Twenty-one-in. wheel laced to the aluminum brake hub sets off beautifully polished forks.

HONDA CR 250M ELSINORE

Zowie! Honda went and did it again

Here it is. We've waited quite a while. But it is finally out. The first two-stroke from Honda. Not only is it a first for Honda insofar as the engine design goes but a first into the motocross market as well. It would be very easy to say that considering this machine as a first effort, it isn't too bad. But the machine is more than that. Much more. The genius of Mr. Honda and his organization is phenomenal.

Sit on the Honda. No matter what you're used to riding, from a minibike to a full dress Electra Glide, the Honda feels perfect. You probably didn't even notice the seat. That's how soft it is. Reach out and grab those handlebars (just like the frame, they too are made of chrome-moly). Stand on the footpegs. Can you touch your knees together? Almost. Pretty narrow, huh? Can you feel the kickstarter against your leg? Neither could we. No interference here. Look down at perhaps the most beautiful fuel tank in the business. All aluminum and detailed with perfect taste. Push the enrichening lever on the carb. Turn the *off-run-off* ignition switch to the run position, open the petcock and it's ready to start. Because of the short port timing, the machine has a nasty tendency to kick back if you do not follow through firmly with your kick. We found that the best manner to start the machine was to lean on the starter lever slightly until its angle paralleled the upsweep of the exhaust pipe, then tromp it hard. If you follow this method you can almost be guaranteed it won't bark back at you. The engine comes to life with a sound that is all its own. You could identify the CR approaching with your eyes closed simply because of its timbre. Once warm, release the enrichener. Snap the quick throttle. The revs respond almost faster than your hand at the twistgrip. Pull in the clutch . . . like a feather! Step down into first. Feel the snick? Barely. Give it some gas and take off. If the front wheel comes up on you right away that's good. It's supposed to. You're going to find out in a very short time that this bike is the Big Rocket! We hear you mumbling "Darn pipey Japanese scooters, all they know is *rpm equal bhp.* Not on this one, my friend. Power is anywhere, anytime. The power band on the Honda just won't quit. The seat of your pants tells you that it starts pulling slightly off idle and comes on strongly at about 3500 rpm. With the red line at 7500 that gives you a wider power spread than many big bores. You will find that you can torque your way out of a corner and outhorsepower any competition in sight. Drag racing the Honda CR 250M blew off every single 250 MX machine it encountered.

Photos by Mike Parris

CR 250 M ELSINORE

Attempt at weight saving is evident everywhere. Conical hub and sprocket work well, and those excellent rear shock absorbers . . . !

And we raced darn near all of them. Not only that, but it did the same thing if we started with a dead engine and let the competition start with their motors running. The distance the bike pulled on its competition was so great that it eliminated any question of rider experience. The same thing happened out on the motocross track. The attributes of the machine made it possible for our testers to outbrake the competition going into corners, and pull away from them coming out as they struggled to get their bikes up on the pipe.

In the rough stuff the bike really showed us what it can do. After initial stiffness the front forks proved to be the best thing yet from Japan and as good as anything Europe has thrown at us. We had our test bike fork legs set out all the way on the adjustment which gave it the nasty tendency to wash out if you didn't corner with the power on. With the power dialed open it hung in there beautifully. Stability over rough ground is excellent although we noticed a very slight shaking of the front end over washboard-like terrain. Less experienced motocrossers would do well to raise the legs a notch or two. The bike would be easier to corner and the stability would not be affected much. The rear end is beautifully behaved. The shocks are extremely efficient and are rebuildable as well. We never found ourselves riding the front wheel because of a bump the rear wheel hit. It takes everything in stride and transmits little to the rider.

Some of our testing was conducted

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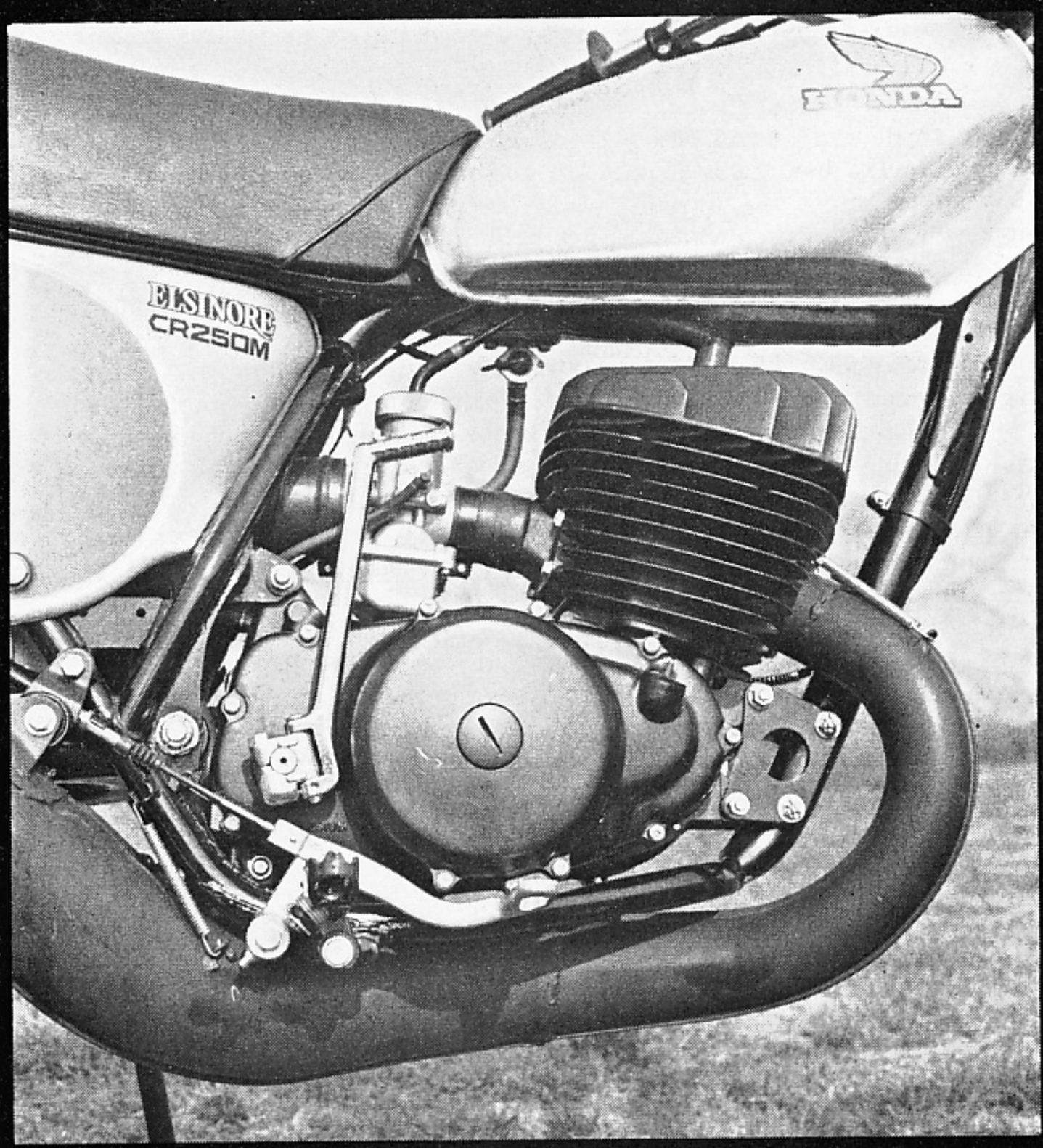
TECHNICAL APPRAISAL

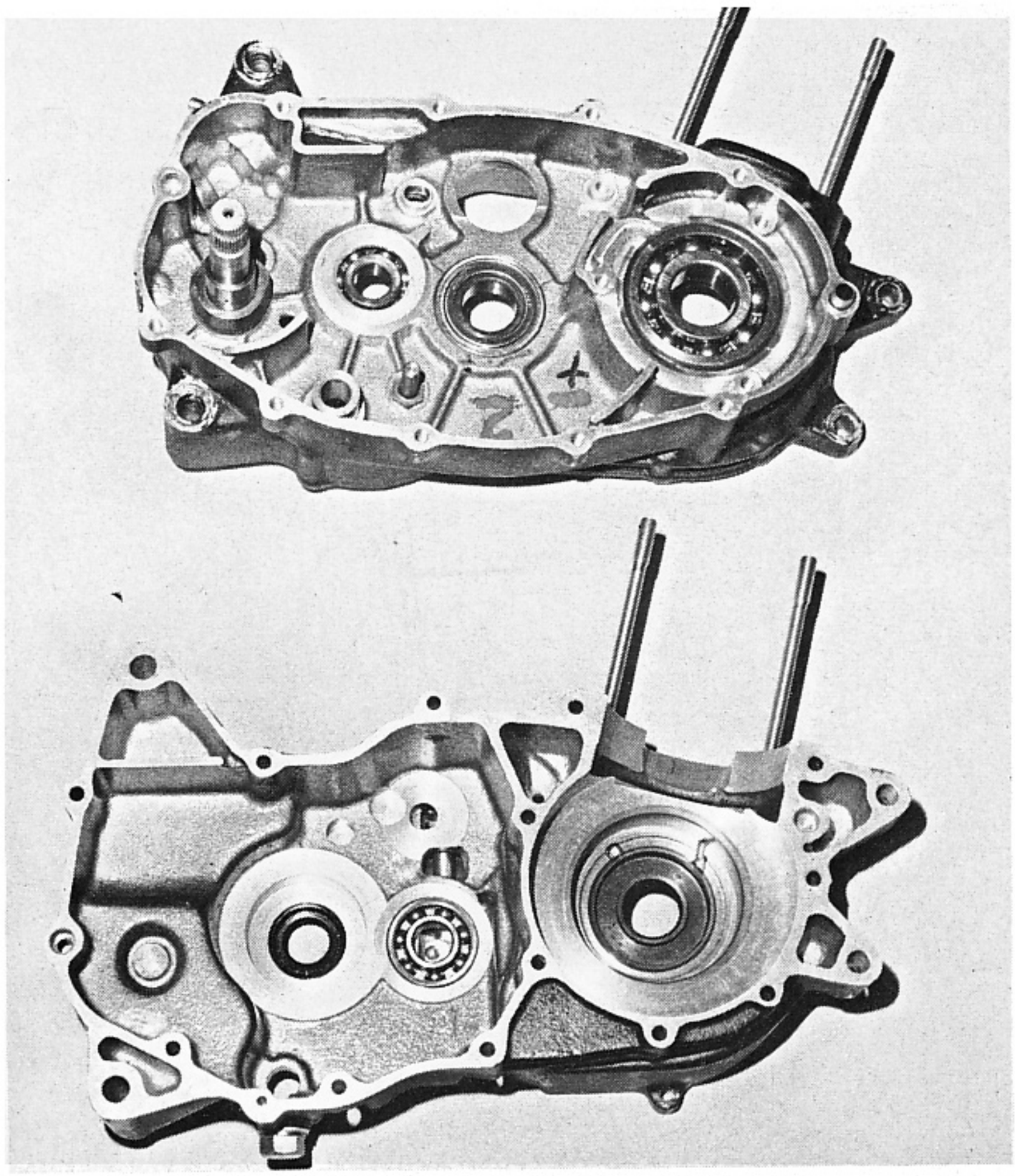
What makes it go

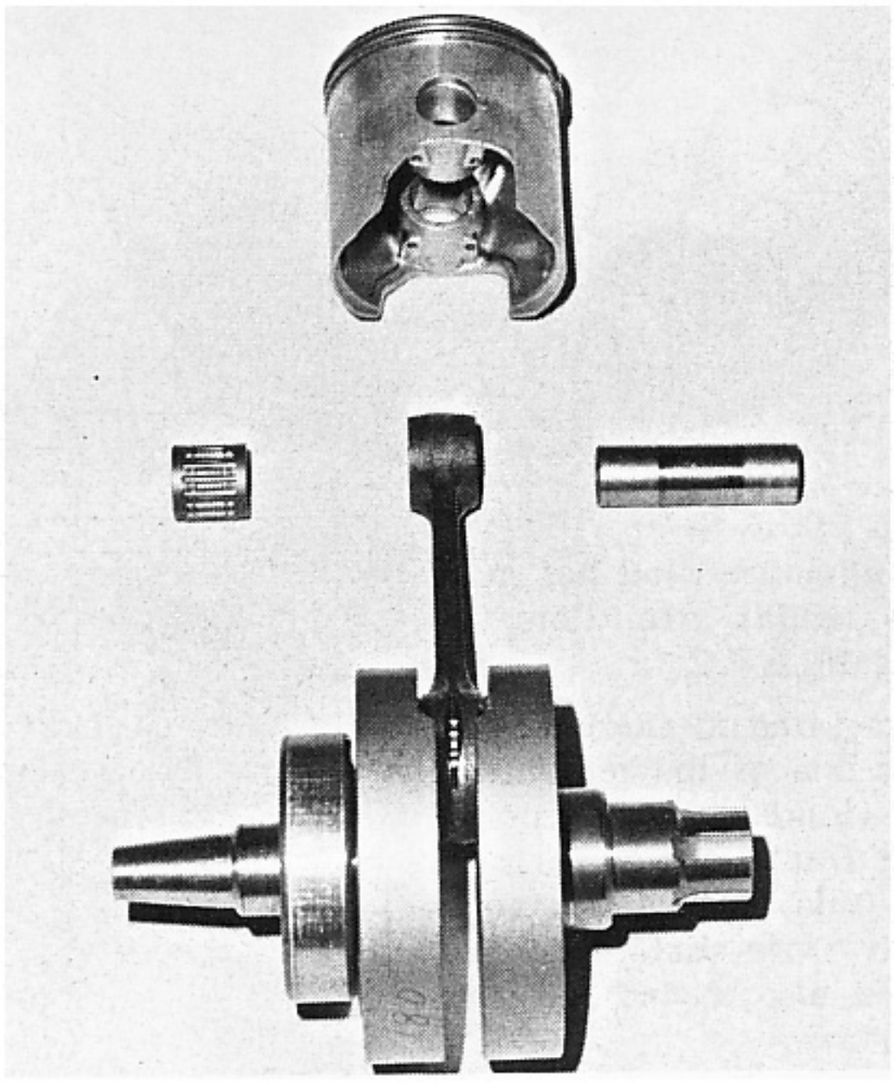
The engine is painted black for better heat dissipation. Head finning is angled slightly toward the center of the unit. Inside, the aluminum head shows no really unique configuration. The spark plug is centrally located surrounded by a moderate squish area. The cylinder is also aluminum and carries a steel liner bonded to it. This makes for a tighter than normal bond between the liner and the cylinder, reducing distortion and aiding heat dissipation. The liner is fitted to the barrel in such a way that liner replacement alone is not possible. In case of serious cylinder damage the entire cylinder/liner assembly must be replaced. The porting is somewhat unusual. The intake windows are not abnormally large although they are staggered. The right window is slightly lower at the bottom edge than the left one. At the top edge the right window is substantially higher than its neighbor. Two transfer ports on each side lead the fuel into the combustion chamber and direct it at the rear of the cylinder. Extensive angling is to direct gas flow with greater accuracy. Overall port timing is short, and the holes are somewhat wider than usual,
not terribly deep. The upper corners of the exhaust port also show signs of angling so that spent gases being pushed out from around the cylinder walls will not have to make as sharp a turn in exiting the cylinder. When taking such a direct path out of the chamber, the gasses exit at a much more rapid rate. Considering the brief milliseconds a cyinder has in order to empty out and recharge at high rpm, the Honda porting is most efficient. It will be a long time before it will be improved upon. The cylinder and head mount with four studs that pass from the cases all the way through the top of the head. Four more studs on the cylinder deck secure the head. The dual-ring piston is a forged item that has undergone an etching process whereby thousands of microscopic holes are laid into the piston wall to hold oil. This extra safeguard against seizure will definitely be a factor in the bike's reliability. Both rings have a teflon coating on the cylinder contact edge to prevent scuffing during the break-in period. The coating should only last as long as the break-in and the rings will have an excellent seal by the time it wears off. Both ends of the connecting rod ride on caged needle bearings. The wrist pin oiling holes in the piston are not drilled in the normal middle position. Instead, two holes are drilled vertically at the leading edge of the casting boss leaving two large canals for the lubricant to flow onto wrist pin. The crankshaft rides on some very large caged ball bearings. These monsters should be more than up to the strains of many months of racing. The internal cases are cast in aluminum and are very light. Honda has spared little in order to make the machine light.

The 14-plate (seven steel and seven cork) aluminum clutch rides on the right side of the engine on the transmission mainshaft. Because of this arrangement, the bike can be started in any gear simply by pulling the clutch lever in and kicking. Primary drive is



High volume exhaust pipe is an important factor in power package. Kick starter tucks in out of way. Entire engine weighs but 67 lb.





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1. Internal crankcases are made of aluminum (outers are magnesium). Note enormous main bearing in upper case half.

2. Crankshaft assembly shows rugged design. Note the size of the main bearing on crankshaft, also lube holes in wrist pin bosses.

1.

TECHNICAL APPRAISAL

via straight-cut gears which did not produce any of the whine normally encountered with such a setup. The transmission shifts on the left side in a down-for-low pattern. Inside, the gear selection is controlled by a ratchet that rotates a small drum on the end of the layshaft. This type of mechanism is similar to that found on other Japanese bikes. On the other side of the engine, the magneto-coil ignition provides sparks for the secondary coil mounted under the tank. Nice touches such as magnesium outer cases add to the appeal of the engine.

The carburetor used on the Honda is a Keihin of completely new design. The two main changes over previous Keihins are a completely protected main jet, and a brass-chromed slide. The main jet is housed in a small inverted thimble-like cup. Four small holes in the cup allow fuel to reach the jet but the cup keeps it from rushing in or away. A small drain screw has been provided directly below the jet should you wish to empty the bowl. The advantage in the brass-chromed slide is in its independence of lubrication. We had the opportunity to manipulate one of these slides in a carburetor fresh from a parts bin. The lack of drag is indeed impressive! No one should ever have any problems with the slide sticking in the carburetor body. Floats on the carburetor are solid foam. They can be cut or punctured and remain bouyant.

The frame on the Elsinore is impeccable. Manufactured from 4130 chrome-moly, the single-downtube unit splits into two smaller tubes that pass underneath the engine forming a cradle. These tubes continue up behind the engine until they join another large diameter tube at the junction of the tank and seat. This main member runs up to the front where it is welded and gusseted to the steering head. All welds are smooth and clean. A chamber behind the engine houses the foam element air filter and serves as a mounting base for the seat, fender, and top of the shock absorbers. The extremely sturdy swinging arm, also made from chrome-moly, mounts to the frame just inside the engine bay and rides on fiber bushings with a nipple grease fitting.

The CR had quite a few surprises in store for us, many of which you've already read about, but one of the nicest surprises it yielded was in the suspension department. The shock absorbers are not new in design—many works bikes have had them during the last motocross season—but up until now they weren't available to the general public. A pair of springs are

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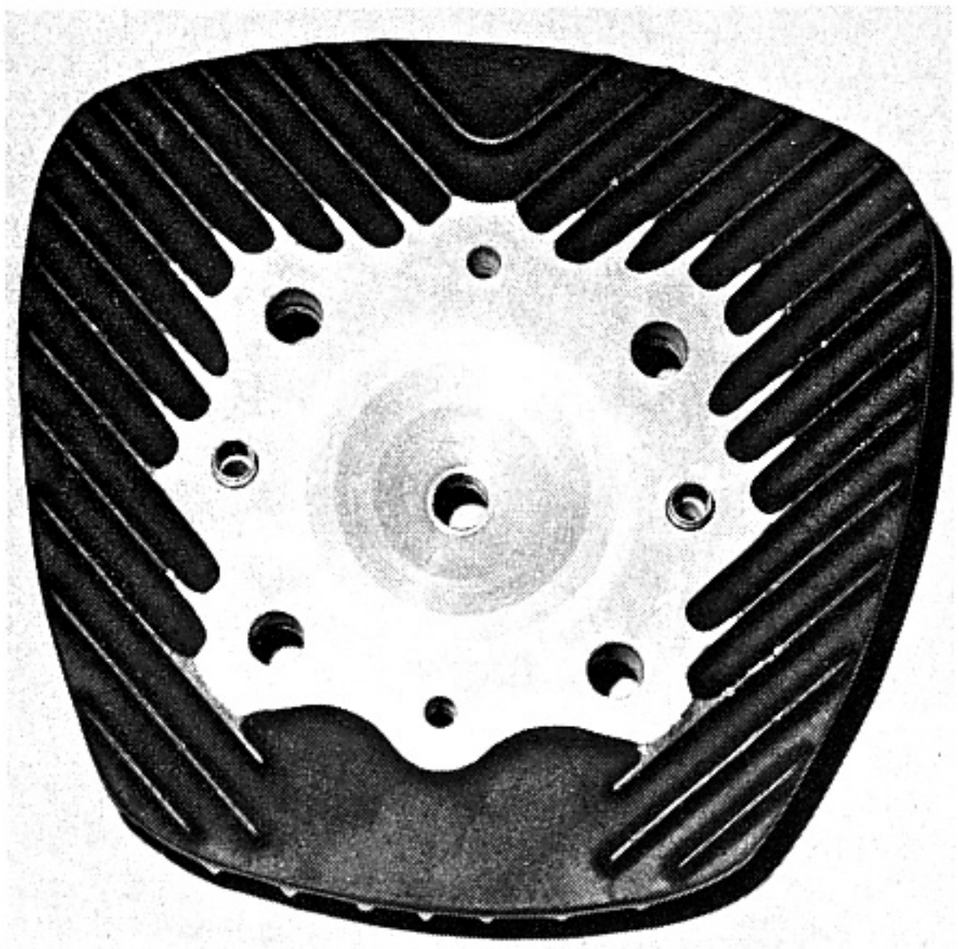

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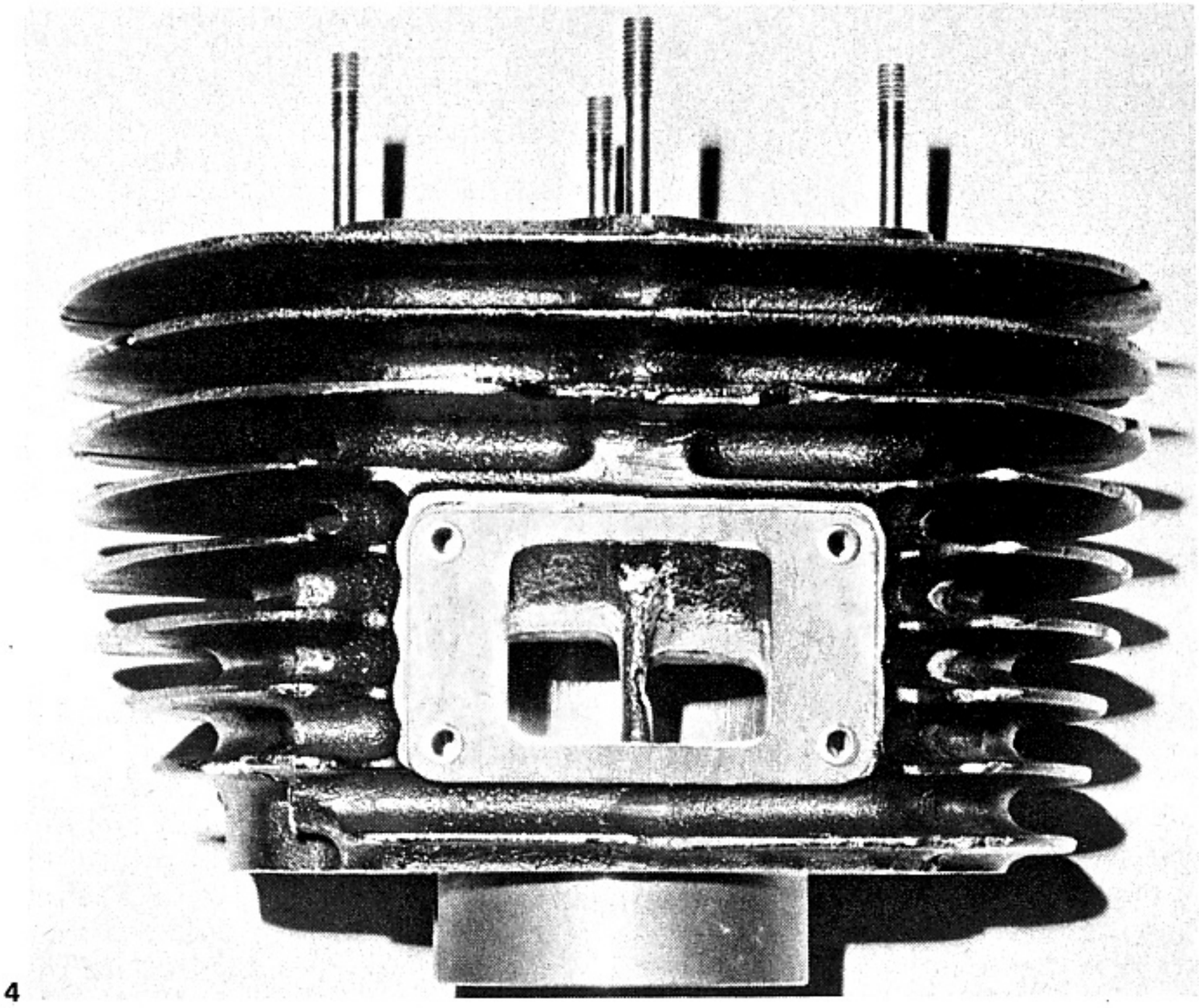

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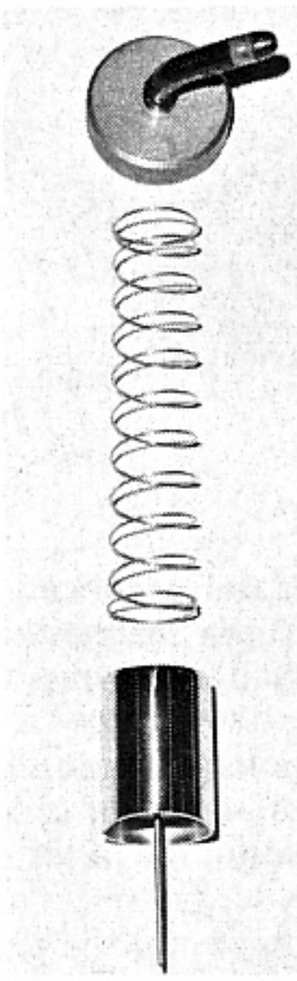
3. Aluminum head has moderate squish area. Compression ratio is 7.2:1.

4. Staggered intake port timing is one of the reasons for the Honda's wide power band. Dual transfer ports on each side of cylinder angle deeply into bore. Exhaust port is also angled for optimum flow.

5. Throttle slide is brass-chromed to eliminate friction and sticking within the throttle body.

6. Carburetor main jet is shrouded from fuel surging and starvation. Floats are solid foam items. Bowl can be drained quickly without removal of carburetor.



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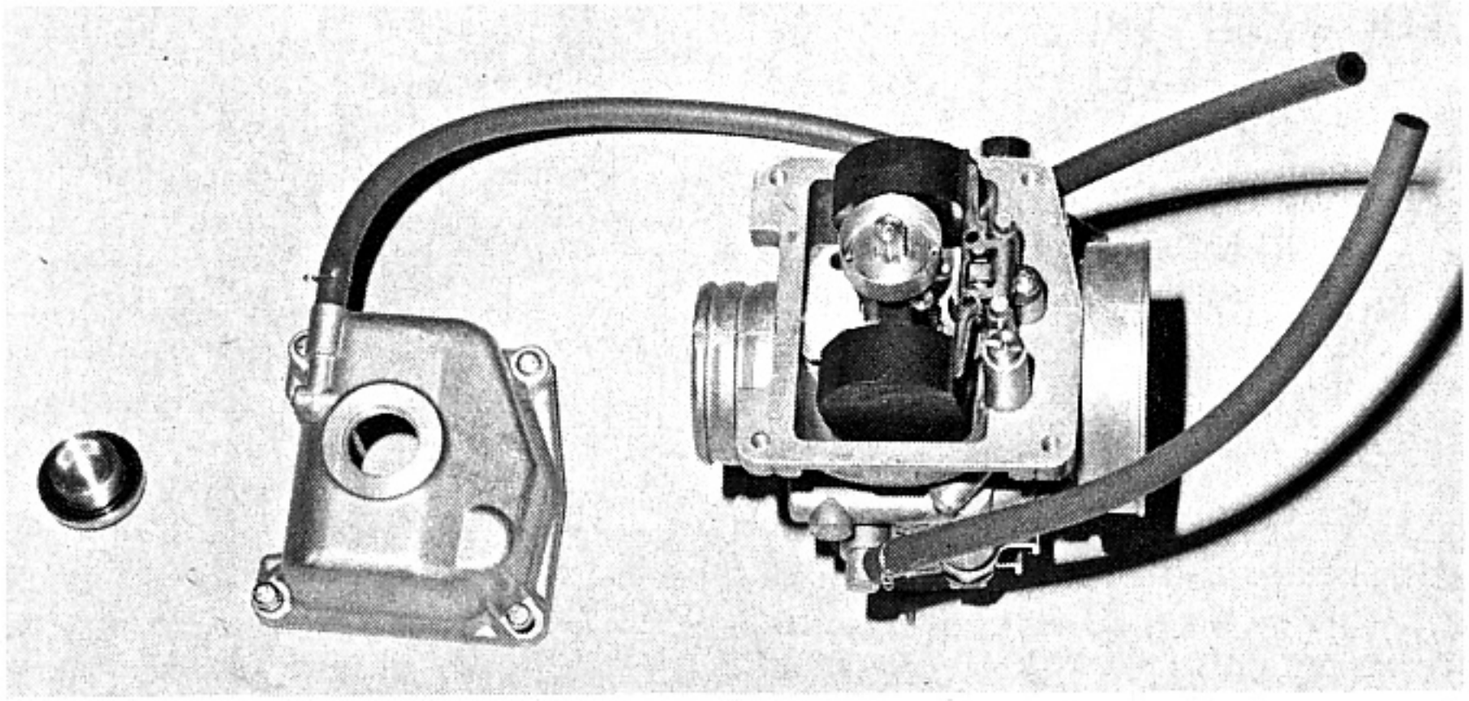

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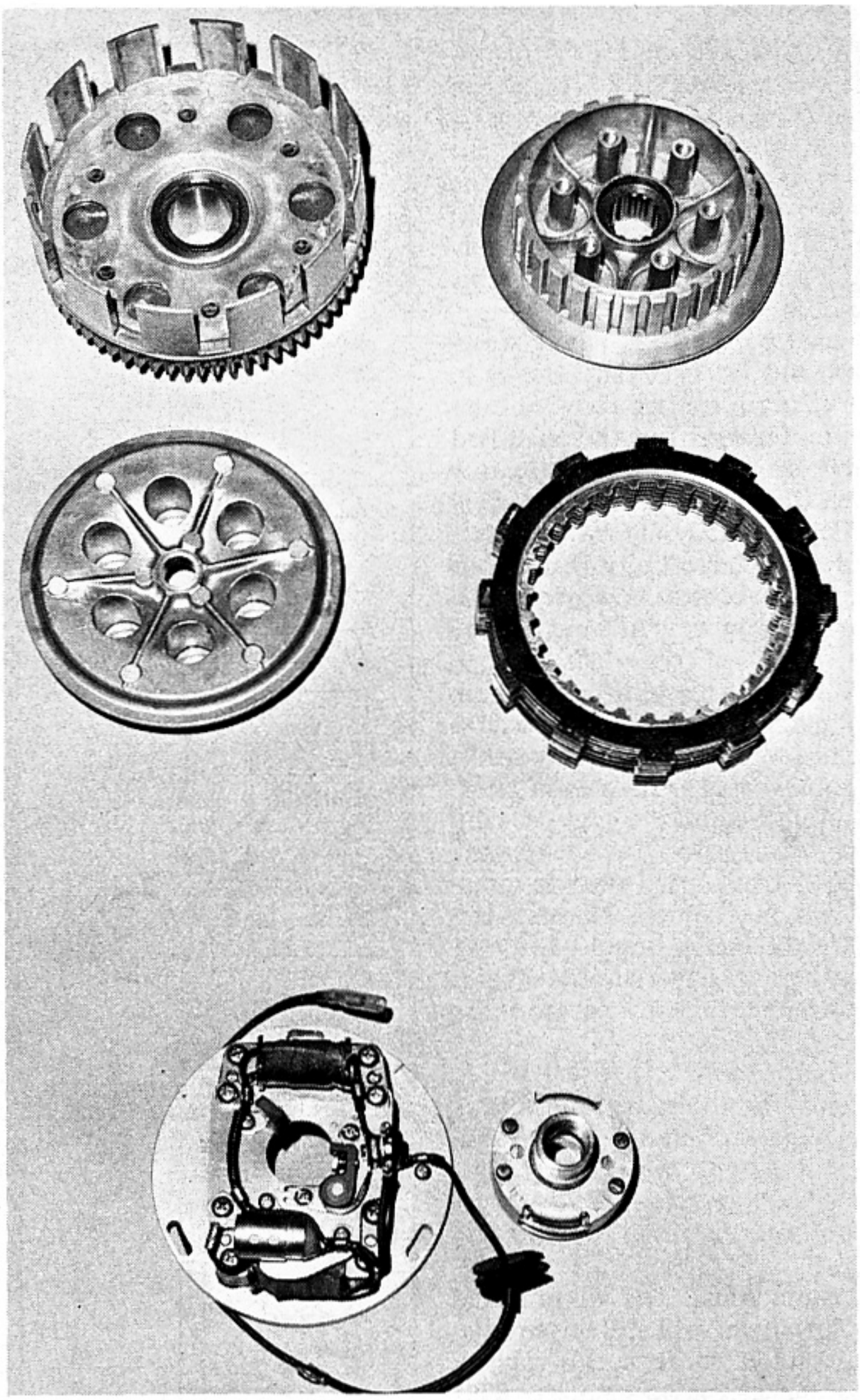

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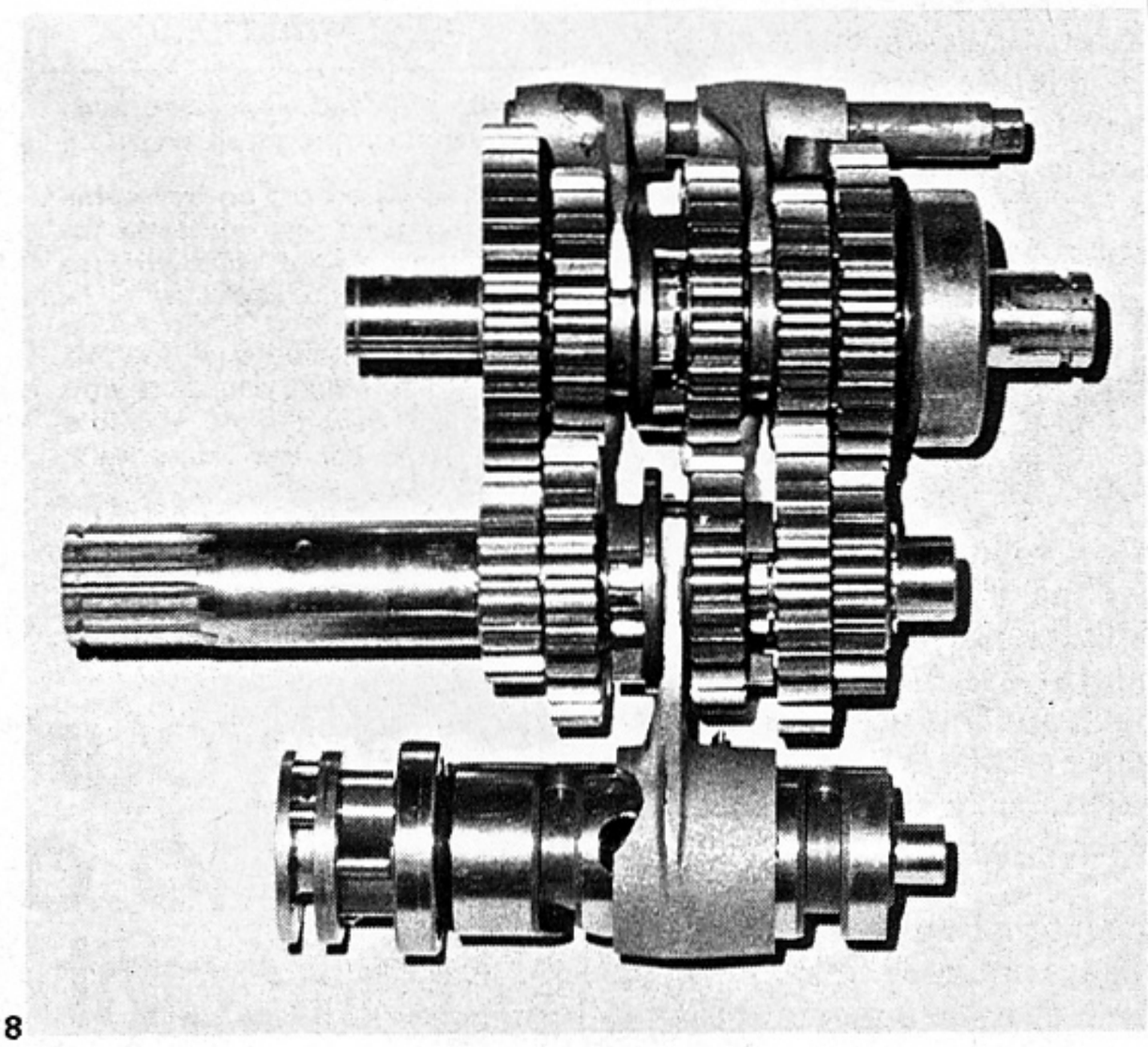
7. Fourteen-plate steel and cork clutch is housed in aluminum hub. Ignition is by flywheel magneto.



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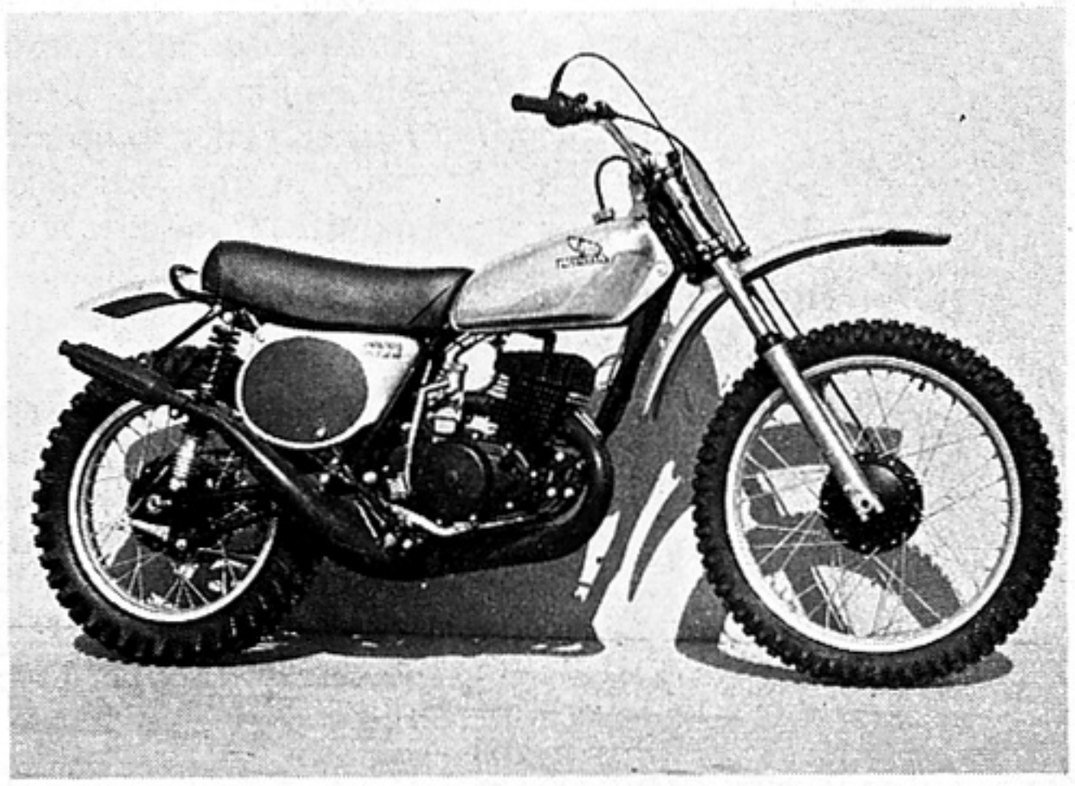
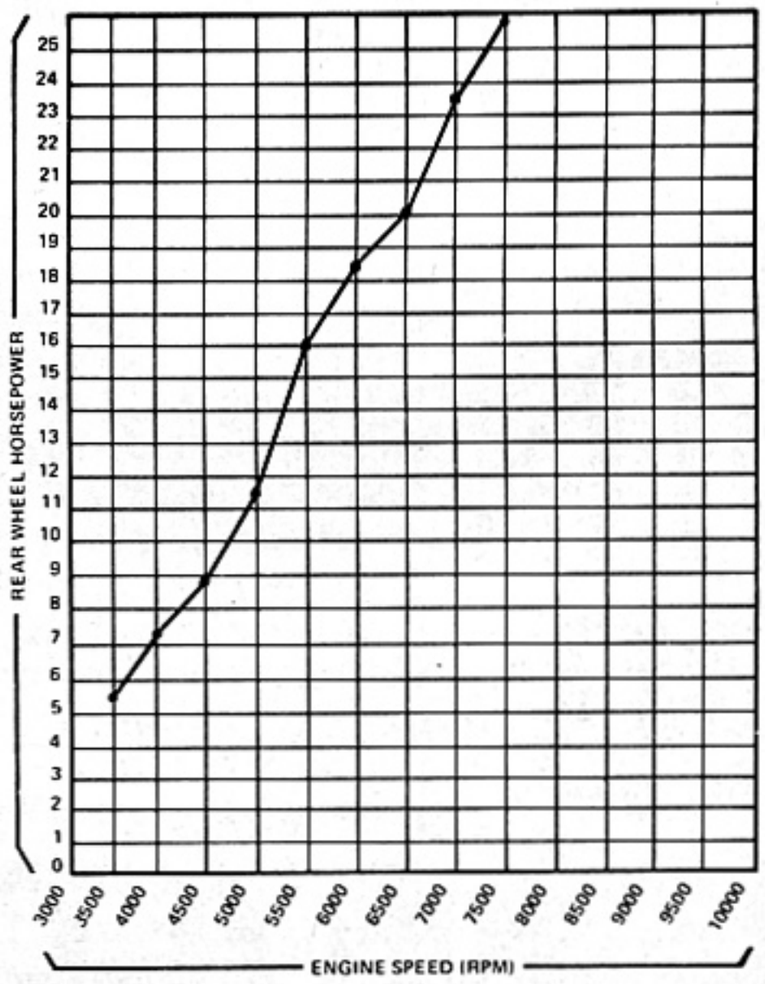
8. Smooth shifting five-speed transmission appears very strong.

HONDA CR 250M ELSINORE



DYNAMOMETER TEST REPORT



TORQUE	
10000	
9500	
9000	
8500	
8000	
7500	18.3
7000	19.1
6500	20.5
6000	19.2
5500	16.7
5000	13.4
4500	11.6
4000	10.7
3500	9.2
3000	
2500	
2000	

SPECIFICATIONS

PRICE
Suggested retail $1145

ENGINE
Engine type ..... two-stroke, piston-port, single-cyl.
Bore and stroke
in. ..... 2.75 x 2.53
mm ..... 70 x 64.4
Displacement
cu. in. 15
cc 248
Compression ratio 7.2:1
Carburetion .... 34-mm Keihin
Ignition .... flywheel magneto

TRANSMISSION
Speeds ..... five
Primary drive straight-cut gears
Clutch type .... wet, multi-disc
Final drive .... chain, 5/8 x 1/4

CHASSIS
Length, overall, in. 84.3
Wheelbase, in. 57.1
Ground clearance, in. 7.5
Weight, overall, lb. 219
Frame type . semi-double cradle
Tire size
front 3.00–21
rear 4.00–18

used on each dampener to give dual-range response at any of the five preload settings. The lower springs are very soft and eliminate jolts when traveling at low speed over unimproved terrain. The stiffer springs sitting on top do most of the work when bounding over the rough stuff at your favorite track. The bouncer's body is aluminum and holds about 145cc of oil. The lower three inches of the unit are finned to dissipate heat and help maintain hydraulic viscosity. A steel shaft operates the dampener valve inside the shock. Travel is rated at 4.1 in. The front forks are beautiful. Polished aluminum legs on chrome steel sliders set off the front end with much the same style as a chrome radiator on an old Ford. Not only are they eye-catchers but they're also both light and strong. Mounted on dual aluminum triple clamps these beauties offer 7.1 in. travel. The top of the legs are marked with five gradations. The legs may be adjusted up or down through the triple clamps altering the rake of the front end until the desired steering geometry is achieved. At the other end, the axle is held in place by caps which mount up to four studs *a la* Triumph. Not much chance of ever losing that front wheel.

Tires are manufactured by Dunlop and are of the Sports configuration. A 4.00–18 delivers traction to the ground while a 3.00–21 handles the steering chores. Both are excellent choices and do their jobs flawlessly. This rubber is mounted to the nearly indestructible Honda alloy rim, first introduced on their XL 250. Neither wheel showed the slightest sign of misalignment even after hours of constant pounding. Both brake hubs are aluminum and are painted jet black. The rear one is cable-actuated but not full-floating. Honda said that their experiments with full-floating hubs did not demonstrate any measurable gain in braking efficiency over a conventionally anchored unit. Whatever the reason, it works perfectly. The conical configuration of the rear brake hub shows even more of the effort expended to save weight on this MX'er. The full-width front stopper surely rates as one of the best if not the best off-road brake available.

We're sure that you've noticed the exhaust pipe by now. It exits the exhaust port to the right of the downtube, curves under the left side of the engine and snakes back to the right side, then out and up. A small muffler completes the package which terminates just aft of the right shock absorber. The entire exhaust system is spring-and-rubber-mounted to eliminate cracking and metal fatigue caused by vibration.