TRAIL TEST:

Suzuki PE175Z

Suzuki gives 175cc testimony for the engine-size debates.

BY RON LAWSON

PHOTOGRAPHY / DAVID DEWHURST

Suzuki has gotten off the subject. While Honda, Kawasaki and Yamaha have been involved in a serious battle over the 200cc enduro class, Suzuki has been addressing an entirely different issue with the PE175: Why not a 175 instead of a big-bore?

It's plain that 175s are changing roles. No longer are technology wars confined strictly to motocross courses while enduro bikes pick up the leftovers a year later. The PE is truly a new machine, and its performance demonstrates that sleeves are being rolled up, money is being spent and 175s are becoming serious motorcycles capable of winning enduros. So serious, in fact, that the 175 is the only PE in Suzuki's 1982 lineup. And so serious that the PE can contend not only for the title of best 175, but best enduro motorcycle of *any* size.

It's difficult to build such a strong case for 175s after they've spent years being relegated to vacation-time giggle-machines for the wife and kids, but the current explosion in that class is aimed at convincing *you* that competitive enduro riding doesn't necessarily equate to large engine size. And of

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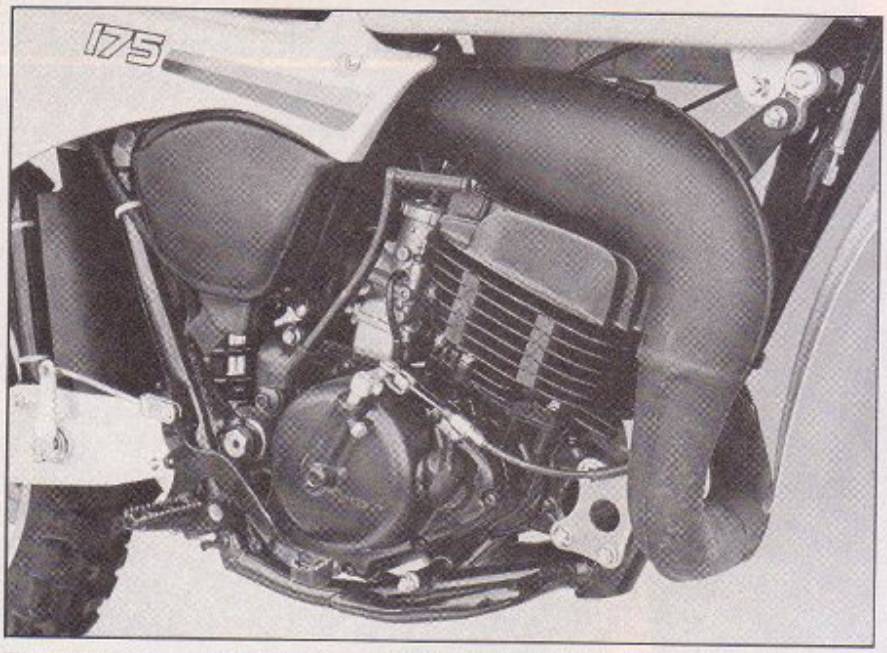
the new generation of small-bore challengers, the PE is best qualified to prove the point.

Your first clue that the PE is meant more to win enduros than to fill a low-caliber slot in Suzuki's off-road lineup comes with a detailed look at its rear suspension. This year there are four single-shock 175cc enduro machines, and with Yamaha's remake of the IT175, three of them are of the rising-rate variety—that is, as the suspension is compressed, the mechanical leverage on the shock decreases, upping the effective spring and damping rates. The easiest way for Suzuki to get the PE on the rising-rate caravan would have been to bolt on the single-shock rear end of the RM125. After all, Yamaha produced good results by using YZ100 suspension on the IT175. But the PE is its own machine; and while pasting together MX designs might have been a successful approach from a sales point of view, it is no guarantee of success out on the trail. If such a machine were competent on an enduro course, it would be more a product of luck than of good design. So out came Suzuki's checkbook, and the PE entered the single-shock world standing on its own suspension. Its linkage, struts and shock are laid out in the same configuration as the larger RMs, but all of the PE's parts have been redesigned specifically for enduro requirements. All four of the rebound settings have less damping than the RM125's shock, and the PE has its own progression curve and a lower spring rate.

It seems that Suzuki had large riders in mind for the PE, for the rear end is sprung more heavily than are most 175s. The springing feels more in line with that of most 250cc enduro machinery, but it won't jar the teeth out of a lightweight rider either. The PE is progressive and smooth over the little choppy stuff, but really excels when the trail gets rough. In fact, there are very few enduro bikes in the same league when it comes to smoothing out the gnarlies. The Husqvarna 250WR is one of them but even it can't match the PE when it comes to things like rolling sand whoops. The PE's 250-caliber suspension is combined with the weight of a 175, and so when the bike does get sideways or out of shape, it's much more easily corrected than a bigger machine. The PE can take almost anything in stride, proving it doesn't take a foot of travel to build an enduro winner. The PE gets the job done—and done quite well—with just 9.8 inches.

The Suzuki's Kayaba fork is typical of modern Japanese dirt-bike design—that is, *good*. As fork technology becomes more universal, dirt-bike front ends are becoming



The PE175 owes its horses to a new pipe and a rethought port configuration

And a closer-ratio gearbox helps keep the PE at full gallop.

Suzuki took the expensive route when it gave the PE175 its own Full Floater

Single-shock suspension is the rising rate of a world-class enduro entry.

more similar in both specifications and feel. Straight-rate springs with aircaps but a recommended air-pressure of zero psi (the trapped air within the stanchions still provides progressively increasing resistance) and 38mm stanchion tubes are common to most 175s. Like the rear suspension, the fork is sprung for average to heavy riders. But the performance of the fork doesn't quite feel as smooth and progressive as that of the rear. This is partly because the handlebar is low and the seat is high, causing the rider to place additional weight on his arms. And that enables him to feel more of the ruts and bumps transmitted through the fork.

Even though the seat and bars give the PE pilot a downhill riding position, the machine is comfortable. Without the design restrictions imposed by using leftover 125 MX parts, the 175 could be configured to fit the average enduro rider. That means the PE isn't a kids-only motorcycle. The riding stance is suited for riders around the six-foot mark. Tight trail manipulation on any machine requires fast action, and you can't react quickly if you're cramped. The PE places the rider in a position that allows him to move easily. You don't have to make a conscious effort to move your weight back for the big bumps—it happens easily. You don't have to use your last energy reserves to stand when you're tired—standing on the PE feels natural because of the low handlebar. And when the bike comes to tight turns it's easy for the rider to slide forward into the right position.

In the turns, the PE is a very neutral-handling machine. Its steering geometry certainly isn't slow, but isn't quick or twitchy, either. The PE has a middle-of-the-road 28-degree fork-angle and 57-inch wheelbase, but it feels wiry and agile. You get the feeling that both wheels are hitting the turn in the same instant. Instead of leaning over, foot out and ready to slide around the corner, you flick the machine over and change direction. Once you learn to flick the bike rather than muscle it, the PE is a pleasure to do enduro business with.

But the bike's agility extracts a price in terms of stability. The PE develops a wobble at high speed in deep sand or any extremely loose soil. Again, the lack of weight makes life easier, reducing the wobble to harmlessness. But trying to counteract the quiver still will demand a healthy chunk of attention.

Actually, the PE's weight—229 pounds—is slightly heavy for a 175, but it's still lighter than any 250, and the machine feels like it weighs less than its numbers would lead you to believe. Nothing is free, however, and the PE, like all 175s, forces a tradeoff in power. That tradeoff is minimized because the Suzuki produces more top-end horsepower than any other 175cc enduro machine we've tested. But Suzuki's search for horses led to the sacrifice of some of the low-end power that last year's PE had. Much of the difference in power stems from porting changes. Inside the barrel, both the intake and exhaust ports have been raised to increase top-end output. And the head gasket is 0.5mm thinner so

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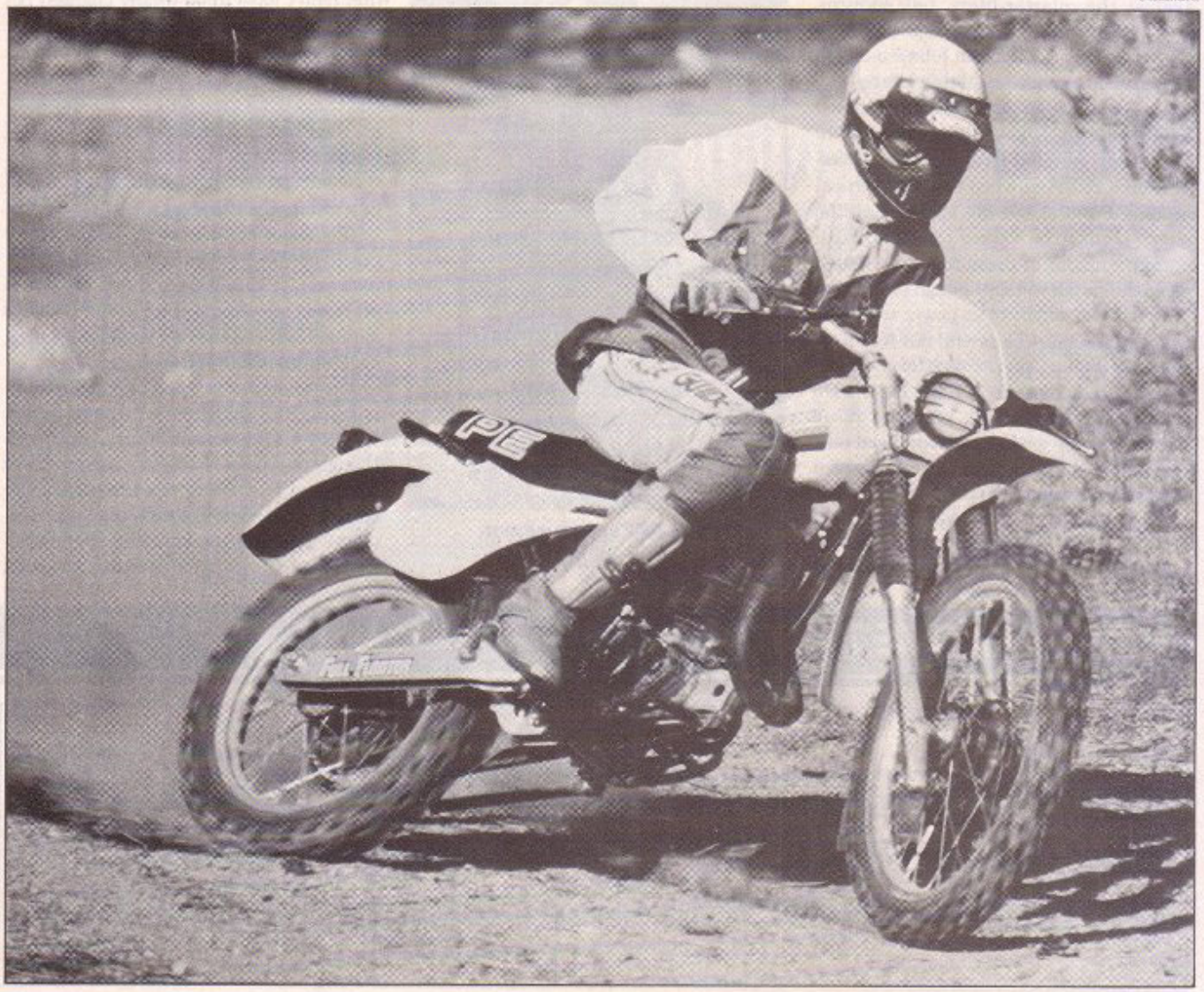


Charting the Changes

Engine: The intake port is 3mm higher and the top of the exhaust port is 0.5mm higher than on last year's PE175. To maintain close to last year's compression ratio, the new PE's head gasket is 0.5mm thinner. The exhaust pipe was redesigned to enhance high-rpm horsepower. Third through sixth gears all are lower but the final drive is taller (3.83:1 vs. 4.0:1) due to a two-tooth-smaller rear sprocket.

Suspension: The PE's Kayaba fork is new and has approximately half an inch more travel than last year's. The Full Floater single-shock suspension design is a first for the PE. The shock is manufactured by Kayaba and features four-way adjustable rebound damping.

Chassis: Steering-head angle on the PE's all-new frame is steeper than on previous models, going from 29.8 to 28.0 degrees from vertical. Trail is down to 4.45 inches.

Details: Straight-pull spokes are laced to new hubs at both ends. The brake and shift levers fold and are spring-loaded. The hand-lever cable adjusters now have spring-loaded detents that allow the rider to alter front-brake and clutch freeplay with just his fingers.

that the compression ratio is close to the same as before. The pipe also has been redesigned to increase the machine's high-rpm performance.

And on top, the PE pulls strongly enough to be compared with 250-class hardware. It's not going to win any drags against the quarter-liters, but enduros aren't dragraces. And when kept on top of the power curve, a PE can follow a bigger machine anywhere. Getting there just means using a different technique. Steep hills require quick downshifting and a more alert frame of mind than would be necessary on a 250. And when the near-vertical lip at the top of the hill approaches, the clutch needs to be worked just right. With a slight amount of pressure on the clutch lever, the clutch will slip enough to keep the engine in the middle of its power zone. But the PE pilot must be careful not to fall off the powerband. Once he does, his best salvation is to downshift. Waiting for the 175 to drag itself back into its prime rev range without clutch- or shift-assistance can take more time than any competitive enduro rider will be willing to spend.

From that, don't conclude that the PE has no low-end power. It's just that the bottom seems weak by comparison to the top.

Suzuki's only 1982 enduro weapon

175cc of anti-250 artillery.

The PE can't lug as low as a Kawasaki KDX175 or a Yamaha IT175, but it does have solid power in the basement. A play-bike pace is no problem for the Suzuki, but it's capable of more, and the rider can't resist the temptation to keep it singing. And that means shifting. Considerably more shifting than a 250 or Open bike would require. More shifting, even, than most modern 175s. The Suzuki will get you through enduro sections faster than any other machine its size, but your left foot will have to pay the price.

Because the machine's personality is so much more hyperactive than last year's PE, Suzuki has squeezed the gearbox ratios together. First and second are unchanged, but third, fourth, fifth and sixth all are lower (numerically higher). Final-drive gearing is higher, so the end result is a gearbox that is taller in the initial gears but virtually the same in the others.

The new motor works well with its new gearbox and new power characteristics. There are some things on the PE, however, that didn't have to be totally changed before they worked. Like the quick-change rear wheel, which is one of the best designs in the business. The brake, rear sprocket and chain don't even have to be touched to get the wheel off, for they remain attached to the swingarm. We discovered how easy the whole procedure is when a thorn found its way into the PE's rear tire while we were testing about 20 miles south of absolutely nowhere. We wedged the PE between a rock and its kickstand and had the wheel off in seconds. And if the PE had Suzuki's optional centerstand, we would have been back on the trail even sooner.

The wheel itself is new, though, incorporating the straight-pull spoke design found on RM motocrossers. But even though the spoke change necessitated new front and rear hubs, the brakes are the same as last year's, which is to say adequate. The front brake, although progressive, requires more pressure than it should,

COMPARATIVE TEST DATA:

Make & Model	Wheel Travel Front/Rear, in.	Weight (fuel tank empty), lb.	Weight bias Front/Rear percent	Steering head angle/Trail degree/inches	Transmission, number of speeds
Suzuki PE175–'82	10.0/9.8	229	45.9/54.1	28.0/4.4	6
Kawasaki KDX175–'82	9.6/10.5	227	46.3/53.7	28.0/4.7	6
Yamaha IT175–'82	10.2/11.2	216	47.0/53.0	28.5/4.9	6
Honda XR200–'81	9.0/10.2	228	45.2/54.8	28.4/4.9	6
Husqvarna 250WR–'82	10.6/10.7	236	45.0/55.0	30.0/6.0	6
Yamaha IT250–'82	9.5/11.8	239	45.6/54.4	29.0/5.0	6

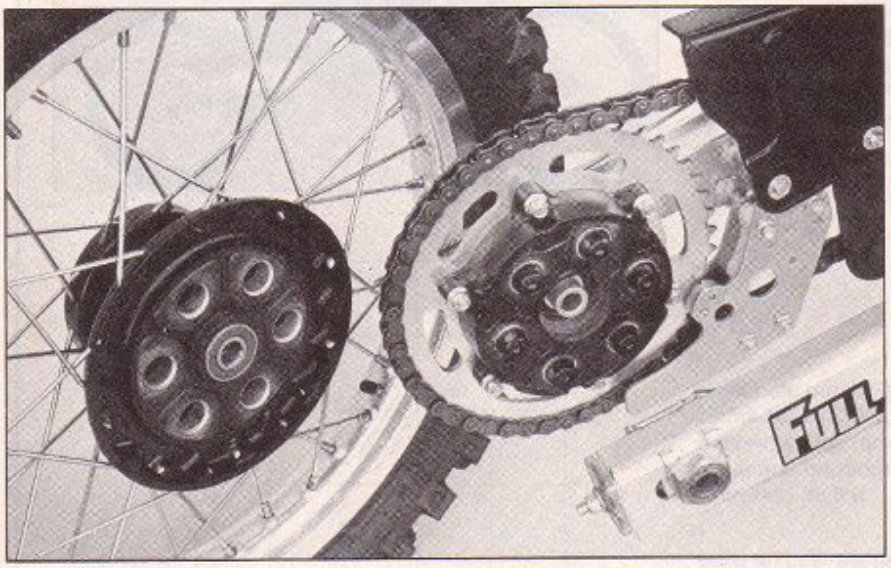
and while the rear will drag you down to a stop more effectively than the front, it still is a shade weak by enduro standards.

Both brakes, however, are well waterproofed, as are the dual airboxes and the electrical system. The detailing of the PE shows all the earmarks of a good enduro machine. No bike is crashproof, but losing arguments with trees, rocks and enduro sections on the PE isn't likely to cause disabling damage. Both the shift and rear brake levers are of the folding variety, and the throttle cable runs parallel to the handlebar where it exits the gear-type straight-pull twistgrip. And the 15-watt headlight is protected from harm by a metal guard.

The features that the PE lacks are few and trivial. But a welcome addition the next time around would be a speedometer. And another selection in tires would be even better received. The stock Bridgestone M20s looked like lumpy roadracing slicks after just days of riding.

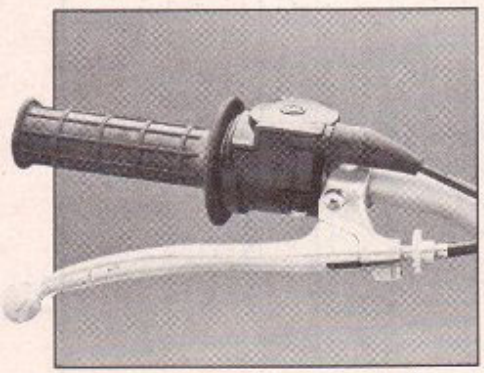
These certainly aren't points that would be cause for complaint on an average trailbike, but the PE175 isn't an average trailbike. This machine was created for one purpose only—to compete. Sure, there are many riders who will buy the PE so the wife or kids can tag along on a Sunday of cowtrailing. And those riders will be happy with it. The PE handles forgivingly and the engine can be perfectly content cruising at low rpm. But those people will never appreciate it for what it is: the best 175cc enduro machine on the market.

But the PE *isn't* the best anysize enduro machine you can buy. Its few flaws drag it down from Swedish-iron level and leave it to rule over the small-bores. And if in the minds of the more hard-nosed enduro riders riding the best 175 isn't enough, then consider this: The factors that hold the PE back aren't due to its size as much as to other designed-in limitations. And with the new-born emphasis in serious 175 competition machinery, it's only a matter of time before a 175 provides a final answer to the enduro size-question. •



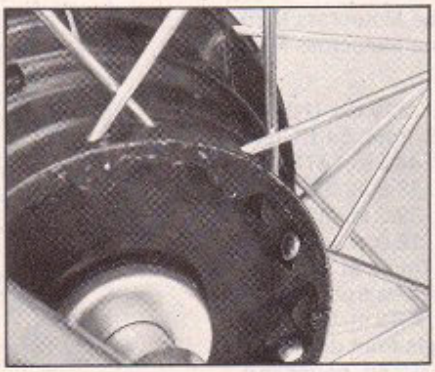
Suzuki's quick-change rear wheel unplugs from the sprocket and brake in seconds

So the rider won't be flat tired after some mid-enduro wheel work.



Crash-resistant straight-pull throttle

And cable adjusters for the tool-less.



Straight-pull spokes join hub to rim

The PE is RMed with MX tricks.

Ride Review

• For the last two years I've been waiting, wondering what it would take to pry Kawasaki's phenomenal KDX175 out of my heart, as well as from under my Countdown Combo enduro timer.

Well, I need wait no more. That replacement has finally arrived. It's yellow, it has "PE" emblazoned on its seat, and it can jet away from a KDX as easily as the Roadrunner can leave the coyote eating his dust.

Now, I know that the KDX has more low-rpm lugging ability and better high-speed stability than the PE, and that the Kawasaki is more forgiving than any enduro bike in captivity, but I still can make better time on the PE just about anywhere. It generates more raw horsepower than the KDX, which gives it noticeably faster acceleration on the open trails; the PE turns more quickly, despite having steering geometry similar to the Kawasaki's, and that allows it to snake through the tight woods faster and easier; and when you combine that with a superior suspension that smoothes out any and all trail nasties more efficiently, and top off the whole works with ergonomics that actually fit my six-foot-one frame, it's easy to see why there's a new love in my enduro life. Maybe I'm fickle, but I'm no fool. I know a winner when I see one. *—Paul Dean*

• I've often been asked which bike I'd buy if the government, my wife or the bank manager said I could have only one. I've never really answered the question because there are so many good machines and not one stands head and shoulders above the rest. But Suzuki's just supplied me with an answer for that question: the PE175.

I know a lot of you will look at me strangely for my choice; after all, 175s aren't serious bikes anyway. Right? Wrong; the PE175 not only is a serious bike but it's also fun, and above all it makes me look and feel good. It has enough low end to grunt through the gnarliest of enduro sections, and enough horsepower to make the trees blurr on any trail. But, in keeping with its 175cc heritage, the PE can be wound open all day without getting me in over my head. I come away from every ride feeling that I've ridden harder and faster than ever before.

And because the PE feels as light as a racer's bank balance, it doesn't tire me out. Its full-sized features fit my six-foot-two frame even better than some 250s. So while I hope the government, my wife or the bank never asks me to make the decision, at least there's a choice that I can live with. *—David Dewhurst*

CYCLE GUIDE SPECIFICATIONS

Suzuki PE175Z — enduro

IMPORTER: U.S. Suzuki Motor Corporation, 3251 East Imperial Highway, Brea, California 92621

SUGGESTED RETAIL PRICE: $1529

ENGINE

Type ..... two-stroke vertical single
Port arrangement ..... one piston-controlled intake, one reed-valve-controlled intake, four main transfers, two booster transfers, one exhaust
Bore and stroke ..... 62.0mm x 57.0mm
Displacement 172.1cc
Compression ratio (corrected) 7.9:1
Carburetion ..... one 34mm Mikuni slide/needle
Air filter ..... dual washable oiled foam two-stage elements
Lubrication ..... pre-mixed fuel and oil
Starting system ..... primary kick
Ignition ..... external-rotor magneto CDI
Charging system ..... none; direct AC lighting

DRIVETRAIN

Primary drive ..... straight-cut gears; 2.762:1 ratio
Clutch ..... wet, multi-plate
Final drive ..... #520 chain (5/8-in. pitch, 1/4-in. width); 3.833:1 (46/12) ratio

Gear	Internal gear ratio	Overall gear ratio	MPH per 1000 RPM
I	3.091	32.724	2.4
II	2.214	23.443	3.3
III	1.706	18.061	4.3
IV	1.353	14.324	5.4
V	1.091	11.550	6.7
VI	0.913	9.667	8.0

SUSPENSION/WHEEL TRAVEL

Front ..... Kayaba air-spring, 38mm stanchion tube diameter/10.0 in. (254mm)
Rear ..... Kayaba single shock, 10mm spring preload adjustment, 4-way adjustable rebound damping/9.8 in. (249mm)

BRAKES

Front ..... drum, single-leading shoe
Rear ..... drum, single-leading shoe, rod-and linkage-operated

TIRES

Front ..... 3.00 x 21 Bridgestone Motocross M25
Rear ..... 4.00 x 18 Bridgestone Motocross M20

DIMENSIONS AND CAPACITIES

Weight ..... 229 lbs. (104kg)
Weight distribution ..... 45.9% front, 54.1% rear
Wheelbase ..... 56.8 to 58.2 in. (1443 to 1478mm)
Seat height ..... 36.3 in. (922mm)
Handlebar width ..... 32.3 in. (820mm)
Footpeg height ..... 16.0 in. (406mm)
Ground clearance ..... 12.5 in. (317mm), at skid bars
Steering head angle ..... 28.0 degrees from vertical
Front wheel trail ..... 4.45 in. (113mm)
Frame ..... tubular chromoly steel, single front downtube
Fuel tank ..... plastic, 3.3 gal. (12.5l), no reserve
Instrumentation ..... tripmeter resettable in tenths

PERFORMANCE

Top speed (observed) ..... 75 mph (121 kph)

WARRANTY: none

AVAILABLE COLOR: yellow only

All weights and measurements are taken with machine unladen and fuel tank empty