

SPECIFICATIONS	YZ490	YZ250	YZ125	YZ80
ENGINE				
Type	2-stroke, air-cooled, piston/reed-valve, single	2-stroke, liquid-cooled, piston/reed-valve, single	2-stroke, liquid-cooled, crankcase reed-valve, single	2-stroke, liquid-cooled, piston/reed-valve, single
Displacement	487 cc	246 cc	123 cc	79.1 cc
Bore and stroke	87.0 × 82.0 mm	68.0 × 68.0 mm	56.0 × 50.0 mm	47.0 × 45.6 mm
Compression ratio	6.94 : 1	8.54 ~ 10.12 : 1	8.4 ~ 10.5 : 1	8.6 : 1
Max. power (DIN)	61.0 PS (44.9 kW) @7,000 rpm	51.6 PS (38.0 kW) @8,250 rpm	37.1 PS (27.3 kW) @11,000 rpm	24.7 PS (18.2 kW) @11,750 rpm
Max. torque (DIN)	6.77 kg-m (66.4 Nm) @6,000 rpm	4.68 kg-m (45.5 Nm) @7,500 rpm	2.53 kg-m (24.8 Nm) @10,000 rpm	1.53 kg-m (14.9 Nm) @11,250 rpm
Lubrication	Premix	Premix	Premix	Premix
Carburation	Mikuni VM40SS × 1	Mikuni VM38SS × 1	Mikuni TM34SS × 1	Mikuni VM26SS × 1
Ignition	Capacitor Discharge	Capacitor Discharge	Capacitor Discharge	Capacitor Discharge
Starting	Kick	Kick	Kick	Kick
Fuel tank capacity	10.0 lit.	8.0 lit.	7.5 lit.	5.0 lit.
Transmission	5-speed, constant-mesh	5-speed, constant-mesh	6-speed, constant-mesh	6-speed, constant-mesh
Final transmission	Chain	Chain	Chain	Chain
CHASSIS				
Overall length	2,175 mm	2,170 mm	2,135 mm	1,795 mm
Overall width	850 mm	850 mm	850 mm	765 mm
Overall height	1,225 mm	1,230 mm	1,240 mm	1,060 mm
Seat height	950 mm	955 mm	935 mm	800 mm
Wheelbase	1,475 mm	1,470 mm	1,450 mm	1,235 mm
Ground clearance	335 mm	340 mm	350 mm	290 mm
Dry weight	102.5 kg	97.5 kg	87.0 kg	61.0 kg
Suspension				
Front	Telescopic forks	Telescopic forks	Telescopic forks	Telescopic forks
Rear	Rising-rate Monocross	Rising-rate Monocross	Rising-rate Monocross	Rising-rate Monocross
Brakes				
Front	Single hydraulic disc	Single hydraulic disc	Single hydraulic disc	Single hydraulic disc
Rear	Single mechanical drum	Single mechanical drum	Single mechanical drum	Single mechanical drum
Tyres				
Front	80/100-21 51M	80/100-21 51M	80/100-21 51M	70/100-17 40M
Rear	120/100-18 68M	110/100-18 68M	100/100-18 59M	90/100-14 49M

Specifications and appearance of Yamaha motorcycles shown here may vary according to requirements and conditions and are subject to change without notice. For further details, please consult your Yamaha dealer. Always wear a helmet and eye protection.

NEW FEATURES LIST

	YZ490	YZ250	YZ125	YZ80
Improved engine performance	●	●	●	●
O-ring seal at exhaust header pipe	●	●	●	●
Detachable silencer tail cap	●	●	●	—
Improved air filter	●	●	●	●
Front forks with Variable Damper	●	●	●	—
Revised rear suspension setting	●	●	●	●
Öhlins-type shock absorber with B.A.S.S.	●	●	●	—
Revised rear suspension leverage ratio	—	—	●	—
Needle-roller bearings in the swing arm pivot	●	●	●	—
Aluminium steering shaft	—	—	●	—
High-density cast front wheel hub	●	●	●	—
Wider rear brake shoes	—	—	●	—
New type brake master cylinder	●	●	●	●
Lightweight "waisted" spokes	—	●	●	—
Bearing-supported chain tensioner	●	●	●	●
Strengthened aluminium rear wheel rim	—	●	●	—
Front fork rubber boots	●	●	●	—

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LIT-3MC-0107961-87E



YZ490/250/ 125/80



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WORLD CHAMPION OR LOCAL HERO... YAMAHA'S YZ RACERS WILL KEEP YOU WINNING.

French motocross ace, Jacky Vimond, won the 1986 World 250cc Championship by the biggest margin in the history of the series... and he didn't need an exclusive "factory super-special" to help him do it.

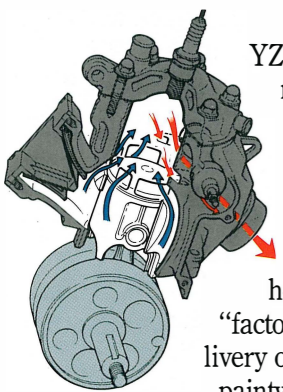
Jacky battered the opposition into early submission with a production Yamaha YZ250 fitted with just a few experimental modified parts.

Modifications now built in to the 1987 YZ250 to make it a winner at any level. Just like all Yamaha's YZ motocross racers, it's Championship quality that *you* can buy.



YZ250

THE YZ250: A WINNER FOR WORLD CHAMPION, JACKY VIMOND...AND FOR YOU!



Yamaha's YZ production motocross racers this year emphasise their World Championship heritage with their "factory team" livery of gleaming white paintwork for chassis, fuel tank, sidecovers and fenders allied to bright-red seat and fork gaiters and gold-anodized wheel rims and handlebars. And this visual link with the works racers is not just for show...the 1987 YZ range are all based closely on the factory bikes, none more so than the YZ250. It's a virtual replica of the machine that helped Jacky Vimond clinch the 250cc World title after two previous years in the runner-up spot. Jacky's Championship-winner was a production YZ250 fitted with various



development parts and modifications.

Having been proved on the toughest test-tracks of them all — the Grand Prix circuits — these development items have now been incorporated as part of the standard specification of the 1987 Yamaha YZ250.

The bike you can buy from your Yamaha dealer this year is basically the one that holds the World Championship!

Like all of the Yamaha range, the improvements on the YZ250 for 1987 are aimed primarily at making the machine easier to ride, without sacrificing any of its power advantage.

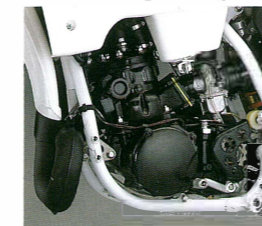
The cylinder, cylinder head and various intake and exhaust components have all been modified to increase the low-rpm and

mid-range power output. Beginning at the top of the engine; the YZ250 cylinder head has been re-designed to reduce combustion chamber volume, improve spark travel and increase compression



YAMAHA YZ DEVELOPMENT PROGRESS STAYS ON THAT UPWARD CURVE.

Season by season development of a solid and successful basic product is the key to winning motocross races... as Yamaha have been proving to the world since 1973 when we won our first



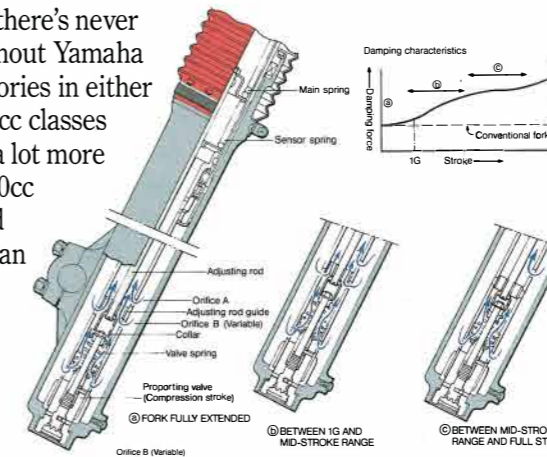
world 250cc Championship with Hakan Andersson.

Since then, there's never been a year without Yamaha Grand Prix victories in either 125, 250 or 500cc classes and we've won a lot more

World Championships as well! Two 500cc titles with Heikki Mikkola in 1977 and 1978, another big-class crown for Hakan Carlqvist in 1983, 250cc Championships for Neil Hudson in 1981, Danny LaPorte the following year and now Jacky Vimond in 1986.

That's the pedigree of our YZ range of production racers!

Each season, the lessons that we learn from the machines of our factory riders are applied directly to the following year's



customer models. Over the years, Yamaha have introduced power advantages like the YPVS variable exhaust timing control, reed-valve Torque Induction and YEIS induction "boost chamber" as well as numerous suspension innovations. That progress continues on its upward curve for 1987.

Current motocross engines already have a power level enough for most riders or racetracks. Therefore, the development focus this season has been on smoothing out that power delivery so that any competent rider can use every bit of it.

Revised cylinder porting maintains top-end advantage out spreads the power wider across the lower and middle rpm range. Scary high-revs power surge is eliminated and lap times trimmed as well!

Suspension innovations continue with Variable Damper front forks that use a sensor spring to self-adjust damping flow valves in direct relationship to the fork's stroke speed and length of travel.

The YZ front-ends now ride light and smooth over normal terrain but automatically stiffen their resistance when the bigger bumps demand it.

Yet another easy-riding advantage to keep the Yamaha YZ motocross racers in Victory Lane!

ratio. Complementing this are changes to the cylinder porting and a re-profiled YPVS valve.

Exhaust performance and efficiency have been improved by the use of a bigger expansion chamber and O-ring sealing between header pipe and cylinder, while the muffler has a detachable

end-plate to facilitate easy changing of the glassfibre silencer elements.

On the intake side, there's a new, large-capacity air filter, neatly-housed in the integral airbox/sidecover unit.

All of this — plus the increased flywheel effect of the larger crankshaft flywheels, and transmission ratios revised to match the new power delivery — means

that there's never been a smoother, more powerful, more controllable YZ250.

These characteristics are further enhanced by our chassis improvements. The swinging arm now pivots smoothly on four needle roller bearings, rear suspension damping and spring rates are improved and the front forks are Yamaha's new Variable Damper type.

These provide self-adjusting compression damping in direct ratio to the fork's stroke speed and travel by using a sensor spring located beneath the main fork spring. As the forks begin to compress, this monitors the stroke and automatically adjusts the damping system's base valve and fluid flow.

Simple and compact, the Variable Damper unit gives light and easy action over the smoother going but toughens up as it hits the rough stuff. The best front suspension action for any terrain... automatically. And a perfect match for Yamaha's superb Monocross system at the rear.

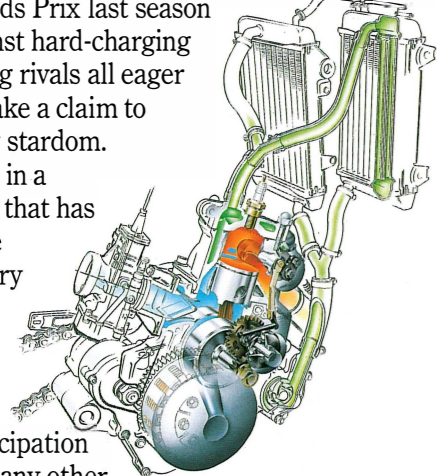
From its advanced suspension systems to the big-horsepower, high-torque engine, the Yamaha YZ250 is World Championship quality all the way.

YZ125

THE YAMAHA YZ125 — A WINNER IN THE WILD WORLD OF 125cc CHAMPIONSHIP RACING.

In the hotly-contested 125cc class of World Championship motocross, Dutch teenager, John van den Berk, is one of the very best. The winner of several Grands Prix last season against hard-charging young rivals all eager to stake a claim to early stardom.

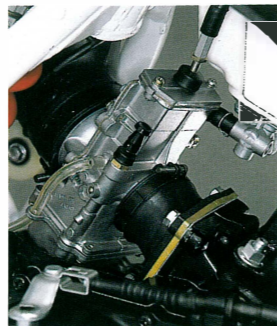
And, in a class that has more factory participation than any other, John scored his successes on a *production* Yamaha YZ125 armed with only a few special development parts.



These parts have now become part of the 1987 Yamaha YZ125 production specification. What won for Van den Berk last season can now do the job for *you!* Engine, chassis and suspension components have all been upgraded to full Championship calibre in the latest stage of the continuing development programme on our smallest GP contender.

Let's start with the engine, where the aim — in common with all four models in our YZ range — has been to smooth out and spread the power band without sacrificing top-end performance.

We've achieved this by various modifications. New cylinder port shapes and timing, with a YPVS power valve re-design to match. Re-drilled crank webs that change the crankshaft balance factor to reduce vibration. Upgraded electrical spark advance control for more accurate ignition timing. A new, large-

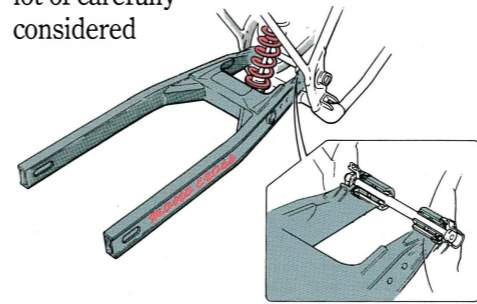
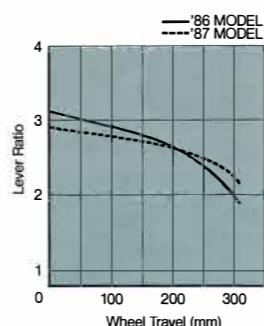


capacity expansion chamber exhaust, efficiently-jointed to the cylinder with an O-ring seal. A revised air-intake tract for the crankcase induction plus re-shaped float and baffle plates in the carburettor to eliminate "bogging" which occurs sometimes if the throttle is snapped quickly open after landing from a jump.

The flat-slide carb now pulls air through a new, high-volume air filter... the same free-flow component we use on the bigger YZ250 and YZ490 racers. A two-piece clutch rod engages the transmission smoother than last year's one-piece item and eliminates clutch

judder on take-off while an extra oil groove to the main crankshaft bearing and wider transmission gears enhance reliability.

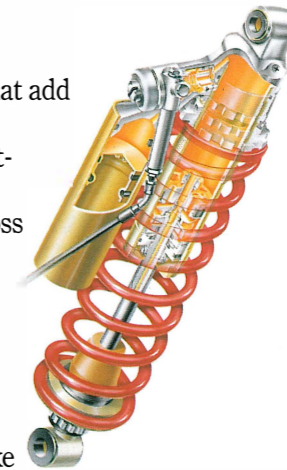
So... no major re-designs or specification changes. Just a whole lot of carefully-considered



modifications that add up to one of the smoothest, most powerful, most flexible motocross engines around. And that added flexibility this year pays dividends in two key areas.

It makes the bike even easier to ride and, by reducing the need for sustained high-rpm "power band" riding with constant gearchanging, reduces vibration and stress on engine, transmission *and* chassis components.

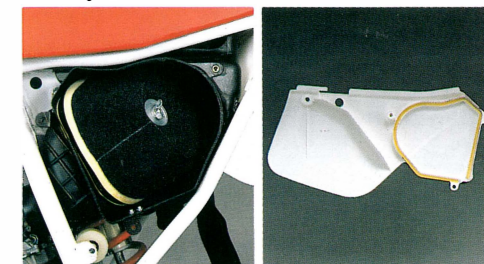
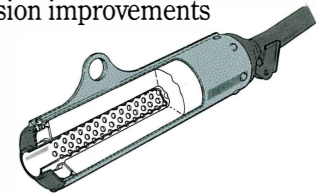
On the chassis side, we've also adopted our new Variable Damper front forks for the YZ125. They pivot smoothly on tapered roller head bearings and use an alloy steering



shaft to save weight.

Extra traction is gained by revised rear suspension linkage geometry that changes the leverage ratio on the shock absorber to reduce rear wheel patter. The swinging arm now pivots on low-friction needle-roller bearings.

Suspension improvements proved by Grand Prix successes and now passed on to you!



Flat-slide carburettor breathes through a new, high-volume air filter. Re-designed float bowl layout eliminates engine hesitation when the throttle is opened quickly.

New, two-piece clutch rod makes for smoother engagement and cuts out transmission judder on take-off.

Swinging arm pivots smoothly on needle-roller bearings. Chain tensioners now have smoother action thanks to bearing support instead of bushings.

Exhaust pipe is efficiently-jointed to cylinder by an O-ring seal. Silencer end-plate is detachable to allow changing of muffler element.

Rising rate linkage geometry is changed to give more progressive suspension as travel increases. Reduces rear wheel patter to gain traction.

High-density alloy rear wheel rim is stronger this year. Spokes are "waisted" to save weight without sacrificing strength at stress points.



Alloy steering shaft saves front-end weight. Tapered roller bearings provide strong support and guarantee easy steering action.

Spark advance of the CDI unit is now electronically-controlled to give more precise ignition timing.

High-precision cast chassis joints are stronger and save weight.

Variable Damper front forks give light, smooth action on normal terrain but automatically strengthen their resistance when the going gets tough.

New, lightweight front hub carries the front disc brake. It is a super-strong, high-density vacuum casting.

YZ490

NOW IT'S EVEN EASIER TO WIN WITH YAMAHA'S YZ490!

Unless you happen to be one of a handful of motocross superstars, the Yamaha YZ490 can deliver all the horsepower that you can deal with. Just how it's delivered is what is the key factor... for all the power in the world is no use at all if it simply shoots you off the track and into the bushes!

That's why our efforts with the latest YZ490 have been directed at making full use of what's available. Quickening the throttle response and spreading the power flow across the low and mid-range rpm band so that the big motor spins like a turbine and pulls like a train.

We've done this by re-porting the cylinder with six (two more than last year), plus revised intake and exhaust timing, a larger expansion chamber and induction tract modifications.



The YEIS "boost chamber" and new intake manifold improve mixture intake, while the engine breathes easier via a new, free-flow air filter. The filter housing is integral with the bodywork sidecover to better prevent the unwanted entry of dust and water.

Along with smoothing out the power surge, we've also even further refined the handling of our biggest motocrosser.

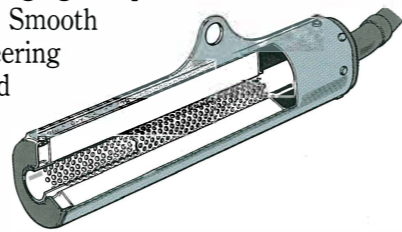
This year, the main advance comes at the front end, with the introduction of our Variable Damper forks.

These use a sensor spring, located beneath the main spring, which monitors fork stroke speed and travel, then automatically adjusts the damping base valve and fluid orifices to achieve rising rate damping as fork movement increases.

The bigger the impact, the better the forks resist it! Plus they also automatically resist the bike's natural tendency to "nose dive" under the forward weight transfer of heavy braking.

To match the new front end handling characteristics, the setting of our Mono-cross rear suspension is revised and its action is made still smoother by the use of four needle-roller bearings at the swinging arm pivot.

Smooth steering and

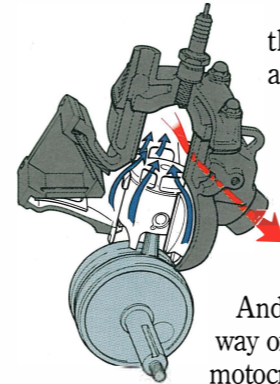


smoother delivery of all the power you can handle.... it's going to be even easier to win races with this year's Yamaha YZ490!



YZ80

YAMAHA YZ80—NO BETTER WAY TO BEGIN THE RACING GAME.



In any sport, the biggest step of all is usually the first one. Start out right and you've a much better chance of finishing with success.

And there's no better way of starting out in motocross than with the

Yamaha YZ80. No better way of either enjoying the sport for sport's sake or of preparing yourself for the bigger World Championship classes if you find that's the way you want to go.

Thousands of young riders have been down that road before you. Many of them are now your Grand Prix heroes!

To give you every chance of following in their footsteps, Yamaha are always

upgrading their smallest motocross racer. Making sure that you have every possible advantage over your rivals on other brands.

For 1987, we've increased the YZ80 horsepower right across the rev-range. Added top-end urge for extra speed but also spread the overall power over the low and mid-range so that the small engine is flexible and can be ridden without relying on screaming rpm.

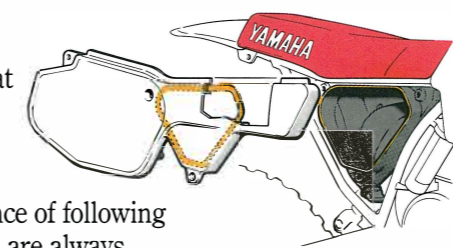
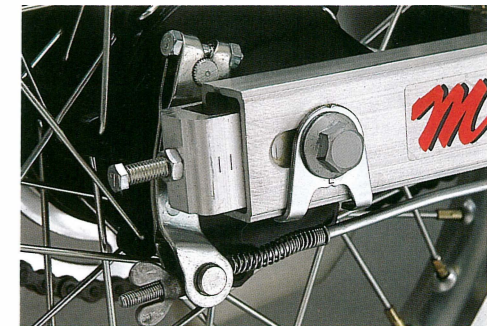
We've done this by re-porting the cylinder, re-designing the expansion chamber exhaust (including an O-ring joint with the cylinder as on our bigger YZs) and using larger, square-ended reed valves to improve intake flow.

To cope with the demands of the extra power output, both cylinder wall and piston crown have been strengthened to resist distortion.

Today's small-class riders are getting bigger all the time, so the 1987 YZ80 shock absorber settings are stiffened, seat base given extra padding and footrests strengthened to allow for this.

Braking power is increased by new semi-metallic, all-weather front disc brake pads using non-ferrous materials, while a longer shift pedal makes gearchanging smoother.

Significant detail improvements on a bike already rated top of its class... No wonder there's no better way to begin the racing game!



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