

# *They Do Mean Limited*

**by dave ekins**

## Kawasaki's 250 & 450 Moto- crossers



"CONGRATULATIONS FOR CHOOSING this fine Kawasaki motorcycle from the many models available.

"The manufacturer is certain that will be pleased with the dependable performance of your new motorcycle.

"While manufactured in Japan under the most exacting quality control standards by Kawasaki Heavy Industries, Limited, a member of the world renowned Kawasaki group, this motorcycle is largely a product of the Racing and Development Department of Kawasaki Motors Corporation, in Santa Ana, California. It is designed to meet the needs of both American and International racing competition, and has already proven itself an outstanding competitor.

"As with any mechanical device, proper care and maintenance are important for trouble free operation and peak performance. Your new F12MX is a highly tuned racer. Any modifications to the engine will almost certainly be harmful to its performance. However, in order to enjoy maximum performance at all times, the motorcycle must be kept properly tuned and adjusted."

The above was taken from the "Forward" of the shop manual for the Kawasaki F12 MX Limited Production motocross weapon. We, along with a lot of other publications whom, I'm sure, will have a big Kawasaki 450 MX test feature about this motorcycle, were asked to test the bike. We at **Dirt Rider** hopefully, will approach this subject differently, more objectively, and present a clear picture of what's going on.





To begin, there are two Kawasaki racers that fall into the "limited production" category—the above mentioned 450cc F12MX and a 250cc F11M (X?). Designed and built in Santa Ana, California? Yes. Utilizing the fabulous riding talents of Brad Lackey, Kawasaki megabucks and Yankee "get it done" construction, these machines are more American than foreign.

Limited production? Yes. About 200 of each model will find their way to these shores. This puts them within some of the AMA's sticky production rulings so that they can compete locally without raising a whole bunch of protests. Availability? Kawasaki will ship these bikes to selected dealers with the request that they sell them to or sponsor a qualified rider on them. Of course, the dealer can ask any price he wants. The reported cost of these bikes, because of their very limited production, is high; \$1200 for the 250 and \$1500 for the "animal." What the dealer wants to ask from there is up to him and this can be regulated only through supply and demand.

Production models at a more reasonable cost and in greater numbers will be introduced in September of '73 as a '74 model. From what we have been able to learn, the newer models will be a whole lot better than those currently offered. In particular, there is one nagging complaint with both the 450 and 250; the forks could stand a whole bunch of improvement and Kawasaki are working on this right now for the '74 models. So it just may turn out that those who wait will end up with the better machine.

Is it exactly like what Brad Lackey rides? No. The machine Lackey used in the Trans-AMA series weighed around 196 pounds. The engine, including cylinder and head, was cast magnesium. The F12 has only magnesium outer case covers. After riding the F12, we drained the fuel and set it on the scale; it weighed 213.5 pounds. That's the lightest 250 or 400 we ever weighed. The 250 under the same conditions weighed 216.5 pounds, very close to the claimed weight of the Honda Elsinore which we have yet to verify.

The bike Lackey is currently racing in the European Championship motocross series is most likely closer to the current F12 than his Trans-AMA bike. It has to come in at about 210 pounds per FIM regulations. However, there is no reason to believe chassis design, angles, dimensions, even materials have differed. They are using a lightweight steel tubing which certainly keeps the weight down and offers strength where it's really needed.

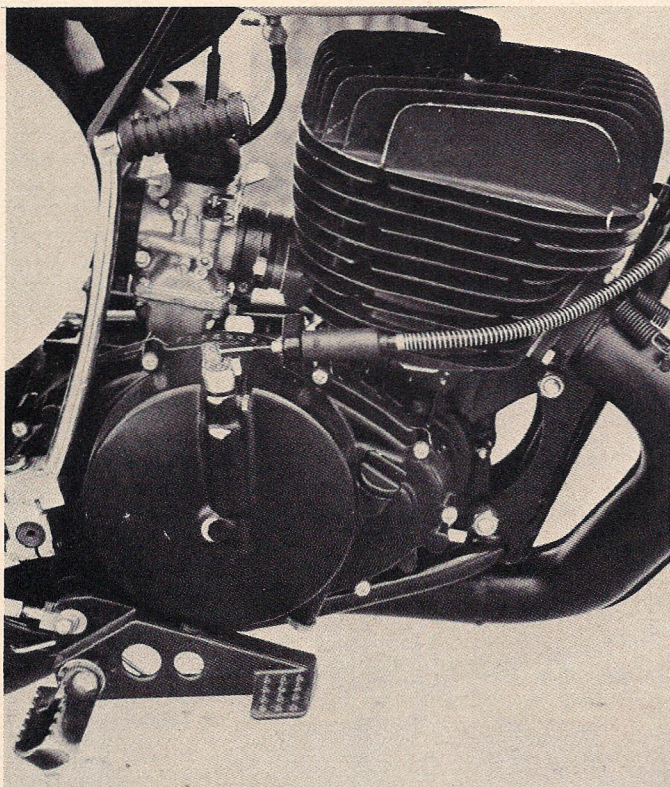
What is similar between the 450 and 250? Would you believe only the front forks? That's about the only thing alike we could discover. So, because they're different, let's take them separately.

#### THE 450 F12

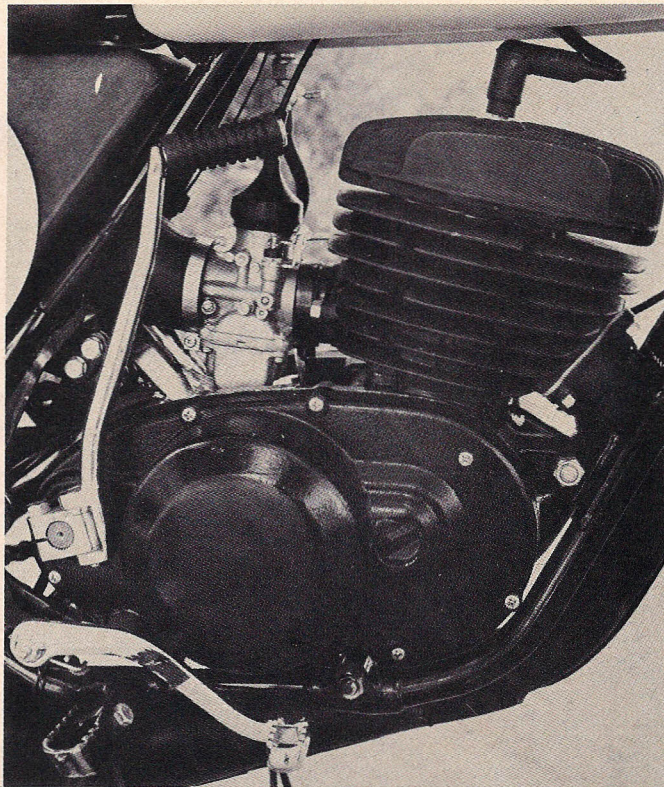
The 450 as presented to us is a cobby, race-ready motorcycle. If you want to prop it somewhere you'd better bring something to prop it up with; it won't stand by itself. The workmanship at weldments and the look of the castings is typical of that which you'll see on machines out of the R&D shop. Hand-fitted and single-purpose. The bike is a tool, a tool for winning races, and like all tools no consideration is given to aesthetic values. Who cares what it looks like? So it has a pea-green plastic fuel tank with virtually everything else painted black except for what's chromed, and that isn't very much.

High impact flexible plastic fenders and plastic hand control levers are fitted, and even the rear brake pedal is plastic. The plastic components are U.S. made and make a full round trip to Japan and back which, I'm

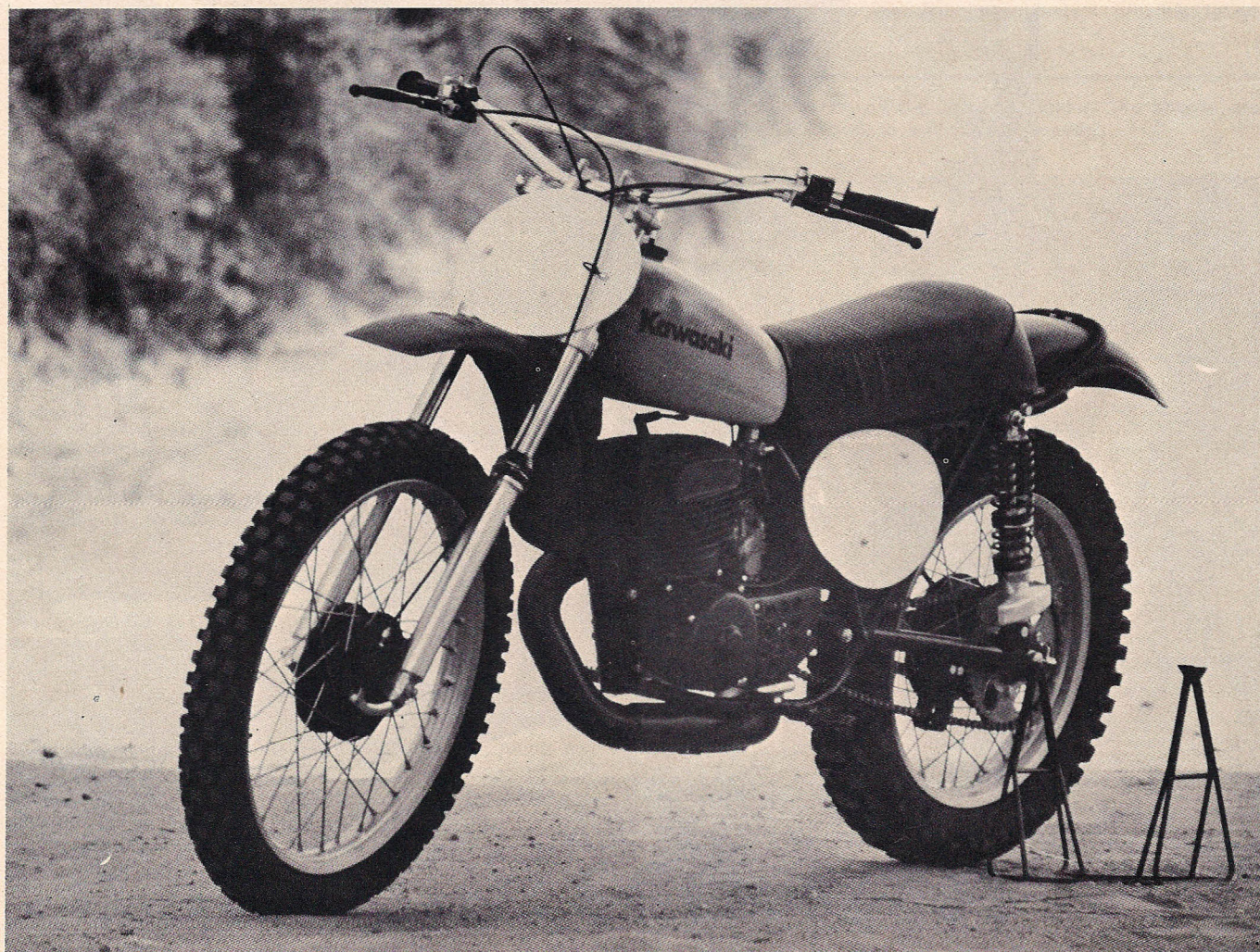




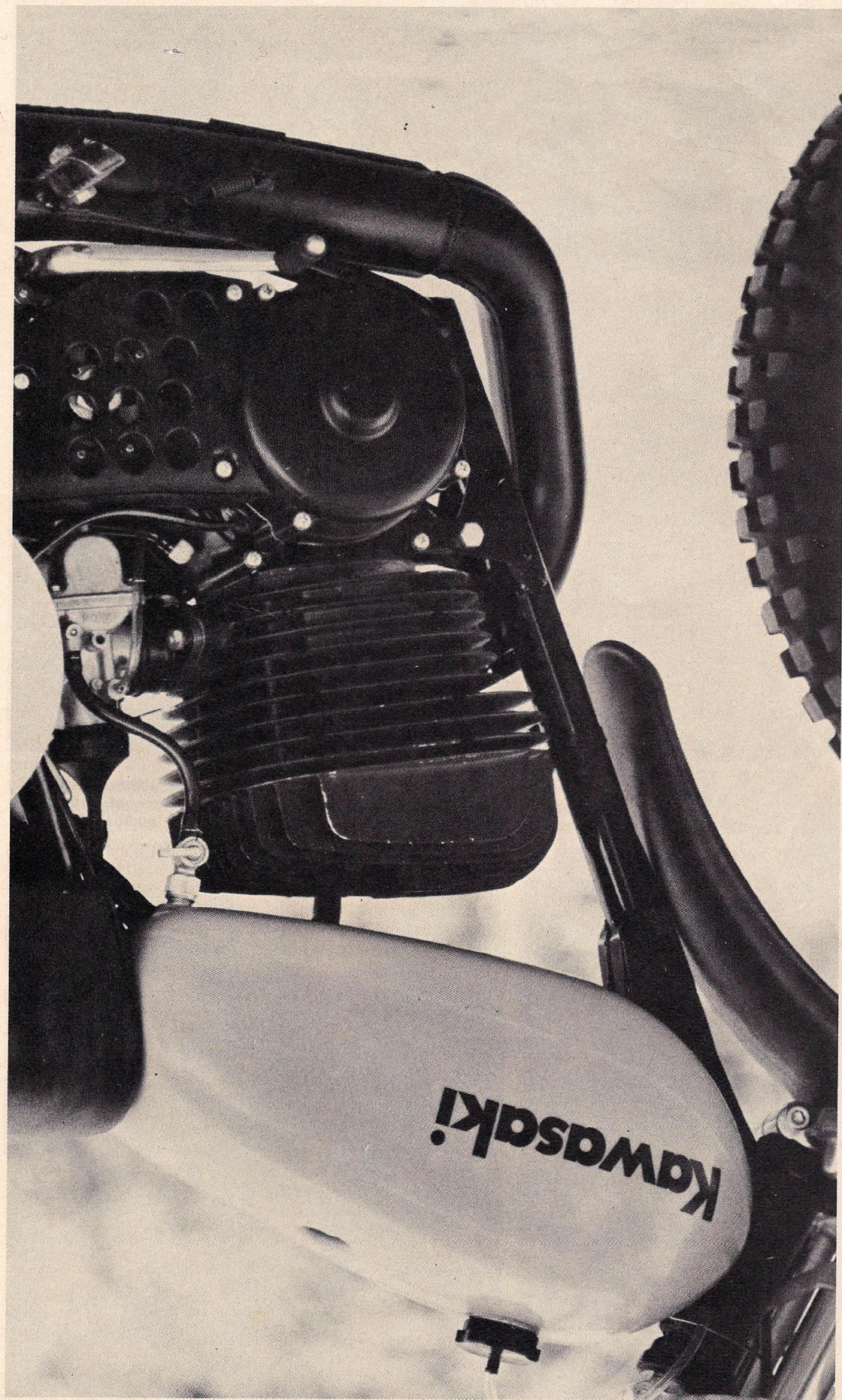
Big 441cc engine is more than a handful; this 213.5 pound racer has probably the best horsepower to weight ratio of any production MXer.



Basically the engine is an F11 Enduro unit with magnesium outer cases.









sure, adds to the already heavy price.

Engine cases seem to be sculptured to the inner lumps and protrusions of the working parts, further saving weight and keeping the package trim and narrow. The cast alloy cylinder has a very thin cavernous, cast iron liner with generous holes for ports. Kawasaki uses the double transfer port system common on Yamahas with huge non-webbed openings for the inlet and exhaust ports.

A symmetrical dome combustion chamber with a broad squish band is cast into the head which accommodates a side-mounted spark plug. A thin copper gasket seals the head to the cylinder, utilizing four large through-bolts that also fasten the cylinder to the cases, and four more smaller bolts to hold the head onto the cylinder.

The 86mm piston carries two rings. The upper ring, a pressure-activated Dykes pattern, is at the very top of the piston for positive control of the ports. The second ring is a simple rail type to reinforce the effectivity of the Dykes ring. Both are ductile iron material, hard-chrome-plated on the wear surface.

The big F12 has all the latest ideas and features with the exception of oil injection, which a true MXer does not require. Castor oil, mixed with gasoline at a skimpy ratio of 32 to 1, is recommended and used by the Kawasaki team. Castor oil is the way to go; it affords the highest film strength and at this ratio the rings remain free in the piston grooves.

All the loading bearing shafts are either on roller or ball bearings to keep friction at a minimum. The clutch basket is driven from the crankshaft by a set of straight-cut gears while the clutch handles this torque through seven sets of fiber and metal plates held in compression with six springs. The clutch actuator is mounted in the outer case. There is no cross-over rod. A ball throw-out bearing on the clutch is pushed by a rack and pinion arrangement in the outer magnesium case. It's about the easiest working clutch we've ever felt.

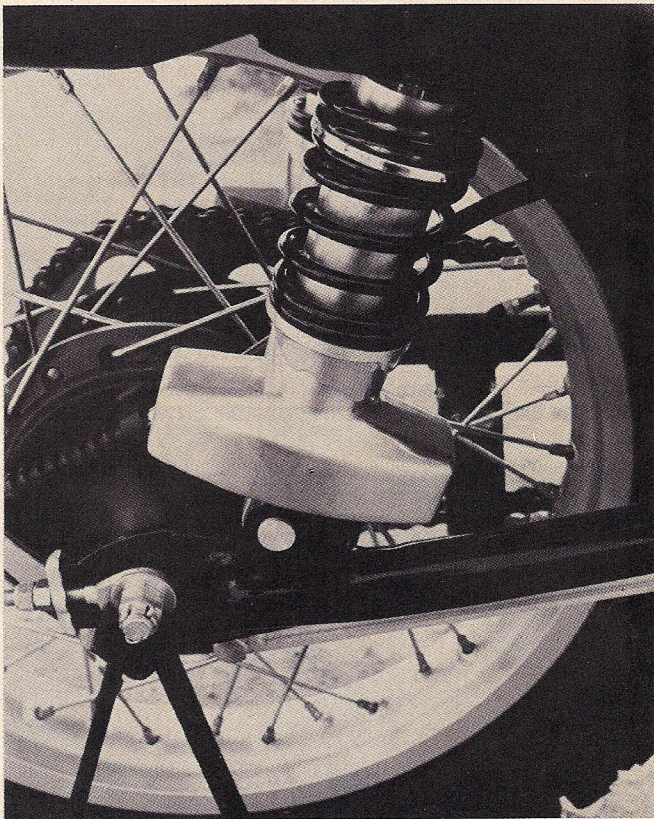
The five-speed gearbox sits on very short shafts and utilizes narrow gears which feature large individual teeth for strength. Of the sliding dog variety the five sets of gears remain constant mesh and are programmed through a drum type cam and three shifting forks.

In operation, the bike changes gears effortlessly. Sometimes it seems you just have to think about it and it's in the next cog. I found the arch of my boot on the footrest and the toe on the shifter. It only takes a slight movement to backgear, and it never missed.

For motocrossing, the brakes worked fine. Lots of feel even though the rear is cable operated, and it isn't "floated." Although we got hop in the ripples from the inadequate forks, the rear shocks and brakes wouldn't chatter under the same conditions.

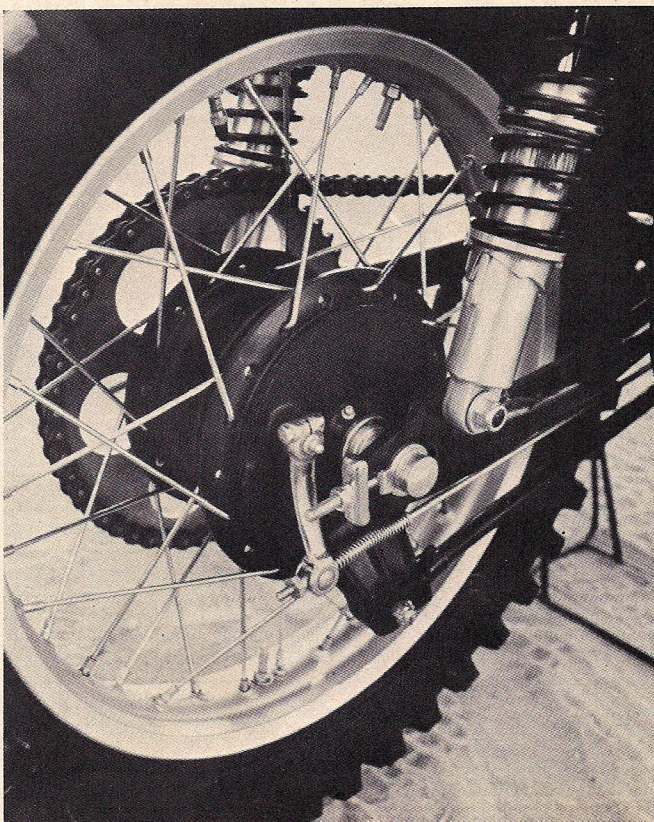
The rear suspension units appear to be Kowa shocks—aluminum alloy castings with funny shaped reservoirs for a greater amount of fluid and additional cooling. These units have dual springs of different windings plus additional spring setting adjustments. The Kowas are rebuildable, providing you can get the pieces to rework them with. Whatever, they would be fun to experiment with. I would like to have seen them a bit softer on the compression stroke, and being able to get inside and "mess around" could help solve some of the difficulty. But without sorting out the front end first there's not much sense in changing the rear suspension units.

The F12 has a great seat and a great feel, even though for my tastes the handlebars put your hands

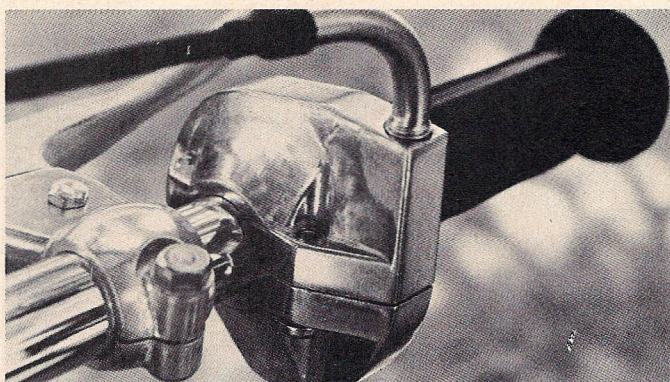


Strange looking aluminum shock absorber housing has fluid reservoir to aid in the area displacement problem found with shocks.

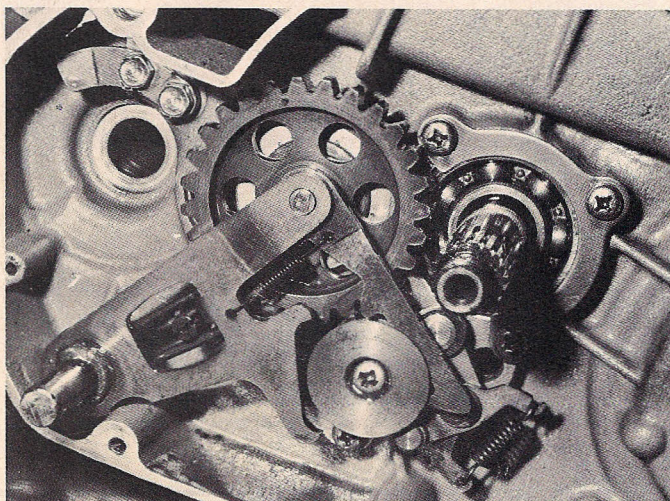
Rear backing plate on the 250 is a floater. The shocks are made from aluminum to further reduce weight.



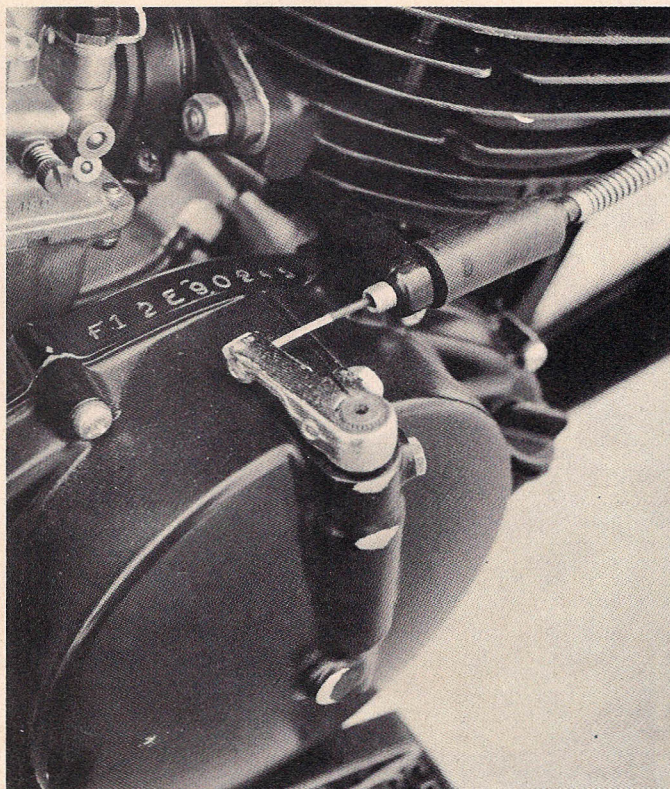




This "trick" quick turn throttle makes the bike a bit of a beast to handle. They'd be much better off with the slower turn unit.



Shifting mechanism found within the primary case. Gear is idler for the kickstarter.



Clutch pull acts directly on the pressure plate.

in an exaggerated outturn at the wrists. This created a knot in the forearm after about 10 minutes of hard riding around the International course at Indian Dunes. But then I'm not in the greatest of shape either.

The F12 starts super easy, the easiest big bore single ever, and it doesn't have a trick decompressor either. Just a sensible kicking ratio, good working carburetor, and CDI ignition equipped with an electronic retard that works. The engine pulls very well from the bottom up and there is no pipey feeling.

It thumps along on giant legs in the higher gears and if you're not careful you'll think that that thump, thump relates to 30 mph, when actually you're thumping closer to 50 and those turns come up like you were shot out of a cannon. I got awfully big-eyed trying to get the thing slowed for a sharp right hander at the end of a long straight. I even opened my mouth wide, but that didn't help. The last thing left for me to do was slam it into the hard berm, which I did in pure panic. The bike handled the situation well and we didn't crash.

In riding the 450, you need to sit on the very front of the seat and apply the power evenly. This way the front wheel stays somewhere close to the ground and the big 4.60 knobbie on the back propels it forward at a very rapid rate. It's the first bike we've had that actually broke into the 8 seconds during our tenth-mile acceleration tests. We got our best runs starting in second gear and the engine was about two-thirds peaked at the end of the timing trap. It had a best run of 8.6 seconds with an average of 8.9 seconds. It's an animal, this big Kawasaki.

The fastest and the lightest motocrosser we've ridden, the F12 needs only some improvements in its suspension and these won't be long in coming.

#### THE 250 F11M

As stated before, the two new Kawasaki motocrossers are not the same. The 250 is taken directly from the F11 enduro bike. Its engine has only minor modifications for the MX application and the frame is dimensionally the same. Only its materials have been changed to make the bike competitive.

The same complaint with the handlebars and forks found on the 450 also apply to the 250. Basic handling is good, but engine performance on the F11 is down. Basically the head, cylinder, and piston have been tuned to get more hp out of the F11.

Fitted with a one-eighth turn throttle, the bike is actually more difficult to ride than the 450. It also wants to lift the front wheel coming out of corners and the throttle is so sensitive it's difficult to regulate. In conjunction with this, the overall gearing is very low and the whole ride tends to be a fight to keep the thing under control.

We did try another F11, one set up with taller gearing and a slow turn throttle, and it was a pleasure to ride and easier to get around the track than the 450.

Why the factory didn't at least ship the bike with a sensible quarter-turn throttle will be another of those unsolved mysteries from the Orient.

Outwardly, both bikes look the same. The F11 doesn't have all those plastic levers nor does it have the reservoir rear shocks. It did, however, seem to ride better. It has the same black plastic fenders and a pea-green plastic gas tank. Both motorcycles are somewhat muffled and both are meant for racing. The 250 doesn't have a side stand either.

So, we've come to the age of limited production, hand-built racing motorcycles, machines that in the



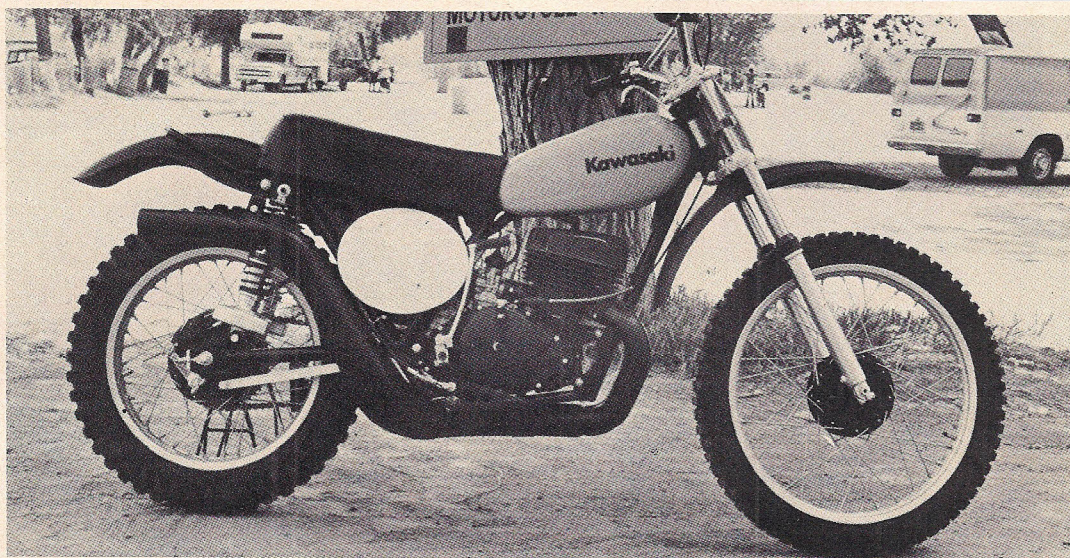


# KAWASAKI F12MX

PRICE: See Text

WEIGHT: 213.5 Lbs. Wet No Fuel  
DISTRIBUTOR: KAWASAKI MOTOR CO.

1062 McGAW  
Santa Ana, Ca.



## Tenth-mile acceleration data:

Surface, dry; traction, fair; temperature, 78°F; average, 8.9 seconds; rider weight, 170 pounds.

## SPECIFICATIONS

Engine Type ..... 2-STROKE SINGLE  
Bore, mm ..... 86  
Stroke, mm ..... 76  
Displacement, cc ..... 441  
Compression Ratio ..... 6.5:1  
Bhp at rpm ..... 38 @ 5500  
Carburetor ..... 34mm MIKUNI  
Ignition ..... CDI ELECTRONIC  
Starting System ..... PRIMARY KICK  
Lubricating System ..... OIL MIST

## DIMENSIONS

Wheelbase, in. .... 55.5 TO 56.5  
Ground Clearance, in. .... 7.7  
Peg Height, in. .... 11.0  
Seat Height, in. .... 31.0

## CAPACITIES

Fuel, gal. .... 2.0  
Oil, pts. .... IN FUEL

## IMPRESSIONS

	Poor	Good	Excellent
Throttle Response			●
Acceleration			●
Power Band			●
Starting			●
Engine Noise		●	
Muffling		●	
Vibration		●	
Handling		●	
Choice of Tires			●
Suspension		●	
Rider Comfort		●	
Transmission			●
Instrumentation		NA	
Lighting		NA	
Toolkit		NA	
Paint and Chrome		●	
Styling		●	
Mileage		●	
Braking		●	





# KAWASAKI F11M

PRICE: See Text

WEIGHT: 216.5 Lbs. Wet No Fuel

DISTRIBUTOR: KAWASAKI MOTOR CO.

1062 McGAW  
Santa Ana, Ca.



Tenth-mile acceleration data:  
Surface, dry; traction, fair; temperature 78°F; average,  
10.0 seconds; rider weight, 170 pounds.

## SPECIFICATIONS

Engine Type ..... 2-STROKE SINGLE  
Bore, mm ..... 68  
Stroke, mm ..... 68  
Displacement, cc ..... 247  
Compression Ratio ..... 8:1  
Bhp at rpm ..... 29 @ 7500  
Carburetor ..... 32mm MIKUNI  
Ignition ..... FLYWHEEL MAG. POINTED  
Starting System ..... PRIMARY KICK  
Lubricating System ..... OIL MIST

## DIMENSIONS

Wheelbase, in. .... 55-56.0  
Ground Clearance, in. .... 7.4  
Peg Height, in. .... 11.0  
Seat Height, in. .... 31.0

## CAPACITIES

Fuel, gal. .... 1.85  
Oil, qt. .... 1.00

## IMPRESSIONS

	Poor	Good	Excellent
Throttle Response			●
Acceleration		●	
Power Band		●	
Starting			●
Engine Noise		●	
Muffling		●	
Vibration		●	
Handling		●	
Choice of Tires			●
Suspension		●	
Rider Comfort		●	
Transmission			●
Instrumentation		NA	
Lighting		NA	
Toolkit		NA	
Paint and Chrome		●	
Styling		●	
Mileage		●	
Braking		●	



past were reserved only for a chosen handful of men. Now we're looking at 400, next year maybe 4,000. It's a tribute to our sport that this huge manufacturing conglomerate, probably the biggest in the world, has taken such a keen interest in motocross racing, an interest so involved that they finance a complete research and development facility in the United States, evaluate what we are trying to do over here, and make products to fit our exact needs. And each year the involvement gets deeper and deeper—nice for us, the beneficiaries. ■

# 250 & 450

