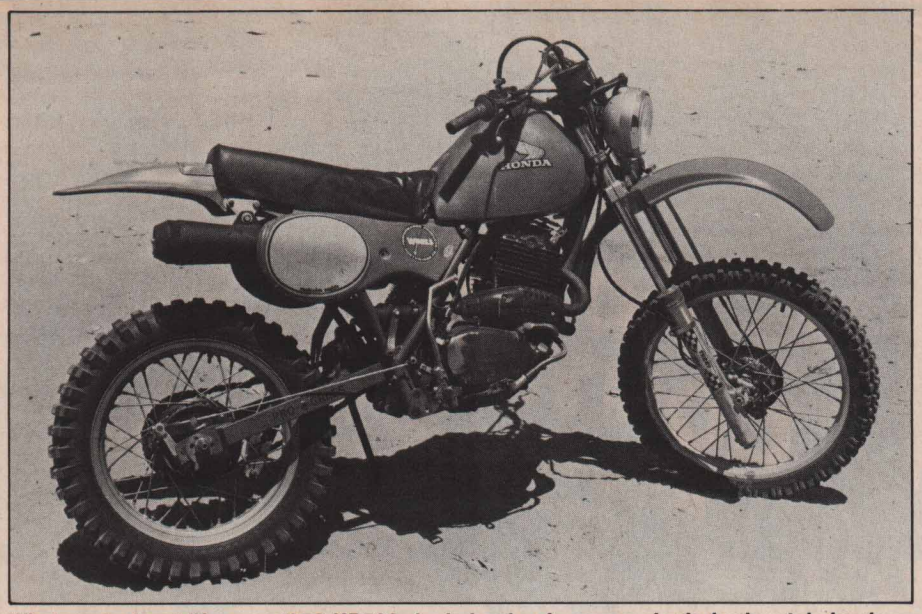
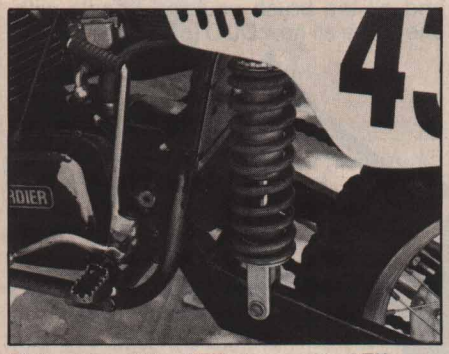
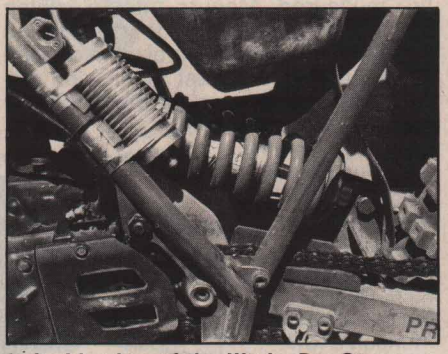


What started out life as a 1979 XR500 dual-shocker is now a single horizontal-shock Works Performance experimental machine.



Ride side of the ATK shows the ATK torque-eliminator, which is claimed to be essential for the side-shock approach to work properly. This is available right now for most bikes.



Left-side view of the Works Pro-Gress unit gives a better idea of the radical angle of the custom-made WP shock. Short and stout, the Works shock runs a spring with a rate over 800 pounds!

The ATK proto bike is based on a 560 Rotax engine in a special C&J frame. A version of this bike will likely be for sale in the near future. The price tag? Somewhere below the $4000 range.

If you feel that progress in rear suspension development has stagnated, then take a close look at the two bikes shown here. Both are experimental machines, not for sale to the general public, and are more or less rolling test beds for the theories of their designers.

While the two rear suspensions are worlds apart in appearance, they are both trying to do the same thing: simplify the rear suspension without giving up any of the obvious benefits of long travel. Both systems completely eliminate any links or rotating parts.

This offers several advantages that are unarguable: They're much simpler to build and maintain, and both complete systems are lighter than a comparable link/single-shock system.

They differ only in shock location/angle and one other area: The ATK system has a rather mild rising rate and the Pro-Gress setup has numbers that are more in line with conventional thinking. Both are startling to look at and draw crowds whenever the bikes are parked.

ATK SIDE SHOCK

At first glance, one is tempted to think that the ATK simply cannot work. After all, the single shock is mounted on one side of the swingarm. The other side is bare. And further inspection shows that the two arms are not even close to lining up. But, as Horst Leitner, designer of the ATK system, says, "It makes no difference what the angle is, just so it remains rigid and does not flex. I make the swingarm lower on the left side to allow the shock to be the proper length. On the right side, it's more conventional in shape, because it's easier to make it that way. There's a tremendous amount of bracing on the left side and it's actually much stronger than it needs to be."

We saw one very distinct advantage with the ATK side shock. Leitner removed and replaced the shock within a matter of minutes with no special tools. Try that sometime with your Uni-Trak.

The ATK side shock uses either a Honda/Ohlins, Showa or White Power shock. Horst has several working models and brought two of them with him for us to ride. One was Showa-equipped and the other had the Honda/Ohlins shock. Of the two, we much preferred the Ohlins-based unit.

Even though the ATK is not designed primarily to achieve a rising-rate suspension, there is some change as the shock goes through its stroke. The first inch of shaft travel offers 3.5 inches of axle movement, while the last inch yields 2.8 inches of rear wheel movement. Leitner estimates his complete system, even with the beefier swingarm, weighs about five pounds less than the standard single-shock approach.

He also noted that by having the shock off to one side, he was able to run a larger airbox and let the carb go straight into the barrel, rather than angle around like most

gassers. This one change alone accounted for a four-horsepower gain in the 560 Rotax engine. Of particular interest is the fact that the ATK Rotax engines are pre-production 1984 engines that will see their way into the Can-Am and KTM lineup, as well as a few other Continental efforts.

Specifics on the ATK system are as follows: The shock is 16¼ inches long and offers 4¼ inches of shaft travel, including collapsing the rubber bumper. This gives the ATK rear end a full 13 inches of travel. The spring varies a great deal with bike and rider weight differences, but is normally in the 400- to 500-pound range. Zero preload is normal, states Leitner, even though individual riders can add a bit to suit their riding preferences. Horst likes no preload, because he says that it makes the rear wheel more responsive to small bumps and the wheel will more faithfully stay in contact with the ground when braking over bumps.

While the machines we rode were not for sale to the public, Leitner plans to offer an entire bike for something in the $3900 price range. It will have a special C&J frame, the 560 Rotax engine (with performance goodies by Ron Woods) and, of course, will come with the single side shock and an ATK torque-elimination device. The rider will be able to specify his choice of forks, shocks, etc. We'll let you know more on this as it develops. By the way, the entire bike is claimed to weigh in at slightly over 250 pounds, dry. We did not have a chance to slip it on the *DB* scales.

WORKS PERFORMANCE PRO-GRESS

It's obvious that the ATK bike is a pure racer, while the machine Gil uses for development is more of a Baja cruiser/high-speed trail bike. Based on an XR500 engine, the frame is your basic C&J with a specially modified C&J swingarm. There are also considerable frame mods done to fit in the near-horizontal shock.

Quite naturally, the designer, Gil Vaillancourt, owner of Works Performance shocks, uses a Works shock to get the job done on his machine. The shock is made from scratch and is all fabricated out of high-quality aluminum and chromoly.

Specifics on the shock are: length, 12-1/2 inches with a mere 2-3/4 inches of shaft travel. A mighty 825-pound spring is used and Gil uses anywhere from 5/8-inch to 3/4-inch preload to get the rear end setting right. Actual travel with the Pro-Gress is 11.83 inches. As with the ATK, the Pro-Gress leaves a great deal of room for a sensible airbox and pipe routing.

The numbers on the rising rate are different from the ATK. The first inch of shock travel gives up 5.2 inches at the rear wheel and the last inch measures out at a 3.87-inch rate. Gil also claims a five-pound weight savings with his approach.

The Pro-Gress can be applied much easier to four-strokes than two-strokes. XL500/600s and XR250/500s are likely candidates, but as this is strictly a developmental test suspension, the cost is fairly high should the rider desire to have one. Right now, Gil is much more interested in selling the concept to a major manufacturer than trying to build individual bikes for people.

As with the ATK bike, the Pro-Gress bike has massive gussets where needed. According to Gil, there are forces that exceed 6000 pounds at either end of the shock that must be dealt with.

DUELING DESIGNERS

Having both of the bikes and their builders at the track at the same time was fascinating. Both agreed that they were trying to reach the same goals, but mutual agreement ended at that point. Leitner feels that a rising-rate suspension is not needed, while Vaillancourt insists that it's the only way to fly. Both men are good riders and set up their own bikes to suit their riding styles. When we asked the designers to ride each other's bikes, it was the source of much high-level discussion, each trying to persuade the other of his approach. Frankly, each hated the other's rear suspension. Being much more tolerant, the *DB* folks slung an editorial leg over both mounts and put some time in on the bikes.

RIDING THE FUTURE WAVE?

We can't say *that* for sure, but we can say that while both rear suspensions feel much different, they both work. The ATK unit felt much better when the bike was ridden hard and fast...it seemed to respond to heavy throttle. The Pro-Gress was more comfortable at trailriding or cruising speeds, which is what the bike was set up for. It would be unfair to compare a fire-breathing 560 racer to a mellow Baja cruiser. Suffice it to say that both suspensions worked considerably better than, say, a stock TT600...by the proverbial long shot.

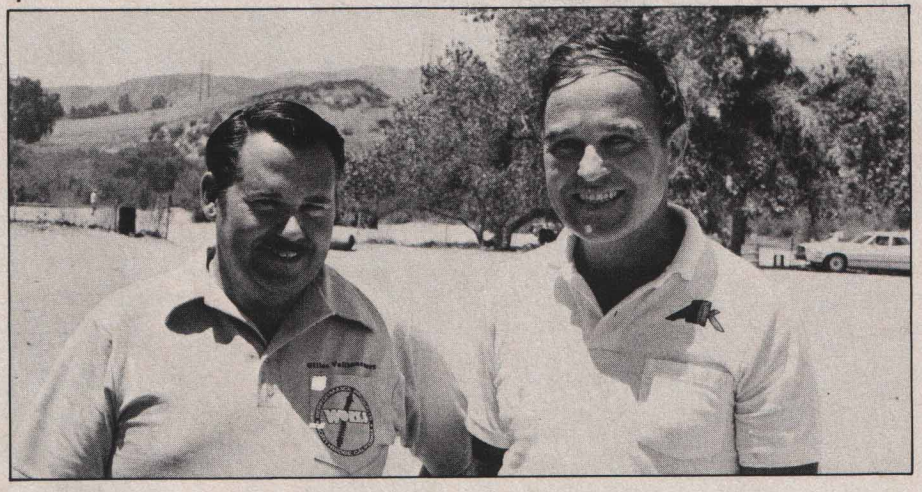
We can say that riding the ATK was a strange experience, as the bike was equipped with an ATK torque-elimination sprocket setup. This meant that when we backed off the throttle while going into a corner, the front end did not settle. Also, heavy application of throttle does not make the rear end squat or the front end wheelie. Our short riding session did not allow us to get used to this; more time will be required to evaluate this system.

CURIOUS? INFORMATION FOR THE ASKING

ATK LEITNER CORP.—Attn: Horst Leitner, 2650-C Walnut Ave., Tustin, CA 92680; (714)731-5114.

WORKS PERFORMANCE PRODUCTS—Attn: Gil Vaillancourt, 8730 Shirley Ave., Northridge, CA 91324; (213)701-1010. □

On the left, Gil, of Works Performance fame. Next to him, Horst Leitner, the multi-sprocket man of ATK.



ATK SIDE SHOCK & WORKS PERFORMANCE PRO-GRESS

Getting rid of all the extra pieces

By the Staff of Dirt Bike

TWO NEW EXPERIMENTAL REAR SUSPENSIONS