

TRACK TEST:

Honda CR125 R

If it were any easier to ride, your grandmother could be competitive on it.

BY PAUL DEAN





Honda might be leading the world in most areas of motorcycling, but in 125-class motocross it's been stuck in the middle of the pack for some time now. Sure, Red Racers from Honda have been incredibly successful during the past few seasons in all sorts of motocross events—national, international and local, as well—but not many of them have been of the 125 persuasion. If anything, the 125 class has just about become the personal property of Suzuki's screaming-yellow pocket-rockets.

With the new CR125R, though, Honda is out to change all that and recapture some of the 125-class fame and fortune it enjoyed back in the early Seventies, the real glory days for that company's 125cc motocross program. Team Honda's Marty Smith completely dominated the nationals back then, and CR125 Elsinores were practically unbeatable everywhere else. Smith and the 125 Elsie made motocross history, putting 125-class racing on the map in this country almost single-handedly, not to mention giving America its first-ever home-grown MX folk hero.

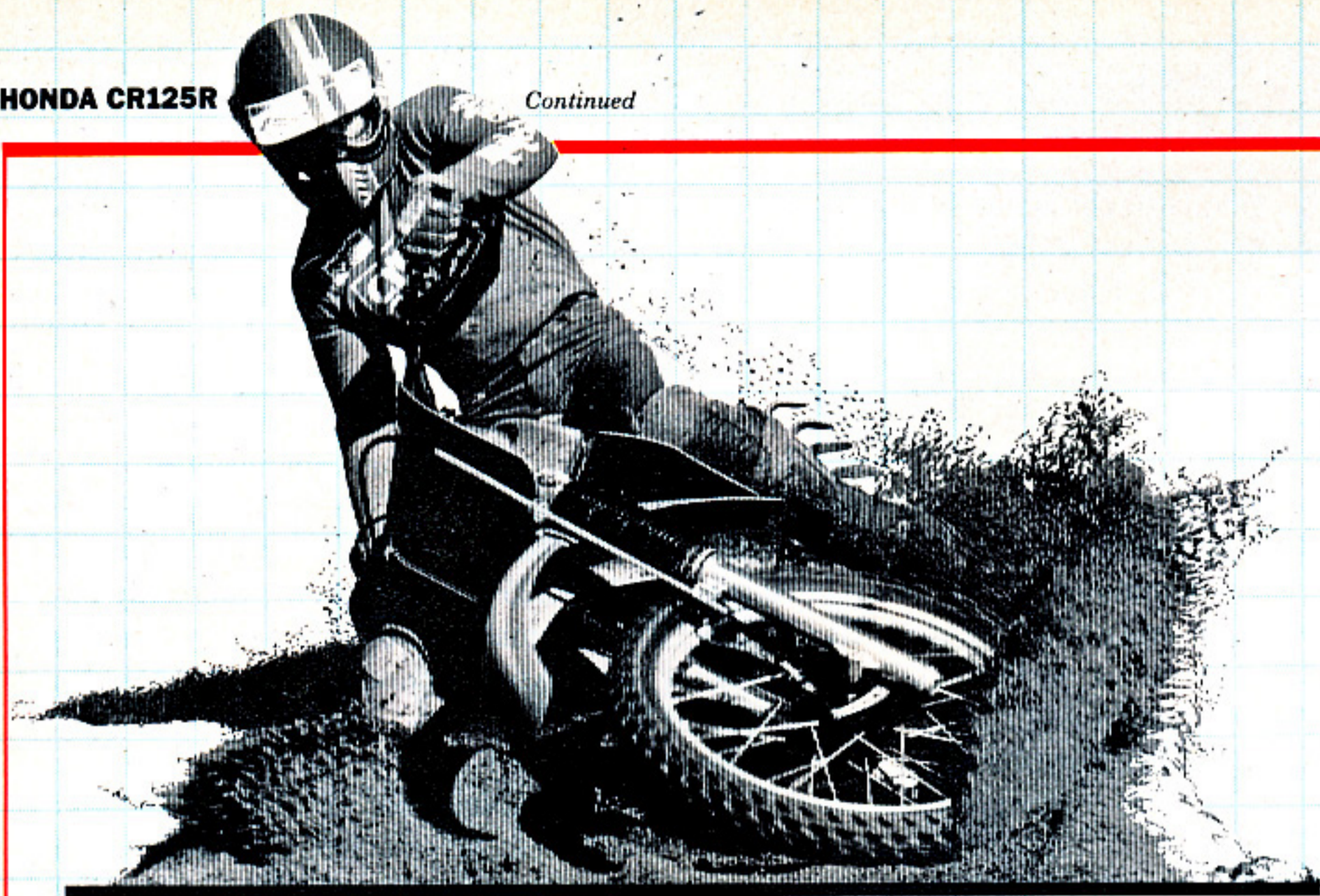
Since then, however, things haven't been so rosy for Honda in the 125 arena. From 1976 to the present, either Yamaha or Suzuki has been the force to be reckoned with at the class's professional level; and that, combined with a succession of design peculiarities on production-line CR125Rs (23-inch front wheels, outrageously high seats and uncompetitive powerbands, to name just a few) has kept 125cc Hondas from being as competitive at the local level as the

larger CRs have become in their respective classes.

Until now, that is. For just as with the bigger CRs, Roger De Coster, Honda's MX Team Advisor and motocross design consultant, has waved his magic wand over the new CR125R. Getting the bike built Roger's way involved the CR's third major redesign in as many years; but it was worth the effort, for the end result is a truly brilliant motorcycle that is going to shake things up in the 125 class, starting right now. De Coster might have become a legend on 500-class Suzukis, but he knows—like so few people in all the world do—exactly what it takes to build a world-class motocross bike, regardless of the size of its engine or the name on its gas tank.

Not surprisingly, then, all of the new CRs reflect De Coster's strong influence on their design, but none is more radically improved over its 1982 counterpart than the CR125R. The difference between the old and the new is like night and day—or, more appropriately, like finishing first and finishing anywhere else.

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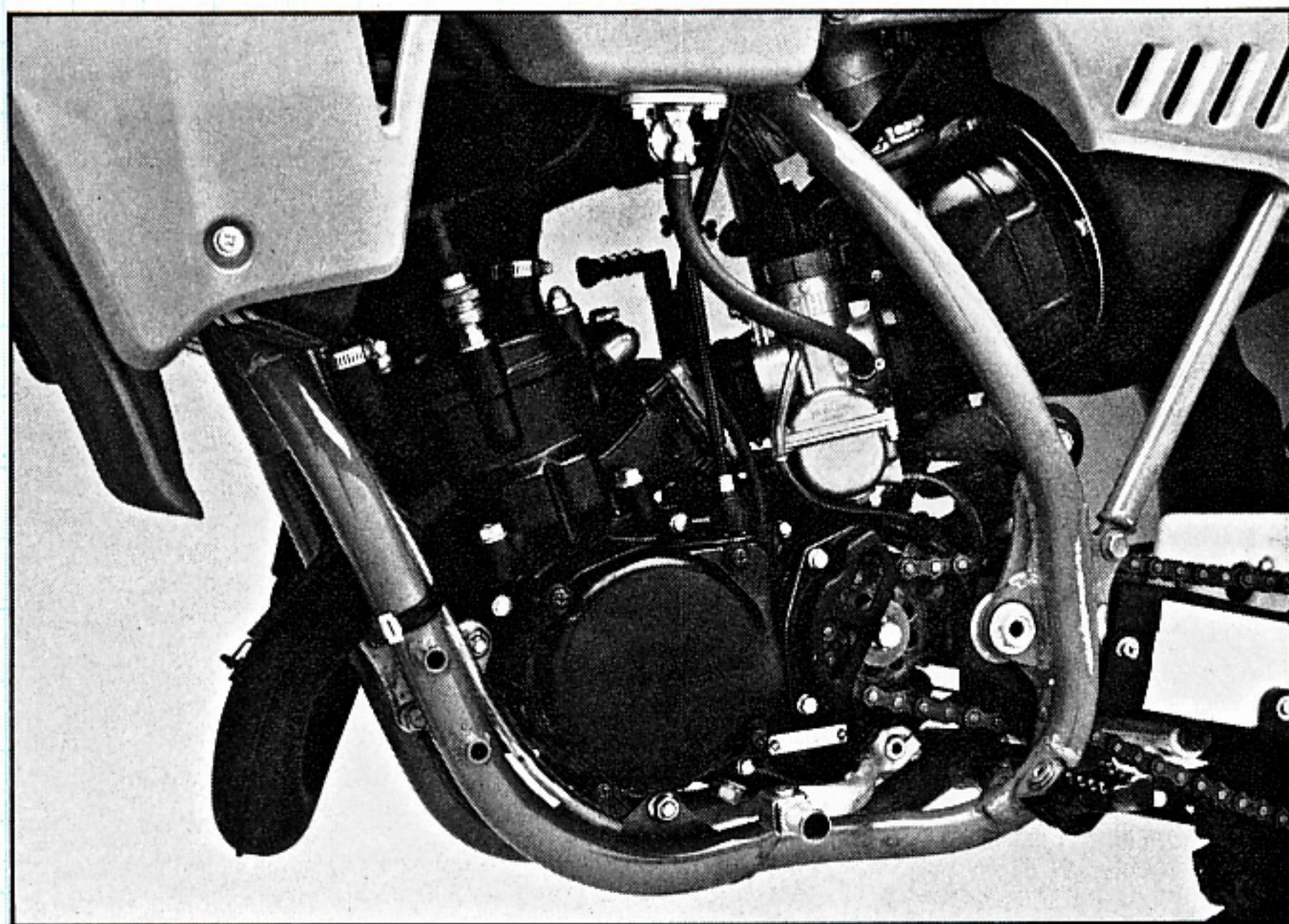
TECH INSPECTION:

ENGINE:

Many riders felt that last year's CR125R was too pipey, so the new engine was tuned to deliver more midrange. The entire exhaust port was shifted downward 0.3mm, the four main transfer ports were enlarged by both raising their top and lowering their bottom edges, and the two booster transfers that extend upward from the bridged intake port were raised 1.2mm. There's a completely new pipe (with a small aluminum silencer) that also bolsters the midrange power, plus a higher compression ratio (8.6:1 vs. 8.3:1) and a

two-degree reduction in total ignition advance (necessitated by the raised compression). Also new this year is a little metal deflector in the intake manifold that improves the flow of incoming air by directing it away from the sharp corners of the six-petal reed block. In addition, the delivery rate of the cooling system's water pump was cut by more than 10 percent, which fractionally improves performance by reducing the amount of power needed to drive the pump.

Cooling-system refinements also helped make the '83 engine two pounds lighter. The water pump's impeller and outer cover both are plastic, and the overall



Reed-valved engine was recalibrated for a wider powerband and more midrange

Down on raw power but up in pure tractability.

mass of the cylinder casting was reduced through the use of smaller water-jacketing. The cooling-system capacity is down 45cc from the '82 CR's, and a slimmer water-pump design allows the engine to be 14mm narrower at its widest point.

DRIVETRAIN:

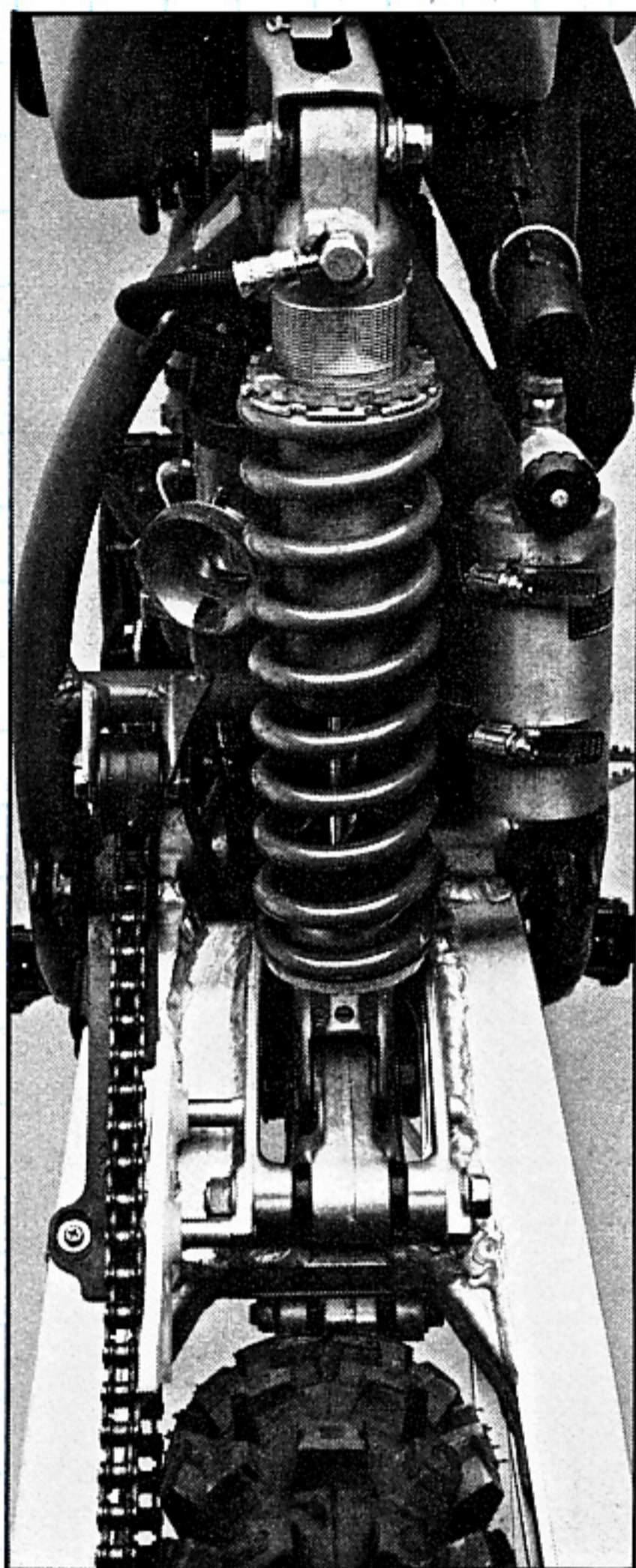
A more obvious change to the '83 CR is that its No. 520 drive chain is now on the left. Both the chain and the rear brake had been on the right side since the 1979 model-year to make for a lighter rear hub; but advances in wheel technology, plus a need to tuck-in the rear-brake linkage so the bike could be narrower at the footpegs, prompted the designers to move the chain back to the left. Which meant that everything inside the engine—clutch, ignition, water pump, transmission-gear location—had to swap sides, making the new motor virtually a mirror-image of the old one. The rear hub is no heavier as a result of the switch, but the kickstarter gears now are on the same (right) side of the engine as the steel kick lever, so the kickstarter shaft is considerably shorter and lighter.

The '83 CR also has a few new ratios that complement the improved midrange power. The primary gearing is taller, as are the ratios for third and fourth gears. And for increased durability, all the transmission gears are wider, the shift forks are shorter and the clutch is new. There now are just 10 clutch plates instead of 12, but their outside diameter was increased 15mm to yield more overall friction area than before. The plain clutch-plates now are aluminum instead of steel, which saves considerable weight, and the fiber plates have a higher asbestos content to prevent them from swelling when hot. The clutch also uses rubber shock-cushioners instead of the coil-spring type.

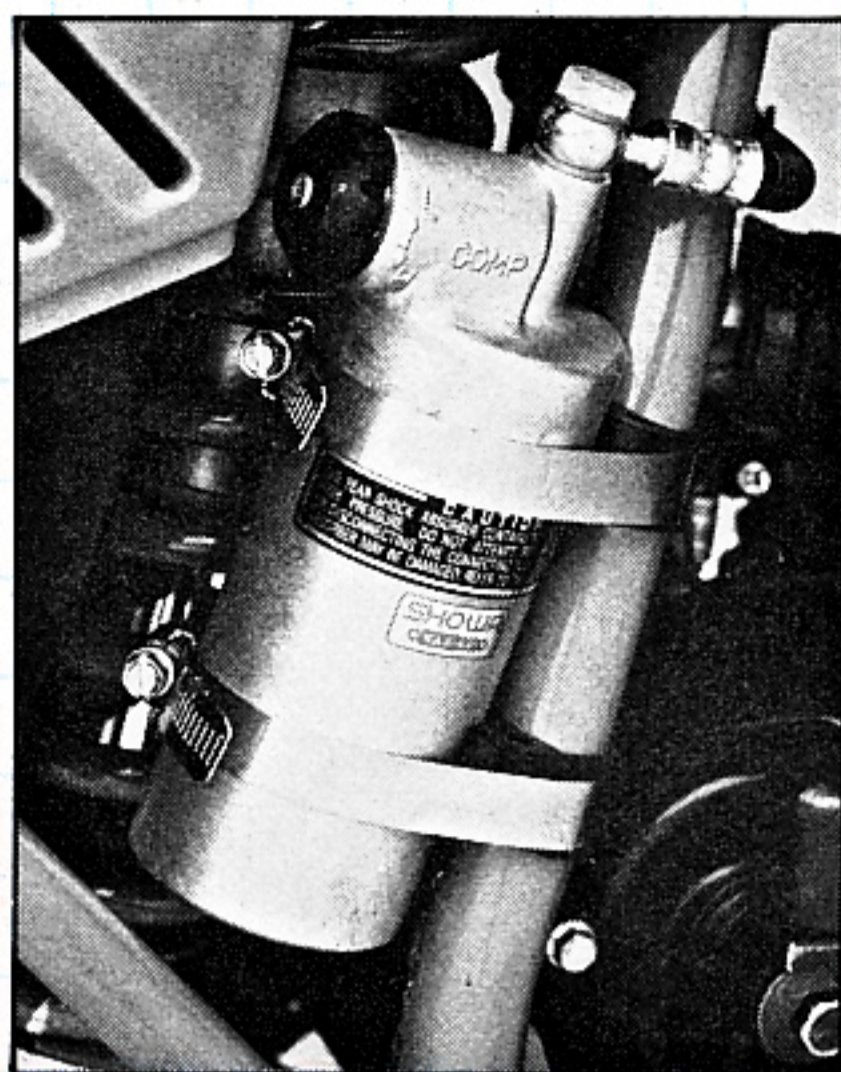
CHASSIS:

Frame: With the help of the lighter engine, the CR's redesigned chassis results in a bike that is six pounds lighter this year. The 125 also has a 2-inch-lower seat and slowed-down steering geometry. The steering angle is now 27.2 degrees instead of 26, the trail is up from 98mm to 105mm, and the wheelbase is 10mm longer. The twin radiators sit 50mm lower, contributing to a lowered center of gravity, and the 125, just like the bigger CRs, has a quick-detach rear subframe that can be removed in less than a minute to gain access to the rear shock.

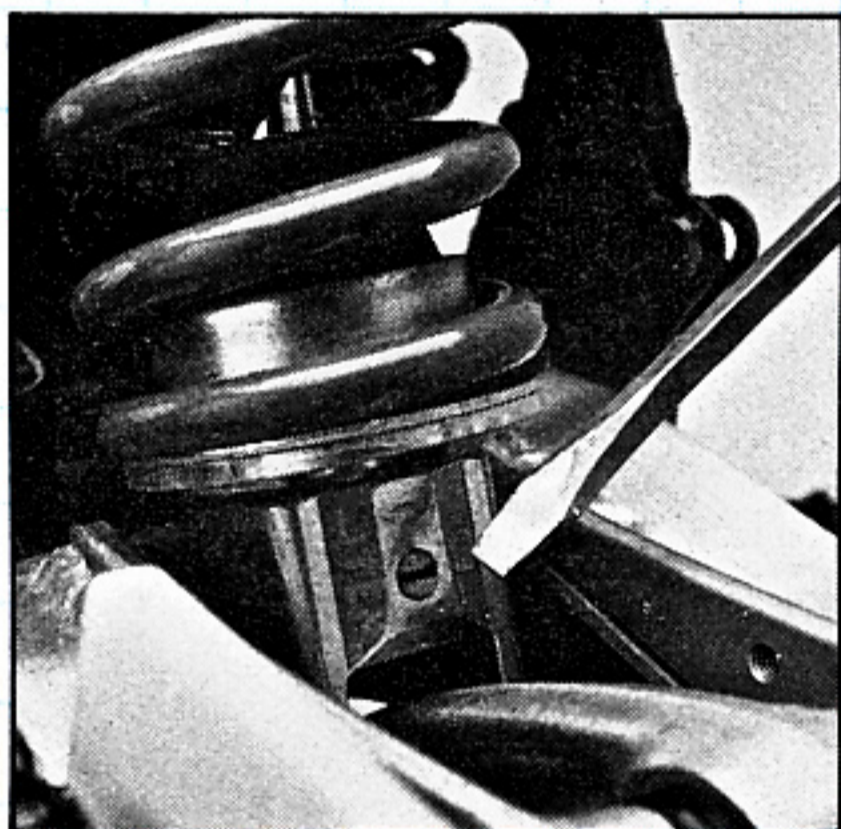
Wheels: The CR's hubs are slightly narrower for '83 and lace with straight-pull spokes to new DID serrated-bead rims. But the overall weight of the wheels is re-



Removing subframe puts shock in open
Just like a built-in Showa workstand.



12-position compression-damping knob
For dial-a-ride rear suspension.



Rebound-damping screw has 30 clicks
But only the first 20 have any effect.



duced only because both are shod with the latest Bridgestone motocross tires that are fractionally lighter than last year's knobies. The brakes, too, are narrower and thus have less swept area, and the front brake still is the single-leading-shoe type. But an increase in the leverage of the front-brake linkage nets more stopping power for any given amount of pressure at the lever.

SUSPENSION:

Front: The CR125R still uses a 38mm Kayaba fork with adjustable compression damping, but there are significant differences between the '82 and '83 versions. The new fork has 5mm less travel, is 13mm shorter (both part of the seat-lowering process) and uses 14 percent softer springs; and whereas last year's compression-damping adjuster had just three detented settings, this year's has no detent and is infinitely variable within eight turns of the adjusting screw located in the bottom end of each slider.

Rear: The rear wheel also has 5mm less travel, for the same reason as the front. The geometry of the Pro-Link system, which now uses a lighter swingarm and linkage components made of forged aluminum rather than forged steel, has been revised for the third straight year. It now delivers a lower overall wheel-to-shock leverage ratio and a less-progressive rising rate at the rear wheel. The shock itself is lighter and has a 10.5mm shorter stroke, despite being 26.5mm longer. The decrease in leverage allows a shock spring that is lighter in weight and 27 percent softer in rate. And Honda has two optional shock springs available—one eight percent stiffer and one eight percent softer.

Last year's CR offered only four-way adjustable compression damping at the rear; this year's has a 12-position compression-adjuster knob on the bladder-type shock reservoir, plus a 20-position rebound-damping adjuster screw on the shock body itself.

DETAILS:

Even the 1.7-gallon gas tank helps lower the *cg* by carrying some of its fuel in a portion that extends downward on the left side. The new seat is bright blue, extends up the rear of the tank like those pioneered by Yamaha last year, and it has a one-piece seamless cover designed to resist premature ripping.

In addition, the chain guide is more rugged, the steel plates that screw to the swingarm around the axle holes are thicker and the footpegs now are steel instead of cast iron.

Will it Win?



• Obviously, no motorcycle can turn you into another Roger De Coster; but the CR125R is so competent, so confidence-inspiring, so able to bring out the best in anyone who rides it, that it makes you *feel* like De Coster. No matter how aggressively

it is ridden, the CR refuses to misbehave in any way. It simply does exactly what you tell it to do, all the time, every time. It's the closest thing to a no-fault motocross bike the 125 class has ever seen.

Like anything else, of course, the

CR125R is not perfect—almost, but not quite. And if there's any aspect of the bike that is even the least bit questionable, it's the power output. The CR isn't slow by class standards, but neither is it exceptionally fast. The 122cc engine is unusual

COMPARATIVE TEST DATA:

Make & Model	Wheel Travel, Front/Rear, in.	Weight (fuel tank empty), lb.	Weight bias, Front/Rear, percent	Steering head angle/Trail, degrees/inches	Transmission, number of speeds
Honda CR125R-'83	10.9/12.3	192	48.6/51.4	27.2/4.1	6
Suzuki RM125-'83	10.7/11.8	200	48.1/51.9	29.5/4.8	6
Kawasaki KX125-'82	11.2/11.4	200	48.0/52.0	28.0/4.8	6
Suzuki RM125-'82	11.2/12.6	197	47.7/52.3	29.5/4.8	6
Honda CR125R-'81	10.6/11.5	213	46.7/53.3	29.5/4.8	6

for a modern 125 in that it makes its best power in the middle and upper-middle rpm ranges rather than at the very top. The power doesn't abruptly fall off at super-high revs, but it does taper off considerably. So if you wind the engine up to maximum rpm it still makes some horsepower, but you can go faster if you shift earlier and use the stronger acceleration that's possible at lower revs in the next-higher gear.

As a result, the higher-revving 125s probably will out-accelerate the CR by a small margin when the traction is excellent and the straights are relatively smooth and long. But any time the track is slick or rough or tight, the controllability of the Honda's power will prove to be a distinct advantage. And overall, while the CR might not roost as much dirt or make as much noise as most other 125s when powering out of a corner, on most courses its tractability will help make up for what the bike lacks in brute power. Pro-class riders might need to perform a little open-port surgery on the cylinder, but just about everyone else will be better off to leave the porting alone and enjoy the tractability.

Besides, any power deficits that aren't offset by the friendliness of the engine probably can be nullified by the CR's handling, which borders on the supernatural. You truly feel invincible on this machine, as though Mr. Roarke himself has granted your fantasy and instantly made you a world-class rider. Once you climb aboard the CR's new, extra-long blue seat, nothing can stop you. The track can change from fast to slow, from bumpy to smooth, from slippery to loamy and back again, but you and the CR breeze through it all as easily as a cruise down Main Street.

A perfect example is the steering. There is, quite frankly, no kind of corner that the CR won't go around quickly, cleanly and precisely. It eagerly snaps around first-gear hairpins almost in its own length, yet it attacks fast sweepers like they were its specialty. It can use just a part of a berm to quickly square off a turn, or it will rim-ride around the outside without any tendency to either climb up out of the berm or slip down off of it. The nifty Bridgestone M33 front tire is responsible for some of this exceptional turning versatility, but the De Coster-signature steering geometry deserves most of the credit.

What's more, none of this steering magic has caused the CR to be the least bit unstable in the rough. It never fails to track arrow-straight, even over the most dreaded of killer whoops and monster bumps. And

the suspension smooths out virtually all of the harshness from the track surface, making big bumps feel like little ones and little bumps feel like no bumps at all. The rear end never wants to kick upward or side-to-side, and the fork effectively isolates the hammering of the track from the rider's hands and forearms.

Right out of the box, in fact, the suspension outperforms any we've ever tested on a 125; and with minimal fine-tuning, it becomes better yet. We ultimately settled on the stock weight and level of oil in the fork, with the compression damping adjusted three turns out from maximum. At the rear, we preferred the compression damping set on the full-softest position and the rebound on its second- or third-softest, with the stock spring preloaded to an overall length of 245mm. Ideally, our bigger riders (170 to 190 pounds—heavier, admittedly, than your average 125-class pilot) would have used the optional stiffer shock spring, since the rear end tended to bottom too often with one of them aboard; but they never really *minded* the bottoming, because aside from feeling a gentle "thump" a few times each lap, they reported no adverse effects on the handling whatsoever. It's one more of many reasons why the new CR125R is almost too good to be true.

Indeed, but while the CR performs like a refugee from Fantasy Island, it doesn't feel like Tattoo's personal minibike the way most other 125s do. It weighs a mere 192.5 pounds and is as easy to toss around as a Schwinn, but in actuality it's a full-size motocrosser for full-grown riders, not something scaled-down to grade-schooler dimensions. A six-foot rider isn't at all cramped on the Honda, yet smallish riders aren't intimidated by its size.

Add to that, then, the comfort of the seat, the low level of engine vibration, the two-finger stopping power of the front brake and, of course, the flawless handling, and it's plain to see why the CR, despite its unremarkable acceleration, is such a competitive 125: It is virtually incapable of a mistake. You, of course, will make your fair share of them, but at least the Honda won't worsen matters by making mistakes of its own. And that ease of operation will allow you to ride the CR harder, longer and with more absolute control and confidence than any other production-line bike in the class.

With all of that going for you, you can't help but go faster in the process. And win more often, as well. Because with you or without you, CR125Rs are going to collect a pile of trophies in this coming season. ●

Ride Review

• I've never been able to race a 125 competitively. My six-foot-two body never seemed to fit properly behind the bar, and my 180-pound bulk usually had the suspension and motor screaming for relief. I was resigned to a life of Open- or 250-class racing—until I rode the new CR125R.

I know it's a 125 because it says so on the seat, but that's all that stops me from believing Honda has built a little 250. I finally can fit behind the bar of a 125 without getting knee-cramps. More importantly, Honda has developed a suspension system that can even handle my Open-class-sized body, without sacrificing the ride for the little folk of 125cc racing. In fact, I'm not even sure how I'd go about altering the suspension to make it better for me. I tried, but nothing seemed to work as well as the stock settings.

The only part of the motorcycle I'd want to change would be the power curve. There's plenty of low-end and mid-range power, even for a 180-pounder like me, but when the racing gets furious, the little CR needs stronger top-end pull.

Even without that change, though, the CR125R still is a very competitive machine. But even better, it makes me feel that even I could be competitive in the 125cc class. And any bike that can do that has to be special. —David Dewhurst

• I'm not a good sport. Every time a kid on a 125 flies past me and my Open bike in practice, I'm left thinking about putting garlic in his Clearasil the night before the prom. It doesn't bother me that 125s can go faster than 500s on some courses, but it does bother me that I can't go that fast when I'm on a 125.

Or at least I can't go that fast on most 125s. The Honda CR125R, however, clearly is different. It's a 125 for grownups. The Honda has none of the twitchy or explosive habits that keep me off most small-bores. In fact, it's one of the easiest-to-race machines—of any size—I've ever ridden. That isn't to say it's powerful, though. Chances are that holeshots are going to be few and far between. But what the CR lacks in top-end muscle is more than compensated for in the way its horsepower is delivered. It has an Open-bike power curve, just moved down a couple of notches on the entire scale. Plus, the CR is stable enough to make you believe you *are* on an Open bike through the straights, and then in the turns, the CR is as agile as any 125 on the track.

And when I race the Honda, the kids in practice don't even bother me any more. What does get me, though, are those old men on Open bikes. They just always seem to be in the way. —Ron Lawson

CYCLE GUIDE SPECIFICATIONS

Honda CR125R

motocross

IMPORTER: American Honda Motor Company Inc., 100 West Alondra Boulevard, Gardena, California 90247

SUGGESTED RETAIL PRICE: \$1738

ENGINE

Type liquid-cooled two-stroke vertical single
 Port arrangement one reed-valve-controlled intake,
 four main transfers, two booster
 transfers, one exhaust
 Bore and stroke 55.5mm x 50.7mm
 Displacement 122.7cc
 Compression ratio (corrected) 8.6:1
 Carburetion one 34mm Keihin slide/needle
 Air filter washable oiled foam element
 Lubrication pre-mixed fuel and oil
 Starting system primary kick
 Ignition internal-rotor magneto CDI
 Charging system none

DRIVETRAIN

Primary drive straight-cut gears; 3.294:1 ratio
 Clutch wet, multi-plate
 Final drive #520 chain (5/8-in. pitch, 1/4-in. width);
 3.923:1 (51/13) ratio

Gear	Internal gear ratio	Overall gear ratio	MPH per 1000 RPM
I	2.417	31.231	2.39
II	2.000	25.846	2.89
III	1.556	20.103	3.72
IV	1.300	16.800	4.45
V	1.136	14.685	5.09
VI	1.000	12.923	5.78

SUSPENSION/WHEEL TRAVEL

Front .. Kayaba air-spring, 38mm stanchion tube diameter,
 compression damping infinitely variable
 within 8 turns of adjuster/10.9 in. (278mm)
 Rear single Showa shock, 12-position adjustable
 compression damping, 20-position adjustable
 rebound damping, 14.5mm spring preload
 range/12.3 in. (313mm)

BRAKES

Front drum, single-leading shoe
 Rear drum, single-leading shoe,
 straight-pull cable-operated

TIRES

Front 90/80-21 Bridgestone Motocross M33
 Rear 130/80-18 Bridgestone Motocross M32

DIMENSIONS AND CAPACITIES

Weight 192.5 lbs. (87.3kg)
 Weight distribution 48.6% front, 51.4% rear
 Wheelbase 56.3 to 57.6 in. (1430 to 1464mm)
 Seat height 36.6 in. (930mm)
 Handlebar width 32.3 in. (820mm)
 Footpeg height 16.3 in. (415mm)
 Ground clearance 13.7 in. (348mm), at engine cradle
 Steering head angle 27.2 degrees from vertical
 Front wheel trail 4.13 in. (105mm)
 Frame tubular chromoly steel, single front downtube

Fuel tank plastic, 2.0 gal. (7.5l), no reserve
 Instrumentation none

PERFORMANCE

Top speed (observed) 64 mph (106 km/h)

WARRANTY: none

AVAILABLE COLOR: red only

All weights and measurements are taken with machine unladen and fuel tank empty

