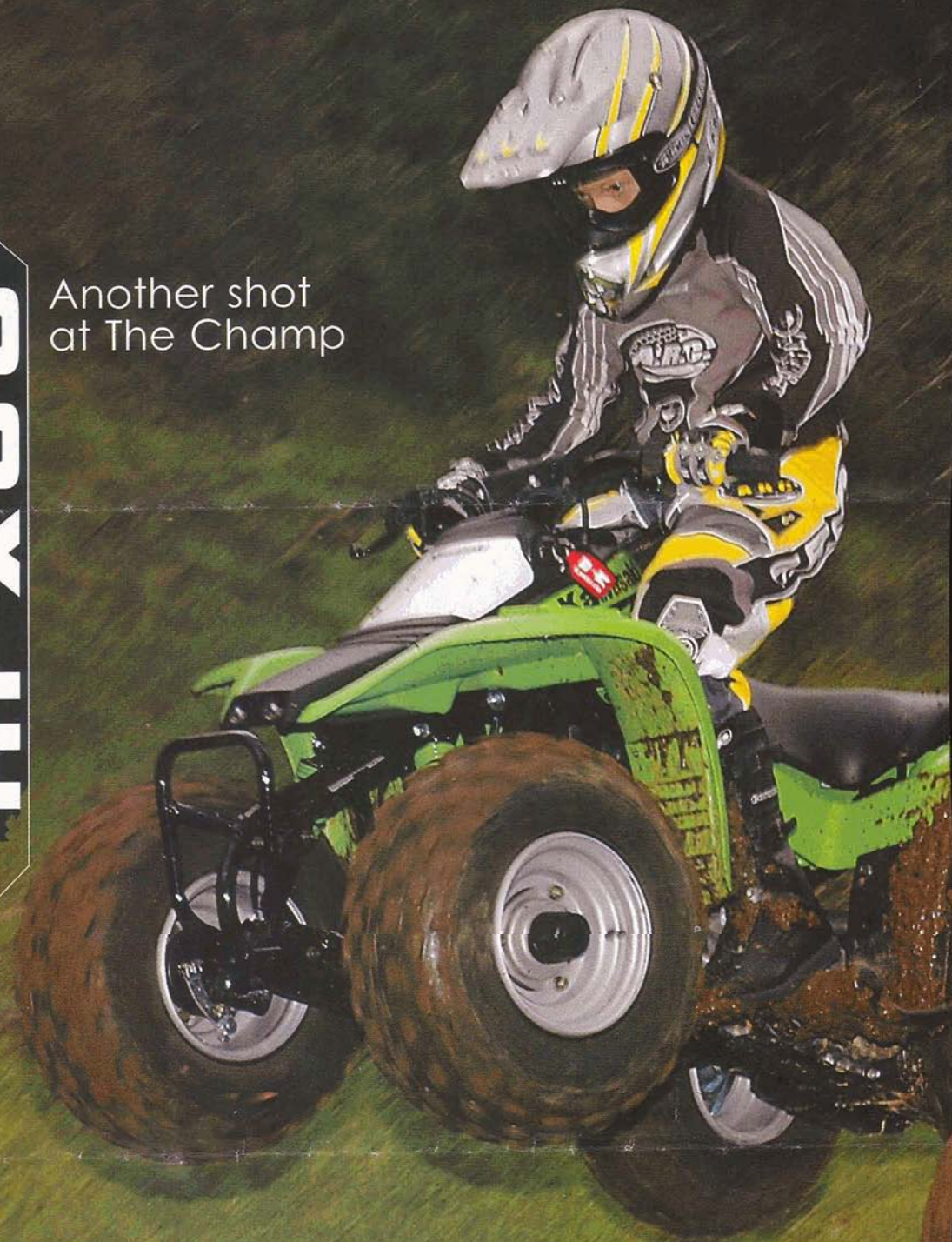


SHOOTOUT

E-TON VIPER 90 **vs.** KAWASAKI KFX80

Another shot
at The Champ



Since its debut in 1987 the Suzuki QuadSport LT80 has ruled the two-stroke youth quad roost. We've thrown all sorts of machines up against it and it refuses to back down. Polaris has taken the last two shots at the LT80, first with the Scrambler 90 and then with the Predator 90. The Predator came close, but the LT80 was still the reigning champ coming into 2005.

E-Ton changed the mini world with its Viper 90R early in the 2005 model year (see test in June 2004 issue). Not only did the Viper 90R have reverse, it also had the best reverse system in ATVing! Just let the motor settle

down to idle and flick an electric switch on the handlebar next to the right handgrip. If reverse is a must-have feature, the E-Ton Viper 90R is the top machine.

With that settled, we wanted to see if the non-reverse Viper 90 could top the Suzuki LT80 in a head-to-head battle. We didn't have a fresh LT80 handy, **so** we grabbed a new Kawasaki KFX80 as a stand in. Not only is the KFX80 identical to the LT80—it's even built by Suzuki! It might also surprise you to know that the LT80/KFX80 is built in Taiwan, just like the E-Tons. Every time we write KFX80, we're also writing LT80.



For the shootout, we rounded up a group of test riders ranging from novice 12-year-old girls to experienced 13-year-old boys. Wait a second, you might be thinking. Why didn't we get anyone older than 13? Clearly, just about any 14-year-old will be too big for the tight ergonomics of the KFX80, despite the fact that the Federal government's unrealistic Consumer Product Safety Council (CPSC) expects riders up to 15 years old to ride it. We only tested with riders who were both CPSC-legal (12-plus) and hadn't yet outgrown both machines.

HOW DO THE MOTORS COMPARE?

They're pretty much the same concept. Both are scooter-based two-strokes with electric starting and lubrication by automatic oil injection. Although the Viper is called a 90 and the KFX an 80, they both displace 82.5cc. Both have a fully automatic, single-range, belt/pulley CVT with no neutral position.

In a drag race, they're extremely close at the finish, but they get there in different ways. The KFX is stronger off idle, but revs slower. The Viper picks up the revs quickly, but the clutch doesn't engage instantly. Once the tranny is fully engaged, it accelerates with authority. After 50 yards, they're within a half a quad length of each other, with the Viper a consistent winner. As they both top out at 30mph as per CPSC regulations, a longer race would have identical results.

HOW WERE THEY ON THE CROSS-COUNTRY COURSE?

Different. It was a technical course, so we made it short to avoid wearing out the riders during the time trials. As with the drag race, the results were very consistent. The faster, expert rider's best time on the KFX was slower than his worst time on the Viper. In contrast, the novice rider never went faster on the KFX than on the Viper.

Clearly, the KFX is designed for the less-experience

rider. It's smaller and has a more linear powerband. While it doesn't rev

quickly, the KFX pulls from one rpm over idle right up to its redline. When the Viper's throttle is stabbed, at a standstill, it gathers up engine speed before it transmits it to the wheels. However, when it does put the power to the wheels, it does it with authority, and the Viper zips away smartly.

The expert rider was able to keep up good momentum so the Viper never fell off the powerband. Even on one particular tight section that required threading the needle through two trees and a tricky off-camber turn through the mud, the revs were kept up and the Viper never needed to climb back on the transmission.

For the novice, the Viper came to a standstill through that same section and judicious use of the throttle was required to get things underway again while at the same time dealing with the awkward turn. What was a piece of cake for the more experienced rider was a challenge for the newer rider.

DID THE HANDLING MAKE A DIFFERENCE?

Yes. The low-slung KFX whipped through the turns like a shifter cart, even with the higher profile Dunlop tires. Nothing disrupts the flow of the KFX, and it inspires confidence. Larger riders can manhandle it, while smaller riders don't feel overwhelmed. Keep in mind that the Viper is nearly 30 pounds heavier than the KFX.

The Viper isn't quick to two-wheel in turns partially thanks to the excellent low-profile Maxxis tires, though it's too tall to have quite the seriously planted feel of the KFX. Also, much more steering effort is required on the Viper. This isn't as big a deal for a muscular 13-year-old boy as it is for a slender 12-year-old girl with considerably less upper body strength. Also, the KFX will turn inside the Viper every time with its tighter turning radius.

On the fast straightaways, both machines were rock solid steady at full speed. Neither are natural born sliders, so most turns were tracked through rather than backed into. Higher speed sweepers favor the Viper, while the KFX is great for donuts in the parking lots, something kids really enjoy doing!



Experienced and aggressive test rider Josh Nielsen, 13, swings the KFX80's back end - in the moist terrain while lifting the inside tires. In most cases, the KFX stays nicely planted on all four wheels around turns.



Hanna Washlake, 12, confidently guides the Viper 90 between the trees on our cross-country course at high speed.

HOW IS THE SUSPENSION?

On paper, it favors the Viper. In the dirt, it's more of a toss-up.

Up front, both quads have single A-arms with a couple of inches of travel. Been there, done that. It doesn't work well. The KFX has more sophisticated spring and damping settings, so its front end action is superior to the Viper. It's not a huge difference, but it's there.

E-Ton squanders its 6-to-2 advantage in rear wheel travel inches. Not only that, but the KFX uses the motor as a swingarm, greatly adding to unsprung weight. When it comes to suspension, unsprung weight is the enemy of good action, but the KFX overcomes that problem with spot on suspension calibration. The rear end on the Viper is so oversprung that riders don't actually use anywhere near all six inches of travel. Even on jumps, the Viper doesn't enjoy the huge lead it should have. For more aggressive riders the Viper gets the nod on rear suspension, though not by nearly as much as it should.

ARE THESE CAMPGROUND OR TRAIL QUADS?

Both machines are more than capable out on the trail. The more technical the trail, the better the KFX will do. If the trail is smooth and open, the Viper can keep the transmission engaged and go about its business more quickly.

Hills with a run can be conquered by both machines. Unexpected hillclimbs are easier to tackle on the torquey KFX. On the way down a hill, the Viper's front drums are weaker than the KFX's mediocre drums. There's a hydraulic rear disc brake on the Viper that's superior to the KFX's anemic mechanical drum, but that's not the best source of braking on a challenging downhill.

If the machines are ridden around the campground, the KFX will be favored by nearby adults for its quieter, serpentine muffler, but they won't like the smoke that pours out of the KFX's tailpipe compared to the cleaner running Viper. The KFX really is a "two-smoke."

WHAT ABOUT SAFETY?

This is an important category and the Viper is a big winner. The Viper has floorboards that keep the rider's feet away from the wheels. Suzuki designed the KFX to take on the off-road world with rubber-covered footpegs. That's just wrong! It's especially wrong if you live in a wet environment, as the KFX's rubber has nowhere near the grip of proper serrated footpegs.

Additionally, the Viper has dual bright tail/brake lights as well as a pulsating front red running light; a *la KITT* from the old "Knight Rider" TV show. This gives the Viper visibility on the trail that the lighting-free KFX lacks. The CPSC inexplicably bans headlights on youth quads, a safety feature we feel should be mandatory! It's much easier to hook up lights on the Viper than on the KFX. We'd like to see every parent outfit their kids' quads with visibility-enhancing headlights.

Neither machine has neutral, a feature we also think should be mandatory on youth quads. To start the KFX, you have to engage the parking brake, which is a lever that locks down the foot brake--somewhat of an awkward system. Just pull in the left hand rear disc brake and the Viper is ready to fire right up.

WHICH HAS THE BEST ERGONOMICS?

For most 12-to-15-year-olds, the roomier Viper is a superior choice. If the rider actually fits the machine, the ergonomics are good on both quads. Even though they're CVT-equipped machines, the tranny bulge isn't a problem.

There's no doubt that when Suzuki was designing the LT80 in the mid-1980s, they didn't intend it to be ridden by youngsters in this age range. But when the CPSC stuck its unwanted nose into ATVing, the LT80 (and, later, the KFX) was forced into an age range where it did not belong.

While many 15-year-olds may feel a bit cramped on a Viper 90, there's still enough room to actually ride it. The low bars on the KFX80 will be a problem for anyone over five feet tall.



Like the KFX, the Viper 90's motor is a laid-down, oil injected two-stroke. That round knob toward the left end of the side cover is the shaft for the kickstarter (the lever is stored with the toolkit). The Viper's motor needs to be wound up a bit before the transmission kicks in and things start moving.



There's a motor in there, somewhere, we promise! Those rubber footpegs have no business being on an ATV. Kawasaki calls the KFX an 84 but it has the same 82.5cc displacement as the Viper 90. The powerplant has great low rpm power and an enviable record of reliability.



Thanks to longer A-arms on a common pivot point, the Kawasaki KFX80 (right) has superior front suspension. Note the dated boxy styling of the KFX compared to the swoopy Viper. The Viper's accessory lights can be plugged in and working in minute we support lights on youth ATVs.*



The of these machines are quite different. The Viper 90 (left) has dual brake/taillight, a disc brake and flat, low-profile tires. The Suzuki-built and designed KFX80 has no lighting, a drum brake and old school balloonish tires. The higher seat height and ban on the Viper indicate its roomier ergonomics.



Safety-oriented floorboards and a highly protective front bumper set the Viper 90 (left) apart from the KFX80.



Both machines have decent swingarm-brake/chain/sprocket protection, but not much under the engine.

The bottom line remains—the CPSC's age recommendations are a farce and we call on the manufacturers to do something about it! The KFX80 is too small for most kids in the manufacturer-enforced age range, while the Viper 90 is on the large size for some 12-year-olds.

Let's be clear. Age range does not determine size. Age range does not determine judgment. Age range does not determine ability. The CPSC and manufacturers are ignoring these realities and the results are harmful. A dealer can't give realistic recommendations to a buyer. A dealer can't sell the right size quad to a dad for his child. A dad who puts his 15-year-old on a Blaster 200 will find out that many ATV safety organizations will not let him take a safety class because he's not the "right" age for the quad. Something must be done about this!

WHICH IS EASIER TO MAINTAIN?

Neither are as simple to maintain as they should be, though they don't require a lot of maintenance. You need to work around the front left tire and remove seven fasteners to get to the Viper's air filter holder (there is no airbox). Even worse on the KFX, the entire air box must be removed, and it's a hassle to do that. Air filter maintenance is the most basic job on a quad and it should not be difficult to do.

Four bolts have to be loosened on the swingarm so you can start adjusting the chain on the Viper. That job requires a different wrench and the manipulation of another four pieces of hardware. It's tricky to adjust the chain so it's taut enough so that it doesn't rattle against the steel chain guard, yet not too tight given the potentially long travel suspension.

There is no chain adjustment on the KFX, as the two sprockets move in unison when the rear shock

moves. On the downside, when the beefy chain does eventually stretch, it must be replaced.

Oil-related maintenance is easy. You can change the transmission oil and refill the automatic oil injector tanks without too much effort.

IS ONE MACHINE MORE RELIABLE?

Probably the KFX. With almost 20 years of experience with the LT80 and KFX80, we know that it's a near-bulletproof machine that will last through the childhoods of a number of riders. E-Ton keeps improving the build of their machines. Older E-Tons were not as reliable as we expect newer editions to be. We're impressed with the manufacturing quality of the Viper 90 and would not be surprised to see it last for a good number of years.

WHAT IS OUR FINAL ANSWER?

After a reign that spread over three decades, the Suzuki QuadSport LT80 and Kawasaki KFX80 have been knocked from the top position among two-stroke youth quads.

That doesn't mean the E-Ton Viper 90 is for everyone. If your 12-to-15-year old is too small for the Viper 90, buy the KFX80. Do not buy a quad with the expectation that your child will "grow into it." That is a dangerous idea, even though it is inadvertently promoted by age limits promoted by the CPSC and the manufacturers.

Our test riders, especially the smaller kids, liked the KFX80 quite a bit. Even the larger riders enjoyed manhandling the little KFX. Regardless, most youngsters 12-to-15 will be better served by the Viper 90's size and performance.

In youth quad shootouts, the opinions of the adults matter as much as our young test riders. We put a premium on safety, so the lights and

floorboards on the Viper weighed heavily in our final determination.

Finally, the E-Ton Viper 90 is \$450



SPECS

2005 E-TON VIPER RLX-90

2005 KAWASAKI KFX80

ENGINE/TRANSMISSION

Engine type	Air-cooled, 2-stroke	Air-cooled, 2-stroke
Displacement	82.5cc	82.5cc
Bore & stroke	50mm x 42mm	50mm x 40mm
Compression ratio	7.9:1	7.4:1
Lubrication system	Oil injection	Oil injection
Carburetion	18mm SW	16mm Mikuni VM5H
Spark plug	NGK BPR7HS	NGK BP7HS
Starting procedure	Electric/kick	Electric/recoil [optional]
Choke location	In neutral with left hand brake engaged, pull left index finger switch	Lock foot brake, push button
Idle adjustment	Left handlebar	Knob on left side of carb
Air filter	Screw on left side of carb	Screw on left side of carb

Type	Oiled flat foam	Oiled foam cylinder
Access	Remove filter holder cover (7 fasteners)	Remove airbox

TRANSMISSION/DRIVE SYSTEM

Transmission	Fully automatic belt/pulley CVT	Fully automatic belt/pulley CVT
Final drive	520 Chain	Eon-adjustable 520 O-ring chain

DIMENSIONS/CAPACITIES

Fuel capacity	1.2 gal.	1.6 gal.
Recommended octane	92	87
Two-stroke oil tank capacity	1.1 qt.	1.3 qt.
Transmission oil capacity	3.4 oz.	2.7 oz.
Wheelbase	36.1"	37.0"
Overall		
Length/width/height	59.0"/33.5"/35.4"	55.9"/31.7"/34.3"
Seat height	26.1"	25.4"
Claimed dry weight	249 lb.	220 lb.

Manum on board rider, cargo, accessory limit	190 lb.	1 3 2 lb.
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ROLLING CHASSIS

Frame	Round steel tube	Round steel tube
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Suspension/wheel travel:

Front	Single A-arms with preload-adjustable shocks/2"	Single A-arms with non-adjustable shocks/1.9"
Rear	Swingarm and solid axle with preload-adjustable shock/6"	Pivoting motor and swingarm with non-adjustable shock/2.2"

Brakes/actuation:

Front	Mechanical drums/right hand lever	Mechanical drums/right hand lever
Rear	Hydraulic disc/left hand lever	Mechanical drum/right foot pedal
Parking	Rear drum/pull in left hand lever, press locking button	Rear brake/push down foot pedal and move locking lever into place

Tires:

Front	Maxxis 18x7-8	Dunlop KT941 19x7-8
Rear	Maxxis 18x7-8	Dunlop KT945 19x7-8

DETAILS:

Battery capacity	4 amp/hr.	4 amp/hr.
Lighting		
Front	Linking red LED	None
Rear	Brake light	None
Instruments	Low oil light, range position	None
Colors	Red, blue, yellow	Kawasaki Lime Green
Minimum recommended operator age	12	12
Manufactured in	Taiwan	Taiwan by Suzuki
Suggested retail price	\$1899	\$2349
Contact	E-Ton, (877) USA-ETON	Kawasaki, (800) 661-RIDE

RATINGS

VIPER 90

KFX80

MOTOR/TRANNY

Overall power	★★★★★	★★★★★
Low speed	★★★★★	★★★★★
Mid speed	★★★★★	★★★★★
Top speed	★★★★★	★★★★★
Throttle response	★★★★★	★★★★★
Idling smoothness	★★★★★	★★★★★
Transmission	★★★★★	★★★★★

HANDLING AND CHASSIS

Overall handling	★★★★★	★★★★★
Turning precision	★★★★★	★★★★★
Turning stability	★★★★★	★★★★★
Turning diameter	★★★★★	★★★★★
Powersteering	★★★★★	★★★★★
Steering ease	★★★★★	★★★★★
Off-cambers	★★★★★	★★★★★
High-speed stability	★★★★★	★★★★★
Jumping	★★★★★	★★★★★
Brakes: f	★★★★★	★★★★★
Brakes: r	★★★★★	★★★★★
Suspension: f	★★★★★	★★★★★
Suspension: r	★★★★★	★★★★★
Low-speed ride plushness	★★★★★	★★★★★
Traction	★★★★★	★★★★★
Hillclimbing	★★★★★	★★★★★
Downhill	★★★★★	★★★★★
Undercarriage protection	★★★★★	★★★★★

RIDER COMFORT AND CONVENIENCE

Overall ease of use	★★★★★	★★★★★
Startup ease	★★★★★	★★★★★
Back-up startup ease	★★★★★	NA
Seat comfort	★★★★★	★★★★★
Vibration	★★★★★	★★★★★
Bars/seat/footrest	★★★★★	★★★★★
Air filter access	★★★★★	★★★★★
Choke access	★★★★★	★★★★★
Idle adjustment access	★★★★★	★★★★★
Hand control ease	★★★★★	★★★★★

OVERALL

Overall design	★★★★★	★★★★★
Fit and finish	★★★★★	★★★★★
OVERALL RATING	★★★★★	★★★★★
★★★★★=EXCELLENT, ★★★★★=ABOVE AVERAGE, ★★★★★=AVERAGE, ★★★★★=BELOW AVERAGE, ★★★★★=POOR		

STOP WATCHING DRAG RACE

Viper 90	6.51 sec.
KFX 80	6.55 sec.
50-yards, slightly downhill on pavement	

CROSS-COUNTRY COURSE

Quad/Rider	Expert	Novice
Viper 90	27.2 sec.	37.1 sec.
KFX80	28.6 sec.	35.1 sec.
Course:	Tight trail through trees and mud with one long straight	

less expensive than the Kawasaki KFX80—a huge amount for machines that are around \$2000. At that price, picking a winner is easy—the E-Ton Viper 90. □