

Dirt Test

Suzuki's PE175 has long been the pace-setter in its capacity bracket, the most fiercely-contested for production enduro bikes. The Full-Floatered PE175Z is still at the head of the pack.

'Catch-Us-If-You



Can'

WHEN Suzuki introduced the PE175 some five years ago, the bike was the first of what was to become a trend from the Japanese factories — a competent, purpose-built, motocross-derived enduro mount which was capable of pulling medals at any one, two, four or six-day event, yet came at an affordable price. Previous "enduro" offerings from the East were more in the range of dual-purpose trail bikes. If you wanted to get serious in enduro competition, you had two equally-expensive choices: go

for one of the specialist European models which dominated this sector of the market, or upgrade your Japanese trail bike with performance accessories.

The first PE175 quickly established itself as the most popular enduro model to come out of Japan, prompted top-class 175 cm³ offerings from Kawasaki and Yamaha, and set the capacity bracket up as the one which was the first with new technology at each model change.

True to this approach, the PE175Z is the first of Suzuki's enduros to get the Full Floater suspension treatment. But the company has adopted a stance with the PE range which is at odds with the technical advances pumped in, and this

is to make very few changes to the bikes' looks with each successive model. With the visible plastic components and colour schemes varying only in detail, the PE175 might fool people into thinking it was nearly the same bike as five years ago. In reality, the Z model is in every respect as much a new-generation dirt-digger as the motocross models from which it is derived.

No Star Wars looks

In a side-by-side comparison with the other Japanese 175s, the PE does not quite have their Star Wars appeal. Instead it borders on the old European theme of simple and uncomplicated function. The PE is tidy — and it performs. The very plush and effective suspension allows the PE175Z to be raced competitively and ridden hard under any conditions. Unfortunately for some, to reveal the full extent of its ability the new Suzuki is best ridden just that way — hard.

It is a pity that Suzuki chose to leave the graphics of the new PE175Z looking very much like the previous models, because in fact it is a vastly different machine. A growing trend is to make enduro bikes very much like motocrossers and to graft many of the



successful motocross features straight onto the enduro machines. The PE175Z follows this trend, and shares more of the RM's components this year than it has ever done before. All up, the number of changes wrought to the Z model make it difficult to find parts it shares with last year's PE175.

The Full Floater suspension, front forks, airbox, and straight-pull spoke wheel hubs come right off the RM. Other changes such as the porting, new expansion chamber, sideplates and mudguards, dog-leg control levers, and folding gear change and brake lever tips are exclusive to the new PE, and are all the 175Z needed to stay in the enduro fashion race. Even the seat has been changed, leaving the fuel tank and the bottom end of the engine the only major components left over from last year.

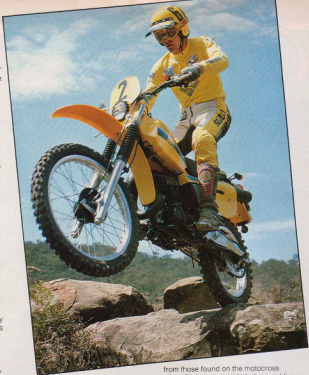
Despite the Z using last year's bottom end, the great number of porting and pipe changes make it very different to ride. The new engine could best be described as a screamer. As a result of the porting changes and a very rich mid-range jetting, the PE runs best wide open. It has a little less bottom end than before, about the same strong mid-range, and more top end than ever. As a result, a motocross rider would set the trails alight and feel right at home. The more passive rider won't necessarily be disadvantaged because the bike does have sufficient power and good gearing to allow it to be taken anywhere. It's just that it feels more in its element when ridden with a heavy wrist.

We found the rich mid-range jetting to be a significant problem on both the road and the dirt. The main problem arises when attacking twisty sections or racing up steep hills. Because the mixture is rich on the needle jet, the PE has a tendency to hesitate while the engine tries to unload some of the excess fuel. When it does get on the mainjet, it picks up considerably and lurches ahead.

There are three ways you can deal with the problem: Decide that you don't ride hard enough to consider it a problem, and live with it; adopt the motocross trait of using handfuls of throttle and fan the clutch to keep the PE on the pipe; or thirdly, experiment by first lowering the needle and, if necessary, try a leaner needle jet.

Road work a hassle, too

On the road, the problem is even less tolerable. Because the PE is geared for the dirt, top speed is around 90 km/h. It is only natural for a small-bore machine like the PE to lose some speed on a steep incline, but because of the jetting, the effect is amplified. Instead of losing say 15 km/h, the engine falls back into



this rich band of carburation and leaves you with no choice but to change down a gear or two. With proper jetting, we can't see the PE losing as much speed on hills as we experienced.

Jetting aside, the PE delivers enough punch and has gearing low enough to get even the most inexperienced rider up most tricky climbs. Any rider finding first gear not enough to pull him up a hill is simply turning the throttle the wrong way.

Lifting the front wheel in the first three gears to clear obstacles or to show off is fairly easy once you learn to locate the PE's power. Ground clearance is certainly not a problem, but the factory has tucked all the levers well in and welded enough tubing under the motor to prevent any damage from trees or rock ledges.

The suspension on the PE is nothing short of superb. The new Full Floater rising rate system on the RMs has proven to be the best rear end suspension on the market. We feel the same applies to the 175 enduro, even though the shock absorbers are different

from those found on the motocross bikes. The promotional blurb we got for the bike suggested it had a similar shock with remote reservoir. Not so. The shock body on the PE is about the same size as the small unit found on the RM125Z, but definitely without a remote reservoir. We would like to see one next year, as the damping can be felt to fade marginally after a while on very fast fire trails. The same would apply to desert racing.

Thanks to the rising rate springing of the Full Floater system, you get both a plush ride over the smaller bumps and enough firmness to handle heavy bumps and ruts. The other good news about the PE's back end is that — like the RM — its behaviour is very forgiving. Hitting rocks and holes at odd angles does not kick the back end up suddenly or pitch the machine to one side. Riders who like to sit down a lot when they ride will love the suspension on the PE.

The front forks are the same Kayaba units you will find on the RM125 and offer a very compliant ride, which complements the back end. Standard oil levels in the forks with no air assist should prove fine for most riders, as will standard preload on the rear shock.

Suzuki PE 175Z

ENGINE

Single-cylinder air-cooled two-stroke; power reed induction, piston-controlled porting. Built-up full circle flywheel crank, supported on two ball bearings. Caged needle roller bearings on big and little end.

Claimed power	N/A
Claimed torque	N/A
Bore x stroke	62 x 57 mm
Displacement	172 cm ³
Compression ratio	7.9:1
Carburation	Mikuni VM34SS
Air filter	Twin oiled foam element
Ignition	CDI magneto
Lubrication	Petrol mix

TRANSMISSION

Gear primary drive through wet, multiplate clutch to six-speed, constant mesh gearbox. Final drive by 520 roller chain.

Ratios (overall: 1)	
First	34.14
Second	24.46
Third	18.20
Fourth	14.36
Fifth	11.54
Sixth	9.67
Primary reduction	2.762:1 (56/21)
Secondary reduction	4.000:1 (48/12)

FRAME AND BRAKES

Welded tubular chrome moly steel frame. Single front down tube, double engine cradle. Box section swinging arm. Oil-damped coil spring telescopic forks, air assisted. Rear suspension by single gas/oil spring/damper unit and Suzuki Full Floater linkage system. Single leading shoe drum brakes front and rear.

Front suspension travel	260 mm
Rear suspension travel	270 mm
Fork rake	62 degrees
Front wheel trail	113 mm
Front brake diameter	130 mm
Rear brake diameter	130 mm
Front tyre	3.00 x 21 Bridgestone
Rear tyre	4.10 x 18 Bridgestone

DIMENSIONS

Dry weight	104 kg
Seat height (bike unladen)	925 mm
Wheelbase	1360 mm
Ground clearance	305 mm
Footpeg height	360 mm
Fuel capacity (incl. reserve)	10.6 litres

EQUIPMENT

Footpegs	Cleated steel, spring loaded
Controls	Blinkers, lights, horn, speedometer
Kill button	Yes
Guards	Plastic front and rear
Tank	Plastic
Toolkit	Two-piece multi-tool
Throttle	Plastic side-pull type

TEST MACHINE

Manufacturer	Suzuki Motor Corporation, Hamamatsu, Japan
Test machine	Suzuki Australia, Camella, NSW
Price	\$1600

SUMMARY

RATINGS	Poor	Below Average	Average	Above Average	Outstanding
ENGINE					
Responsiveness			●		●
Smoothness			●		
Low rev power				●	
Midrange power		●			
Top end power				●	
Starting					●
Quietness					●
TRANSMISSION					
Clutch					●
Gearbox operation			●		
Ratio suitability				●	
SUSPENSION					
Front travel					●
Rear travel					●
Front operation					●
Rear operation					●
Front/Rear match					●
RIDING					
Steering — soft ground tracks					●
Steering — hard ground tracks					●
Brakes overall		●			
Ability to slide					●
Stability on jumps					●
Stability and predictability overall					●
Slow, tight radius turns					●
Medium, variable radius turns				●	
Fast, wide radius turns					●
Ease of riding in mud conditions					●
In sand conditions					●
Manoeuvrability overall					●
Ability to forgive rider error					●
Hill climbing				●	
Competition suitability					●
GENERAL					
Riding position					●
Wheel changing					●
Ride comfort					●
Tyres				●	
Location of controls				●	
Quality of finish				●	
Mechanical access				●	
Overall design					●
VALUE FOR MONEY					
					●

Best points: Full Floater suspension and Kayaba front forks give the PE175 best suspension available. Straight-pull spokes are maintenance free; all service points easily accessible; light weight. Best standard tyres out of Japan; excellent quick change rear wheel; optional centre stand.

Worst points: Poor quality brake shoe linings for a competition machine. Very rich mid-range jetting stifles engine potential; gearbox prone to the odd false neutral. Very large rear tail/stop light easily damaged; no tool/spare parts pouch supplied.

Steering faultless

We couldn't fault the steering on the PE. On hard ground or in sand or mud, we found that the bike steered predictably without any shaking or washout. The Bridgestone tyres with the rimsaver bead are about the best to come out of Japan for trail bikes, and no doubt helped the front end go where we pointed it.

Another feature taken straight off the RMs is the adoption of straight-pull wheel hubs which require very little attention and maintenance right off the showroom floor. With this feature and the Bridgestone rimsaver tyres, it is hard to imagine anyone having a problem with bent rims or broken spokes. However, when you pick up your PE, you are going to have to buy a spoke wrench as well. All Suzuki offers with the bike are two multi-purpose tools which clip onto the front number plate mount. These two tools will perform most jobs, but you still require a spoke wrench, Phillips-head screwdriver and a pair of pliers. For this reason we would have liked to see a vinyl pouch mounted behind the seat in the same manner as other Japanese enduro bikes.

Suzuki's quick-change rear wheel with the cushion-drive rear hub is an excellent addition to a machine of this sort. We couldn't see a reason to change it last year and can't think of one

now. Using the multi-tool, even the clumsiest rider can whip the rear wheel off in less than a minute, leaving the rear sprocket and brake assembly attached to the left side of the swinging arm.

It is good to see Suzuki finally update its choice of controls. Last year, Suzuki was the only factory not to use dog-leg hand levers and folding foot controls. For the current PE we find comfortable dog-leg levers and folding shifter and rear brake arms. The only thing that lets the show down is that, unlike the RMs, the handlebar lever mounts are not two-piece units which can be removed without taking off the throttle or hand grip. Perhaps it was too much to expect in one year.

The rest of the controls except the mirror work well and are easily reached while riding. The mirror we found on the test bike was cheesy, it never stayed in place and finally fell off, while we were riding. We heard of one falling off from the water pressure of a garden hose, so ours probably wasn't an isolated case. The ideal unit would be a stronger one mounted on a shorter arm to prevent it being clipped by branches or crushed in a fall.

Design Rules rule, OK?

Getting many enduro bikes registered has been a problem due to Australia's strict design rules. PE owners will not

have a problem as Suzuki has gone all out to comply. One of the moves has been to replace the small rubber-mounted taillight of old with a large square unit. This light may not only be a threat to one's reputation, but also can be easily broken in the lightest of falls. The blinkers are much less obtrusive and breakage-prone, and can be removed in a few minutes to cut down on weight and repair bills.

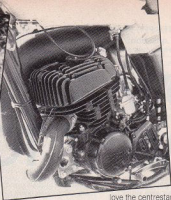
While on the subject of ADRs, a few riders we came across during the test were interested in modifying their PE silencers to improve engine performance. We do know of several riders who have cut the round tip off the silencer end and cut open the plug of the perforated inner sleeve. If you don't know what you are doing, you could easily ruin your silencer. A better move would be to invest in an accessory unit with a spark arrestor.

Maintenance of the PE is very easy, with few areas needing attention. One word of advice — strip down the rear suspension unit before much riding is done to ensure the pivot points are well greased. The central bellcrank is an aluminium arm which uses roller bearings. Should someone in the factory have slapped your bike together quickly, you will soon be up for a great deal of expense and aggravation. Ideally, Suzuki will follow Yamaha and Honda's example and mount grease nipples to the D models. Once well greased, the back end should be good for at least six months.

With the straight-pull spoked wheels, the only maintenance worth talking about is adjusting the chain, cleaning the air filter, and changing the gearbox.



Simple good looks mask the PE's high-tech appointments (left). Spring/damper unit for the rear (above) works well.



Quality ancillaries like doggie levers and side-pull throttle make the life of a PE rider easier (far left). Note the "tool kit" clipped to the right fork stanchion. It works well, but a spoke wrench is also needed. The 175 cm³ m/c (left) is an honest performer, responds well to carburation fine-tuning.

oil. All these things can be completed in an hour, making the PE an ideal machine for those who require a high performance trail bike with a low maintenance program.

We recommend you use Bel-Ray light viscosity or Castrolite oil in the gearbox of the PE, as thicker oils tended to result in clutch slippage and a few false neutrals. Bel-Ray LV gave us good clean shifts and reduced the number of false neutrals we encountered earlier.

Out of the crate, the PE175S offers better performance and handling than we have found from a Japanese enduro bike. There is no doubting the Japanese

mean business. Setting the PE up for serious competition simply involves a few jetting changes, the removal of blinkers and taillight, and a change of tyres if you are fussy about your rubber.

One optional item available from Suzuki which we feel is worthwhile is a centrestand. On the crossbar under the swinging arm pivot are two pairs of tabs for mounting this centrestand. You either love them or hate them. If you hate carting around a petrol drum in case you'll

love the centrestand.

The outstanding good point about the PE175S is its suspension. Without any doubt, it is the best. Because we find it a lot easier to live with a rich-running motor, or to do a little bit of jetting rather than invest a lot of time and money into getting a lesser suspension to work better, we would pick the PE above its competition as best value for money. And while it is best suited to a person who likes to ride his bikes hard and fast, just because you're a slower rider doesn't mean you need a slower bike.

— D. E.

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The PE175 is such a capable all-rounder that owners quickly ask the question: How can I get more power? The answer is easy, and takes the form of another question:

HOW FAR DO YOU WANT TO GO?

WHILE we were testing the PE175Z, we were struck by the number of new owners of the PE who were looking to turn their bikes into something sharper than stock. General opinion seemed to agree with our evaluation that the PE makes a competitive enduro mount or all round fun bike with the best suspension available, but with a great deal of untapped potential dormant inside the black engine cases.

By the time we finished the test, we too were curious to get the feel of a hotbed-up PE175. Like the other PE riders, we figured a bit more of a good thing could only be better.

Sydney tuner Frank Pons has carried out a good deal of development work on

dirt-oriented Suzukis over the past few years. Dave Ewins spent a couple of days with him checking out various modifications guaranteed to get a PE going like the clappers.

As a starting point, we looked at the performance of the standard test bike, pondered on exactly what was required to sharpen up the machine's abilities, and then gauged how far you could go to attain what several of our testers considered "the ultimate trail-blazer".

Judging from the list we made up, the available alternatives are endless. This can be interpreted several ways. Firstly you may take the view that by spending considerably less money than would be involved in purchasing a new bike, you could continually improve the PE175Z

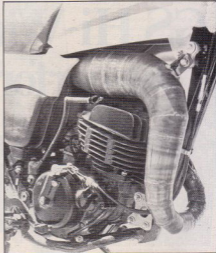
over a period without feeling you were flogging a dead horse. The results will justify the cost. Or secondly, you could take this as fair indication that while advances in motocross bikes have been extremely rapid, enduro bikes have been following a much more gradual process of improvement in sophistication and performance. Either way, you have a top-performing trail bike that can be improved as far as your wallet will allow.

Before the high costs

However, before you even get into the high-cost league, the engine performance of the PE can be greatly increased simply by fine-tuning the existing 34 mm Mikuni carburettor. After several hours we were able to work out



This is one really long-legged enduro machine! PE175 motor in RM125 frame also sports full tune-up treatment, goes like the clappers.



Close-up of the custom-built power pipe fitted to our test PE175Z. At \$160, the job is not super-cheap, but the improvement is starting!

exactly what jets were necessary and what other modifications were required to give the otherwise untouched PE a sharp, smooth and responsive powerband.

In standard form, the PE is generally too rich, and for warm summer months, the top end is a little lean. To lean off the bottom end involved substituting the No. 25 pilot jet for a 22.5, swapping the R3 needle jet with an R0, and replacing the 6DP17 needle with a 6DP1. To prevent the engine from ping-pong and risking seizure, we recommend you replace the standard 250 mainjet with a 270.

Completing the job requires two other simple yet vital modifications. The first is to file 0.75 mm from the cutaway of the carburetor slide. This helps improve starting as well as improving the idle and low end response. Secondly, take a look at the round tip of the silencer. You will find a small 20 mm hole from which the exhaust escapes. Australia is the only country with such a small hole; the standard practice is to have a 35 mm hole which improves the engine's performance a little. Rather than cut the whole cap off, open this hole to 35 mm. Other than doing this, your best bet is to buy an accessory straight flow silencer.

Having made the above modifications, you will find the power to be much stronger with a very clean and much smoother delivery. As a result, performance both in the dirt and on the road is significantly improved. Riders using the PE to commute to work on will now find that with the low gearing, the PE can be ridden around in fifth and sixth gear without needing to change down anywhere near as often as before. All-up cost should be around \$30.

Now for the next stage

Stage Two offers twice the benefits of Stage One, but at a greater price. For \$160, Frank Pons can fit a custom-made pipe to the PE to beef up the mid-range and top end of the powerband, as well

as improving the overall throttle response and acceleration. However, unlike many of these types of modification where the value of such a component is determined by the amount of dirt riding you do, the vast benefits associated with fitting the pipe can be appreciated as much on the road as in the dirt.

When using the standard pipe, the PE is hard pressed to pull over 105 km/h. With the power pipe installed, the bike easily pulls higher gears, accelerates at a much greater rate and will clock at least 120 km/h with the standard gearing! The mid-range and top-end power is improved to the point that the test PE would now accelerate hard up the steep hill we had to drop down to fourth or fifth gear to climb when the bike was in standard condition.

In the dirt, the same benefits apply, with the added advantage of being able to loft the front wheel much more easily, particularly at a faster speed where third and fourth gear wheelies can now be executed. One point we should mention however is that the pipe does lead to the PE losing a bit of low end grunt. Porting modifications can more than replace any torque lost off the very bottom, but even without this third-stage step, throttle response is so much improved that it well and truly makes up for any loss.

The porting modifications constitute Stage Three. At a cost of \$90 per barrel, the intake area is increased and the bottom of the transfers opened. This tends to widen the powerband and improve bottom end; no problem since most of the top end performance is generated by the pipe. With all three stages completed and a set of Boyesen reeds installed, the test PE would easily loop out in the first three gears if you weren't careful. The acceleration was now such that we level-pegged it with an XR500R that had the optional Honda hot-up kit installed! There was little else which could be done to the engine

without ruining its wide powerband and flexibility.

Frame and suspension

Further modification to the PE therefore involves working on the suspension and frame. Because the Australian models require a battery to be mounted, the Suzuki engineers were forced to remove the RM125-type shock absorber and mount the battery where the remote reservoir would appear in other countries. When you consider that this "Australian" type shock has no damping adjustments, it follows that the performance of the rear end can be improved if you are convinced the standard suspension — which is rated the best stock one available — is not good enough for you. At a cost of around \$400, an RM125-type unit can be fitted with excellent results. Following that, one could then fit RM125 damper rods and springs in the forks to increase their travel and bring the fork action into line with the improved motocross-type back end.

As you can imagine, the available modifications are endless using aftermarket products readily available from your dealer. To illustrate how far you could go, Frank Pons' associate Peter Worrall, a former Suzuki Australia workshop manager, built himself a PE175 using all the above modifications, a PE175T engine, and an RM125X frame. The result was a lightning-fast PE175 with around 300 mm of travel at either end and an overall weight of some 198 kg — at least 13 kg lighter than the standard PE175! The machine's performance is impressive to say the least. We think it will be several years before any factory releases a 175 enduro of its performance, which should give encouragement to those PE owners hoping to stretch several years out of their Z model. Your potential will be limited only by your bank account.



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