REALITY CHECK

Comparing the cost of two-strokes and four-strokes

We love the four-stroke revolution. We love the sound of a big thumper. We love the feel, the traction and the technology. Judging by the sales numbers, so does the rest of the country. But like all affairs, it's best to take a deep breath and look at the big picture. Four-strokes cost more. They have higher initial price, they require more maintenance, and oh, man, do they cost more when they blow.

To give you an idea of what the four-stroke revolution brings with it, we put together a cost comparison for motor maintenance for a year between a Honda CR125R and a Honda CRF250R, with the help of Santa Barbara Motorsports. We're not trying to scare anyone. This is just a reality check.

TIME IS ON YOUR SIDE, NOT REVS

Hours aren't the real enemy of four-strokes, revs are. The abuse the valve train takes at 13,000 rpm is staggering. The higher you rev a motor, the more you tax the oil, the more heat it generates, and the more it wears. Still, we don't really have a way of counting how many times the valves open and shut. We use hours to schedule maintenance because that's all we have. But you have to know that the figures are based on the average rider. A low-revving 35-year-old will probably get three or four times as much use out of his bike as a screaming 20-year-old pro.

An avid motocrosser rides maybe two times per week, 50 weeks a year. Now a lot of people think they ride for hours every time they swing a leg over the bike, but the reality is that most people put about an hour of actual riding on their bike. So it's safe to say the avid motocrosser rides 100 hours per year, which really starts to sound like a lot when you read the recommendations from the manufacturer for maintenance.

THE BOOK VS. THE REAL WORLD

For a Honda CR125, Honda recommends piston/rings every 7.5 hours (or every month if you go by our avid motocross schedule). Honda recommends spark plug replacement every 7.5 hours, $6 every month, reeds every 7.5 hours ($45 aftermarket part) and cleaning of the power valve every 2.5 hours. Our real-world mechanic recommends piston/rings four times a year, cleaning of power valve four times per year, and inspect/replace the reeds four times a year.

For the CRF250R, Honda recommends piston/rings every 15 hours (every two months) and inspect/adjust the valves every 15 hours. Our real-world mechanic recommends inspecting/adjusting the valves after six hours of riding and four times per year (every three months after). The real-world mechanic also recommends replacing the piston/rings three times per year (every four months or 30-35 hours of use) and replacing the valve springs, valve seals and cam chain three times per year (every four months).

The cost of good quality four-stroke engine oil vs. two-stroke oil is about equal if you are changing the four-stroke engine oil every three rides. Remember, two-stroke engine oil is mixed in the fuel and tranny oil is equal in cost for the amount used. The four-stroke uses an oil filter that costs about $12. It can cost nearly $360 a year if you change the oil filter every oil change or $120 if you change them every third oil change. Scott's make a metal mesh oil filter that is reusable and worth the money.

CASH MONEY

The cost to install a new piston and rings and clean the power valve on the Honda CR125R at a shop with all gaskets, seals, and labor comes to $418.87. Parts are $156.37, while labor is $262.50, so if you're handy, you can save a grip of cash. Replacing a two stroke top end isn't very hard, so saving money on labor is easy. Now, doing a piston on a four-stroke is a much more involved process because there are a lot more

This is a pricey chunk of broken metal. Intake valves $80 each, exhaust valves $100 each, piston $84 and rings are $25. There are a lot more broken parts where this came from.

According to the shop mechanic, this was the result of a 250F motor which the customer never maintained, leading to catastrophic failure. The piston looks horrible but the bill for a new piston, crank, cylinder, head, valves, and miscellaneous parts is much more horrible.

REALITY CHECK

moving parts to deal with. Hopefully along the way the valves have been adjusted at the recommended three-month intervals so the cost of new valves won't come into play until the end of the year. When you change a piston and rings on a four stroke, it's important to replace the valve stem seals, the valve springs, cam chain and gaskets. The cost for the parts is $279.38 and labor for the job is $420, totaling $699.38 for a top end.

The CR125R, with the cost of replacing four top ends ($1672) and two reeds ($90) totals $1852 for a year of motor maintenance.

The CRF250R, with the cost of three pistons and five valve adjustments ($3100) and oil filters every three oil changes ($120) totals $3460 for a year of motor maintenance. So far.

BUT WAIT…

Maintenance on the four-stroke doesn't stop at the top end. The valve train on a four stroke is the highest wear area and requires constant attention. We can't stress enough that the oil be kept fresh and the valves should be kept within tolerances so the valves don't get toasted as fast and the valve seats don't get wrecked beyond the point of no return. Regardless, after 100 hours of riding the valve will probably have to be replaced. This is the biggest variable from one rider to another. If the bike gets revved, the valve will probably be cupped and require replacement. The same goes for the seat. Honda valves are $50 each (Yamahas are around $100). Your dealer might be able to recut the seat for a reasonable price, between $50-$150 if there isn't too much damage. But if it's bad, the head will have to be sent out for new seats. Often it's easier to buy a new head at the end of the year—that's about $350 for a Honda and $500 for a Yamaha. You can try to shave cost with stainless steel valves, but they are heavier and will pound the head harder. That will shorten the life of the seats.

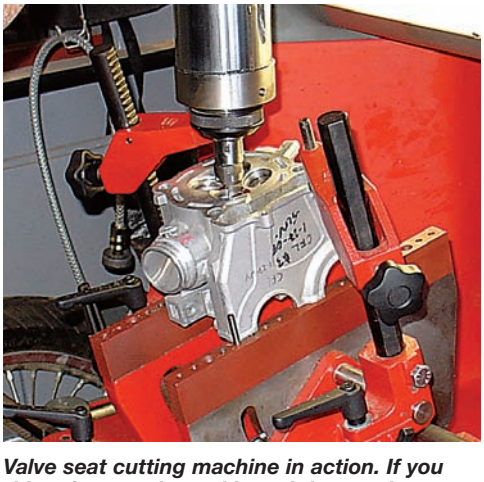
The suggested retail of a CR125 is $5449 while the retail on a CRF250R is $6299. The difference on retail is $850 and the difference of maintenance is between $1608 and $2600, depending on how hard you ride. These are the costs of motor maintenance if nothing catastrophic happens to either machine.

Now let's talk Big Bang. The two-stroke top end is separated from the gearbox, so if a ring breaks, the bottom end is safe from debris The worst case will require a new crank, cylinder, head and piston. Not so with a Yamaha, Kawasaki or Suzuki four-strokes. Broken metal parts can be carried through the motor and destroy every bearing and even the cases. Honda CRFs keep the two compartments separate, which is a significant advantage. Regardless, the cost of a CRF head, with a cam and all its valves, is around $1000. If you need cases, add $500.

So what's the bottom line? There are so many possible scenarios, that it's almost impossible to put a cost on racing a four-stroke for a season. Four-strokes cost more. Period. But no one ever said racing was cheap, and as technology marches forward, so does expense. In the big picture, racing dirt bikes is still a bargain; just ask anyone who ever tried racing Trophy Trucks or stock cars. ❑

125s and 250 two strokes are a blast to ride when the conditions are good. When it's dry and slippery, we want a four-stroke more than ever. For the amount of riding time compared to cost to maintain, a 250 two-stroke is hard to beat, especially for the riders out there who are scared of tools and maintenance.

Where used valves go to die.



Valve seat cutting machine in action. If you ride a four-stroke and keep it longer than a year, your head will end up in one of these.

A four stroke can seize just as easy as a two-stroke and it comes from massive heat. A lack of oil or coolant was the culprit for this job.

Two strokes aren't invincible. A classic two-stroke seizer.