 in. (129.3mm)
Wheelbase	52.75 to 54 in. (133.9 to 137.1cm)
Length	79.4 in. (201.6cm)
Weight	183 lbs. (83 kg)
Weight distribution	43.9% front, 56.1% rear
Ground clearance	7 in. (177.8mm), at expansion chamber
Seat height	32 in. (812.8mm), unladen
Handlebar width	34.3 in. (871.2mm)
Handlebar grip height	42.8 in. (108.7cm)
Footpeg height	11.2 in. (284.5mm)
Instrumentation	none
Gas tank	steel, 1.7 gal. (6.44 liters)
Sound level as per SAE XJ 331a	102.3db(A)
Suggested retail price	\$859 East Coast, \$840 West Coast

KAWASAKI KX125



This graph shows the amount of rear wheel torque available at any speed, at any rpm, and in any gear. Maximum acceleration will be obtained by shifting gears at the points where the consecutive lines intersect.



This graph shows the amount of horsepower delivered to the ground as measured by a Patraco MKIII rear wheel dynamometer. These figures may vary from the manufacturer's claims, or from those obtained on a different dynamometer.

MILES PER HOUR

0 10 20 30 40 50 60 70 80 90 100 110 120 130

