



CYCLE WORLD TEST

1987 HUSQVARNA 510 CROSS COUNTRY



ABSOLUTELY THE LIGHTEST AND BEST DIRT THUMPER EVER

IF YOU'RE THINKING ABOUT TRYING to custom-build a super-powerful, ultra-lightweight four-stroke dirt Single, forget it. Husqvarna has just built one for you: the 1987 510. And in the process, Husky has done a much better job than just about any do-it-yourselfer could manage in his garage, regardless of how much time and money he might be willing to spend.

This new 510 is available in three versions: an enduro, a motocrosser and the cross-country model tested here. And despite the fact that these Husky thumpers make quite a bit more power than their predecessors, and have acquired liquid-cooling this year, too, they are considerably lighter. In particular, the Cross Country weighed in at 248 pounds (without gasoline) on our certified scales; that's 9 pounds lighter than the '86 air-cooled 510XC cross-country model. A comparison of the '87 Cross Country's weight to that of most other current four-stroke Singles, and even to that of many two-stroke off-road bikes (see chart, pg. 55), proves the point: This is one incredibly light thumper.

Husqvarna's approach to building a lightweight four-stroke Single is fairly simple: Make the engine as light as possible by designing a four-valve, overhead-cam, four-stroke top end, mating it to a modified two-

stroke bottom end, then bolting the resulting powerplant into an existing two-stroke chassis. Engineering and development costs are minimized, and the end result is an unusually light four-stroke dirt bike.

This simplistic approach is what brought us the original Husky four-stroke Singles back in 1984—although those first thumpers had some problems that resulted in a recall. The bikes have been constantly improved since then, however; and for '87, that continual development has resulted in an engine that, despite the addition of liquid-cooling, weighs just 69 pounds. That's almost 30 pounds less than the air-cooled engines in Honda's XR600R and Yamaha's TT600.

One reason for this exceptionally low engine weight is that all the cooling-system hardware (radiators, hoses, clamps and fittings) only adds up to 3 pounds. Another is that the liquid-cooled cylinder weighs considerably less than a comparable air-cooled cylinder, for it is a magnesium casting fitted with an aluminum liner that has been Nikasil-coated.

But not all of the 510's engine improvements are weight-related. A graphite-coated, two-ring piston reduces friction, and the valves have hard-chromed stems moving in bronze valve guides to increase durability. To further help extend engine

life, the connecting rod uses silver-plated bearing cages, and the main bearings are of higher quality. Thanks to a different balance factor, the new 510 engine gives off little vibration, despite its lack of rubber mounts or any sort of counterbalancing device. And new cam timing, with the assist of a reflowed head, boosts the 510's power output.

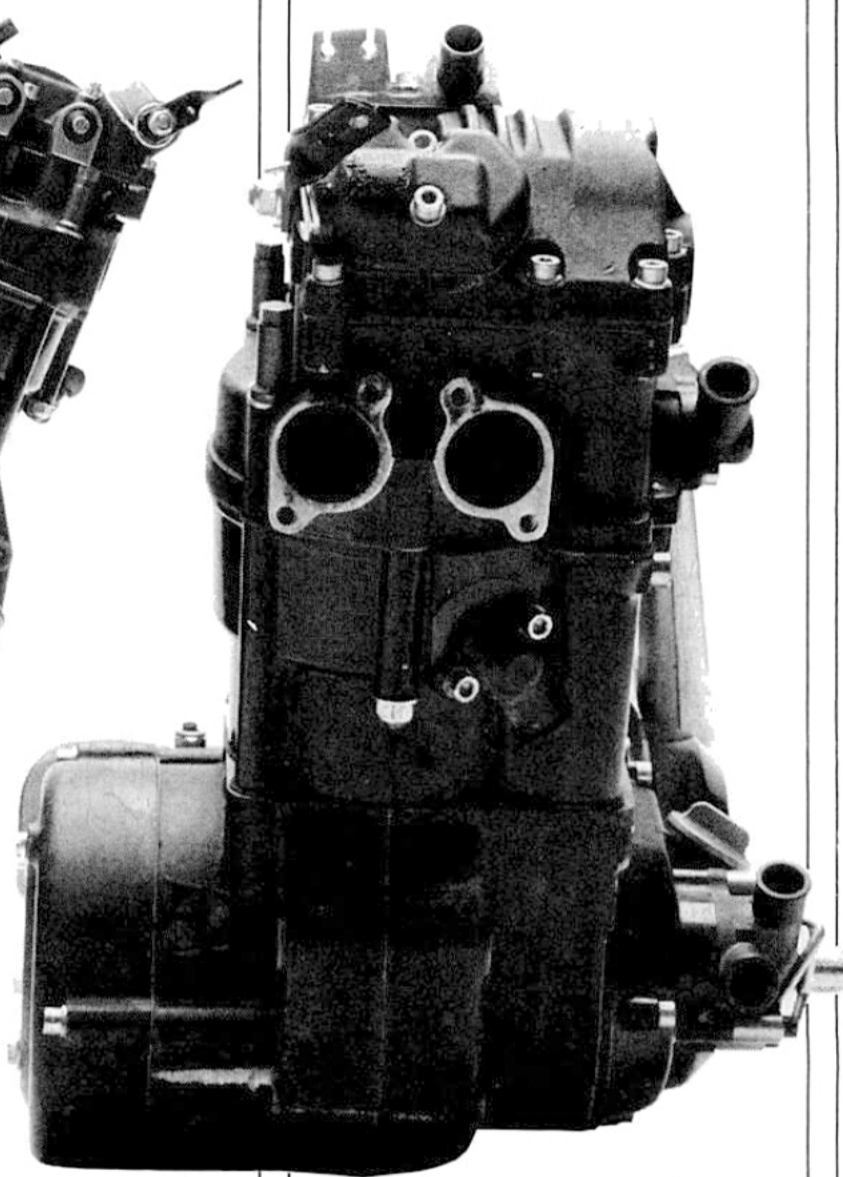
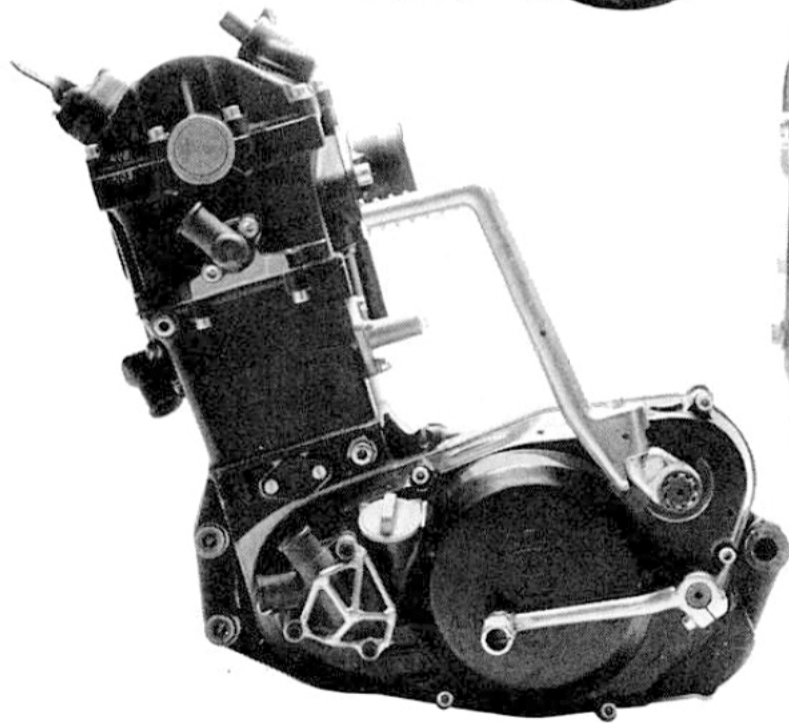
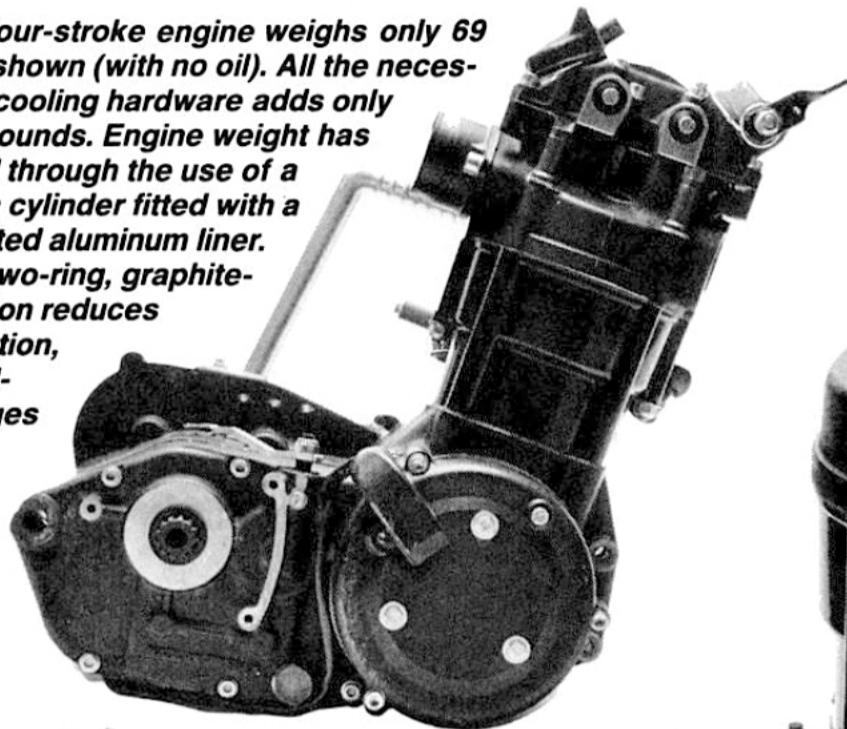
That power starts building smoothly right from idle; then, in about the middle of the rpm range, there is a tremendous burst of power that continues all the way up to maximum revs without flattening out much at all. While the engine is running in its potent mid-range, a mere blip of the throttle will instantly loft the front wheel, even at higher speeds. Long, sandy or muddy grades have little effect on the engine's power output; the bike just keeps pulling *hard*. And we aren't talking about the 510 being powerful for a four-stroke Single; it is a potent motorcycle by *any* standards, even in comparison to 500cc two-strokes.

This fabulous engine that produces power at all rpm allows the 510 to be an incredibly versatile motorcycle, especially since it is mated to a six-speed transmission. The bike will chug along willingly at a walking pace in low gear, yet 100 mph in 6th is no problem—all without any need to change the final gearing. The

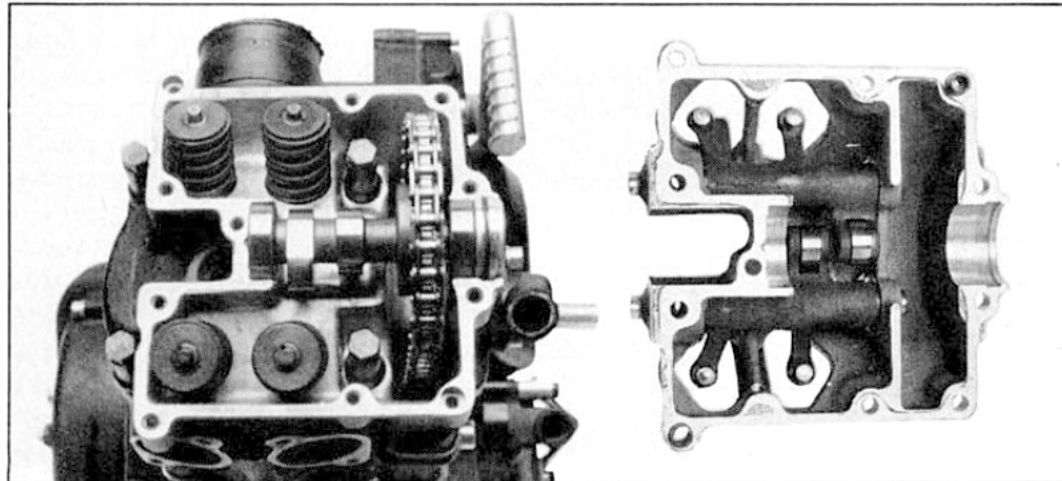
FORMULA FOR A FEATHERWEIGHT FOUR-STROKE ENGINE:

KEEP IT SIMPLE

The 510's four-stroke engine weighs only 69 pounds as shown (with no oil). All the necessary liquid-cooling hardware adds only another 3 pounds. Engine weight has been pared through the use of a magnesium cylinder fitted with a Nikasil-coated aluminum liner. The short, two-ring, graphite-coated piston reduces internal friction, and the rod-bearing cages are silver-plated for long life. The steel guard over the water pump is not stock.



The 510 four-stroke Single is only slightly wider than a Husky two-stroke engine. The compact design allows top-end repair with the engine still in the frame. Smaller dual exhaust ports and a reflowed head increase engine performance throughout the rpm range.



An exceptionally short cam rides in ball bearings and uses an aluminum sprocket. An oil reservoir below the cam ensures sufficient lubrication of the lobes, even during cold starting. Forked rocker arms pivot on caged bearings and have roller-tipped rockers that result in more valve noise than conventional arms; but the rollers live longer in the 510's simplistic splash-type oiling system.



40mm Dell'Orto carburetor is jetted perfectly, so the engine never stumbles or hesitates, and it is easy to start. Cold start-ups usually take only one good prod on the left-side kick lever, while warm starts are normally a one-to-five-kick affair.

In itself, the addition of the liquid-cooled engine would have made the new 510 an extremely desirable motorcycle. But Husqvarna didn't stop there. The Ohlins single shock has been revalved for '87 and fitted with a stronger spring; the shock linkage now has grease fittings, and the aluminum swingarm is lighter. The front

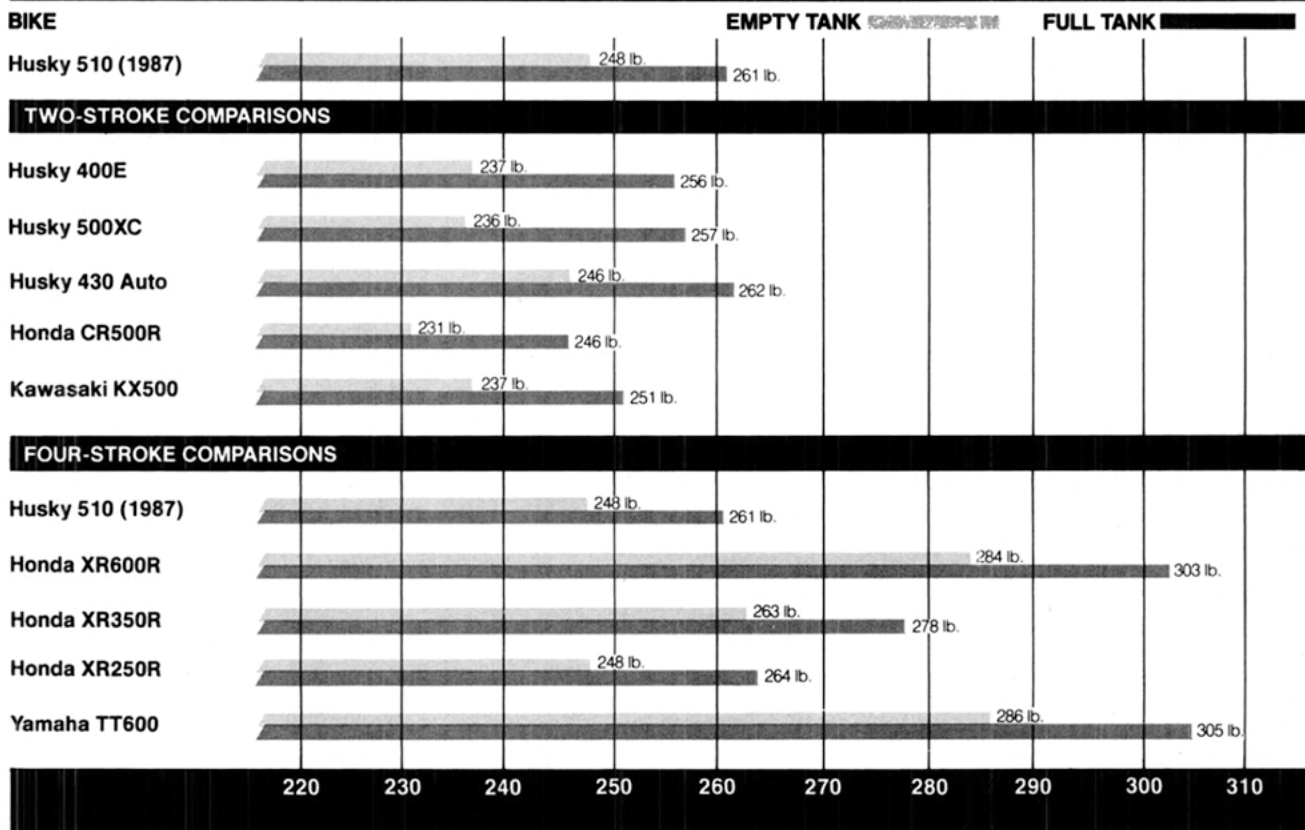
fork has heavier springs, floating bushings and just one oil seal per leg. The fork also has new, aluminum damper rods with recalibrated valving, and it now incorporates top-out springs and hydraulic anti-bottoming cones.

What all of these features add up to is a bike that is so much sheer fun to ride that it can make practically every mile of practically every ride a genuine blast. Full-lock, feet-on-the-pegs powerslides on fireroads and fast trails are as easy as dialing open the throttle in a turn. The bike steers precisely and handles with agility, no

matter if it's in the wide-open spaces of the desert or in the close confines of a tight trail; and for most riders under most conditions, the suspension will feel compliant and well-mannered. The fork can sometimes seem a little harsh on sharp, smallish bumps, particularly for a lighter or less-experienced rider who doesn't hit those bumps quite as hard; changing the stock 10-weight fork oil to 7.5-weight cures the problem.

But the big story about the '87 510 is its weight—or, more accurately, the lack of it. For not only is this bike one of the lightest four-stroke Singles

TALE OF THE SCALE



ever built, it *feels* even lighter than it actually is. In fact, when asked to guess the dry weight of the 510, most riders who tried the bike guessed right around 230 pounds. Most of that feeling of lightness is the result of Husky's careful removal of weight near the top of the engine.

There's a world of difference, however, between a bike that feels lighter than most two-strokes and one that can actually *beat* most two-strokes in an off-road race. So to test the 510's ability to do battle with competitive off-road machinery, we allowed one of our testers, an expert-rated desert rider, to race our 510 in a 45-minute European Scrambles. In a field consisting of more than 30 desert experts, he finished second overall behind factory Husqvarna rider Dan Smith, but ahead of another Team Husky desert legend, Dan Ashcraft.

Not only that, Team Husqvarna rider Larry Roeseler has been having some success racing the new 510. He finished second in the recent Baja 500, despite running out of gas twice and having to stop and open five closed gates while leading overall. Roeseler has also had some impressive outings in Two-Day ISDE Qualifiers with the new 510 Enduro model (the same bike as the Cross Country but with an inch less wheel travel and the necessary enduro equipment), finishing second in Michigan, third in Oregon and first overall in Washington. What's even more impressive, Roeseler's four-stroke 510 posted the fastest overall acceleration time in the Oregon and Washington events. So there's no question that this bike is competitive.

But the 510 is more than just a racing weapon for the deadly serious

competitor; it's also a great playbike for the weekend fun rider. Its agility and responsiveness can be appreciated by just about anyone with at least a little bit of trail-riding experience. And our 510 consistently got over 40 miles per gallon at medium-fast trail speeds, which means that the smallish, 2.1-gallon gas tank will allow 80-mile-plus rides—considerably farther than the same amount of gas would carry an Open-class two-stroke at the same pace. And as far as reliability is concerned, our test 510 has racked up over 800 test miles without a single problem.

There's no point, then, in trying to piece together your own ultra-trick four-stroke dirt thumper. The Husqvarna is the best one money can buy; and it's already assembled and sitting on the showroom floor down at the local Husky shop. ☒

HUSQVARNA 510 CROSS COUNTRY

SPECIFICATIONS

GENERAL

| | |
|------------------------|---|
| List price | na |
| Importer | Cagiva-Husqvarna USA 4925 Mercury St. San Diego, CA 92111 |
| Customer service phone | (619) 565-1414 |
| Warranty | 30 days |

DRIVETRAIN

| | |
|------------------------|--------------------------|
| Engine | sohc, four-stroke Single |
| Bore x stroke | 91.5 x 76.5mm |
| Displacement | 503cc |
| Compression ratio | na |
| Carburetion | 40mm Dell'Orto |
| Air filter | oiled cloth and foam |
| Lubrication | wet sump/dry sump |
| Gear ratios, overall:1 | |
| 6th | 5.84 |
| 5th | 6.94 |
| 4th | 8.21 |
| 3rd | 10.81 |
| 2nd | 14.28 |
| 1st | 20.67 |
| Measured top speed | 101 mph |

SUSPENSION/TIRES/BRAKES

| | |
|-------------------|---|
| Front suspension: | |
| Manufacturer | Husqvarna |
| Tube diameter | 40mm |
| Wheel travel | 11.7 in. |
| Adjustments | air pressure |
| Rear suspension: | |
| Manufacturer | Ohlins |
| Type | single shock |
| Wheel travel | 13.8 in. |
| Adjustments | compression and rebound damping, spring preload |
| Tires: | |
| Front | 90/90-21 Metzeler MXR |
| Rear | 4.50-18 Metzeler Multi-Cross |
| Brakes: | |
| Front | 9.1 in. disc |
| Rear | 6.3 in. drum |

CHASSIS

| | |
|---|-------------|
| Weight: | |
| Tank empty | 248 lb. |
| Tank full | 261 lb. |
| Weight distribution, front/rear, percent: | |
| Tank empty | 46.8/53.2 |
| Tank full | 47.1/52.9 |
| Fuel capacity | 2.1 gal. |
| Wheelbase | 59.9 in. |
| Rake/trail | 27°/4.7 in. |
| Handlebar width | 31.5 in. |
| Seat height (unladen) | 38.2 in. |
| Footpeg height | 18.0 in. |
| Footpeg to seat top | 20.0 in. |
| Swingarm length | 23.0 in. |
| Ground clearance | 14.3 in. |

