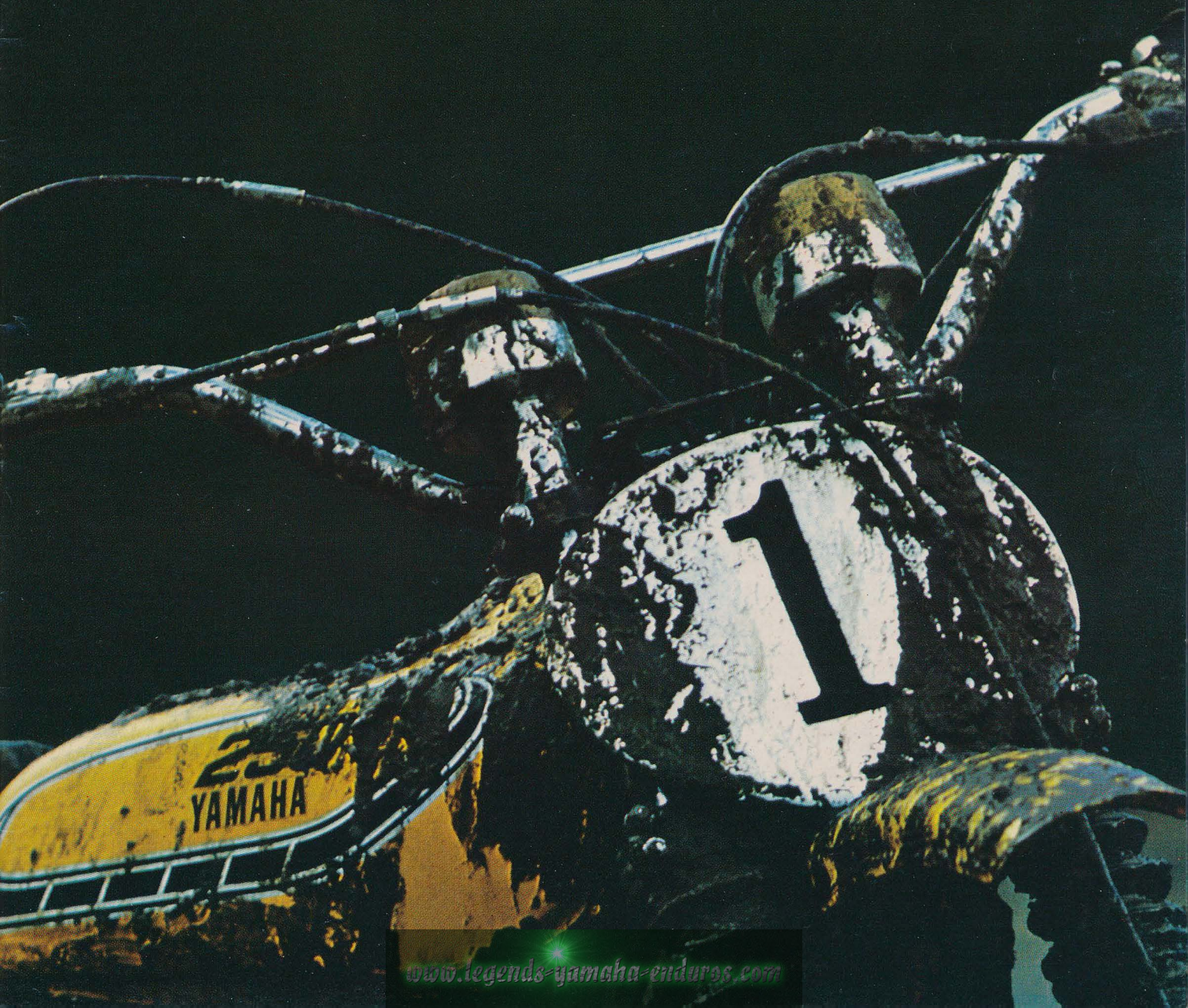


THE STATE OF
THE ART:

THE 1976
YAMAHA YZ.



Monocross and Air/Oil Forks are the most important breakthroughs in motocross suspension since Velocette scrapped the rigid frame.

Without a doubt, Velocette's invention of the swing arm frame opened up a new world for motorcyclists. The swing arm frame created rear wheel travel.

Today, Yamaha's Monocross has created a similar revolution by allowing the rear wheel an amazing amount of travel.

Monocross: Why it works so well.

The reason why Monocross works so well is the center-mounted long travel shock absorber (see drawing) that's fixed to a rigid triangulated swing arm. It's really two innovations. The rigid triangulated swing arm holds the rear wheel in perfect alignment, and the 70 degree

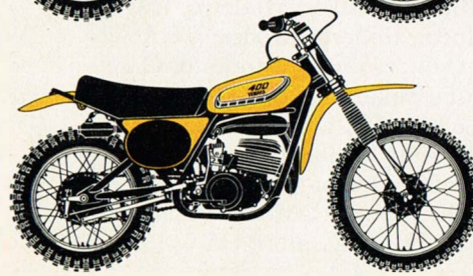
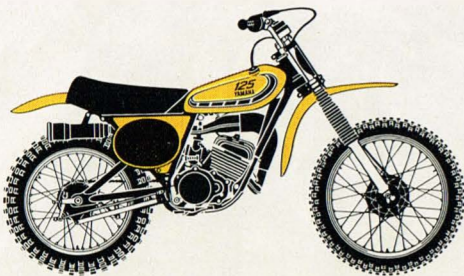
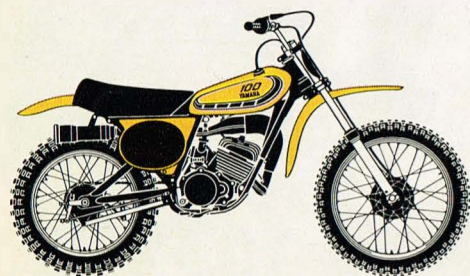
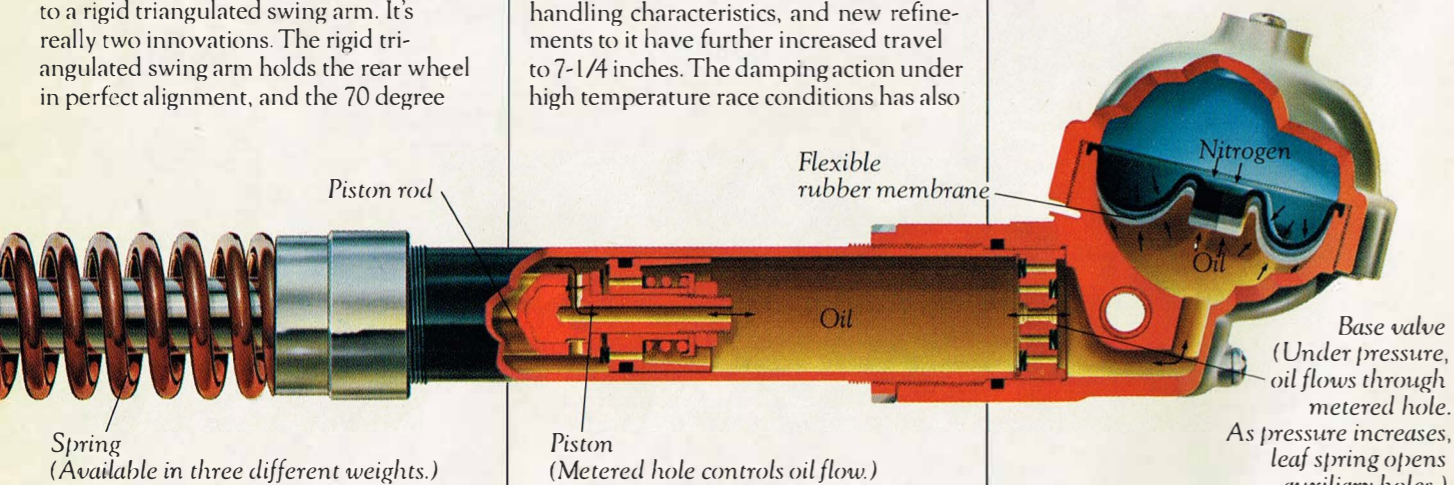
angle of the center mounted shock provides an extraordinary amount of travel. The shock absorber itself functions in 3 distinct stages: (1) the coil spring absorbs most of the shock; (2) shock is also transmitted by the piston and damping oil to the rubber membrane where it's absorbed by the nitrogen pressure, which also serves to keep outside air from mixing with the damping oil; and (3) as the shock returns to its extended position, damping action takes place in the piston and base valves.

This 3-staged shock absorption is the reason for Monocross's extraordinary handling characteristics, and new refinements to it have further increased travel to 7-1/4 inches. The damping action under high temperature race conditions has also

been improved by an enlargement of the nitrogen chamber.

The total effect of Monocross is this: a stable rear wheel stays on the ground longer so that the motorcycle goes forward faster. The proof of this has been amply demonstrated in countless amateur races. Certainly, Jimmy Weinert's clinching the 500cc National Motocross Championship on his Monocross-equipped Yamaha YZ400 is the highest form of professional endorsement.

Monocross is available on all the full-sized Yamaha YZs.



Air/Oil Forks: What they mean to motocross.

The Air/Oil Forks are a radically new way to suspend the front of a motorcycle by using two pressurized air chambers and damping oil. They are as great an advance in front suspension as Monocross is in rear suspension.

The Air/Oil Forks offer a rider two different stages of fork travel: initial travel for typical track irregularities, and final travel for severe bumps.

This is accomplished without either a conventional or progressively wound spring: the Air/Oil Forks work by a rather simple principle: pressurized air does exactly what a spring can do, with the obvious advantage of being almost infinitely adjustable, which no spring can be.

The forks' initial travel is controlled by the air pressure in the first chamber. It can be adjusted up to 35.5 psi through the valve on the side of the accumulator.

- 1st air valve
- Accumulator
- Final travel piston (This piston, under as much as 70psi, is activated when travel passes the mid-point.)
- 2nd air valve
- Air

- Oil
- Rubber fork tube covers
- Damper valve assembly

The final travel is controlled by the second air chamber, which can be adjusted up to 71 psi through the valve on the top of the accumulator.

The amount of pressure in each air chamber can be easily adjusted to whatever travel characteristic the rider or the track demands. Something impossible with a spring. And pressure characteristics are extremely easy to change. The job can be done at track-side during practice or between motos. The Air/Oil Forks offer a rider a degree of control that no spring can. Control, after all, is the principle demand of motocross racing.

The Air/Oil Suspension, in new non-flexing forks, is available on the YZ125, 175, 250 and 400.

When you know how they're built, you'll buy a Yamaha.

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