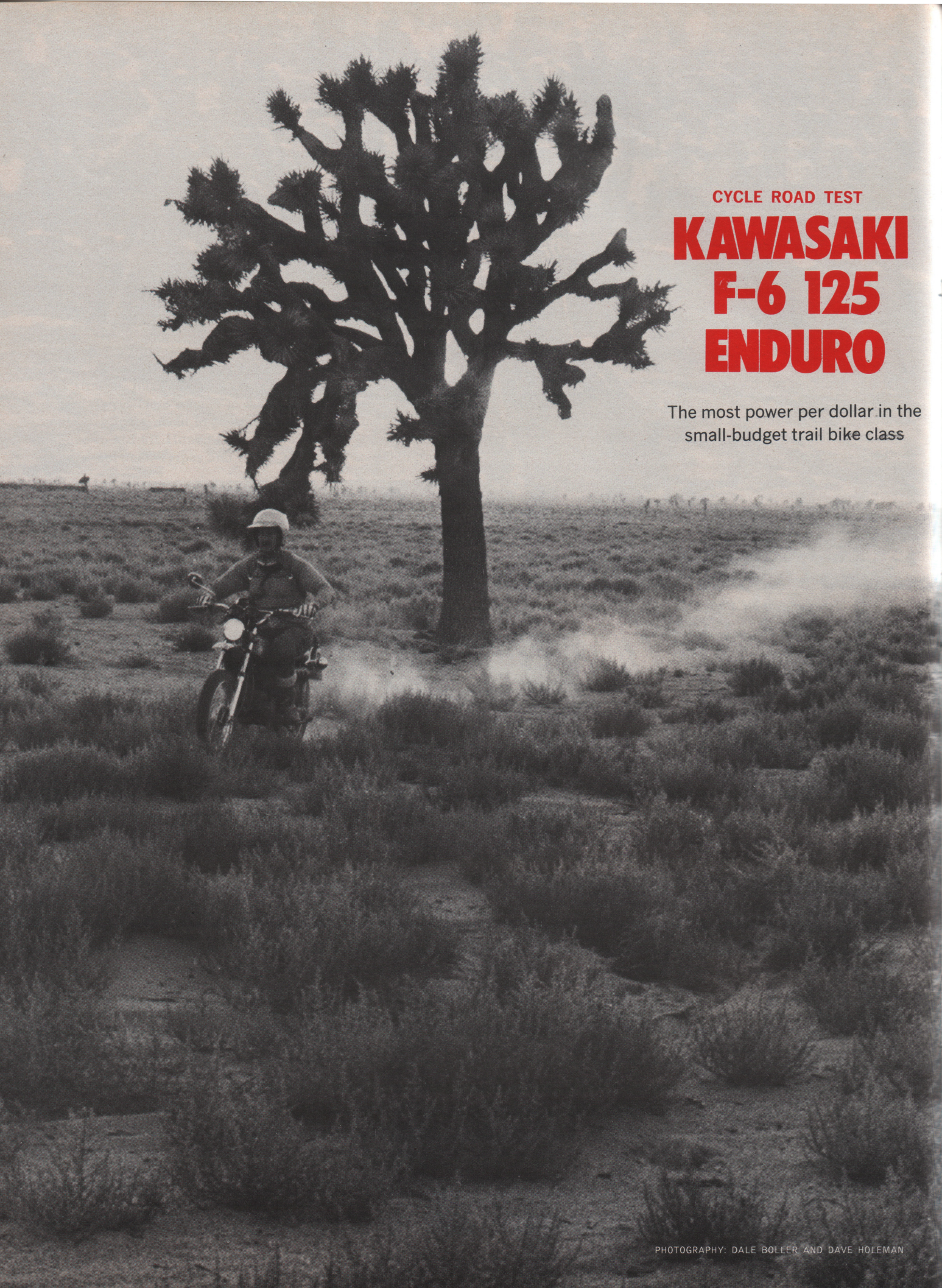


CYCLE ROAD TEST

KAWASAKI F-6 125 ENDURO

The most power per dollar in the small-budget trail bike class

PHOTOGRAPHY: DALE BOLLER AND DAVE HOLEMAN

• A good trail bike doesn't necessarily constitute a good enduro machine. By the same token a good enduro bike isn't a good street machine. But there's the compromise bike that does, or is supposed to do, on- and off-road chores with equal dexterity. If you're a dyed-in-the-wool, mud-in-the-veins enduro rider you'll certainly find more to bitch about in the 125cc Kawasaki that you would in a near-$1,000 Penton Six Day Replica. If you're a novice trail rider who wants a small trailster that's as satisfactory on asphalt as in the dirt, the F-6 will appear as fault-free as any frugal dual-purpose bike.

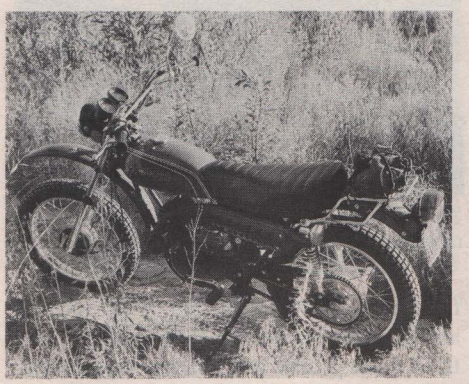
The preponderance of cheap trail bikes look exactly like the last-minute, shoddy efforts they are. The Kawasaki F-6 is an inexpensive trail bike—but it looks nothing like a last-minute effort. It's as well-finished and concisely thought-out as any dual-purpose machine on the market. Appearance, paint and chrome finish, castings and incorporation of trail features make Kawasaki's F-6 look, feel and function more than adequately on- and off-road. The bike just doesn't scream out "cheapie" to the chagrin of its rider.

In terms of total engine performance the F-6 is clearly the strongest 125cc dual-purpose bike available. Only three other 125s can match and surpass the F-6: the Penton and two DKW enduros—all expensive specialty enduro machines, not trail bikes. Kawasaki's horsepower-oriented engineers chose rotary-valve induction to obtain the most pressure and tractability possible from this 7½-inch two-stroke. Interestingly, the F-6 is the only rotary-valve two-stroke in its class—and it's the strongest.

Use of the rotary-valve (or disc as it's occasionally termed) permits independent timing control of the opening and closing of the induction track. More popular (and less expensive) piston-port systems, even with reed-valve aid, lack separate individual control of the opening and closing moments in the intake system. Located to the right of the

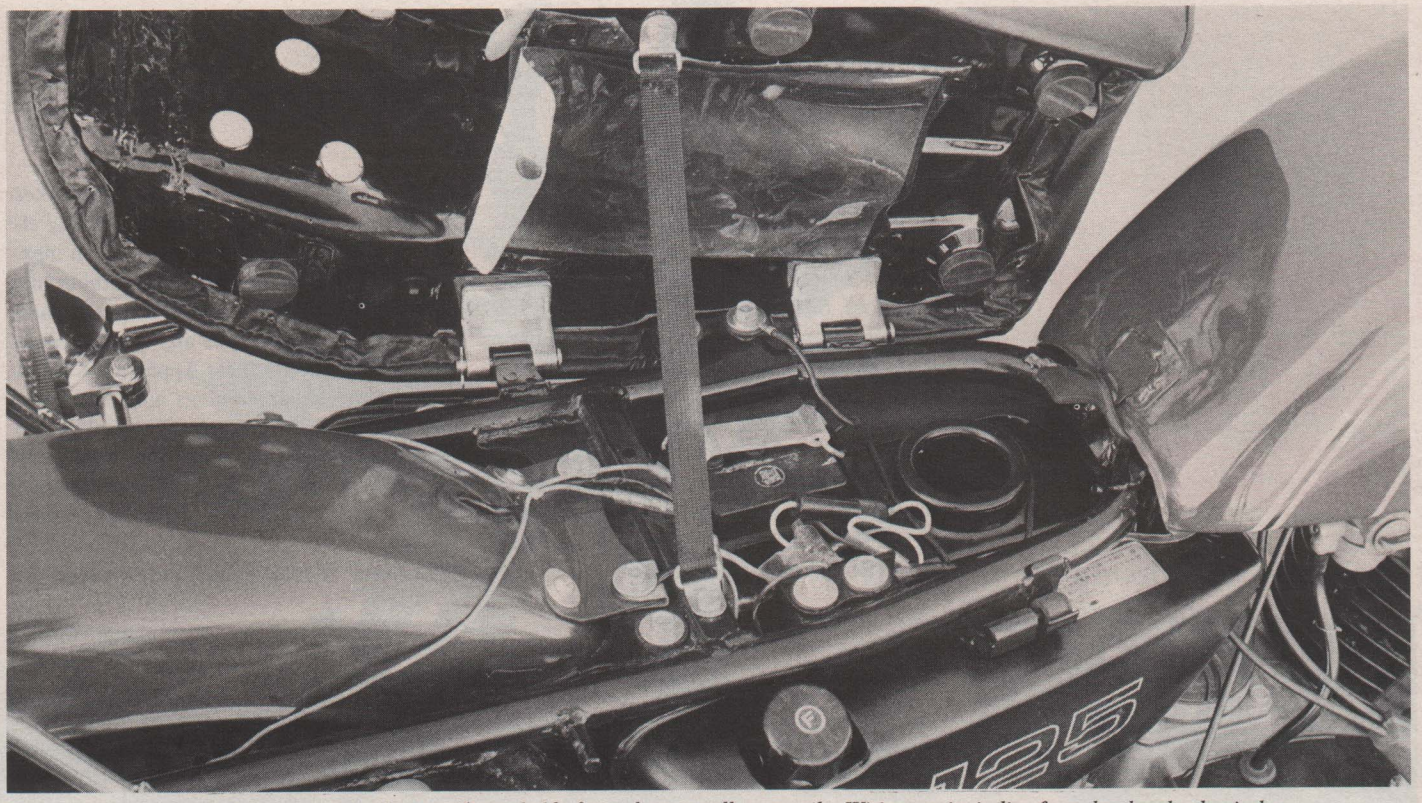
The F-6 is fine for low-pressure, low-speed trail riding. A genuine enduro mount it's not.

The little 125 withstood the rigors of propelling a 200-pound payload on a 320-mile off-road charge.

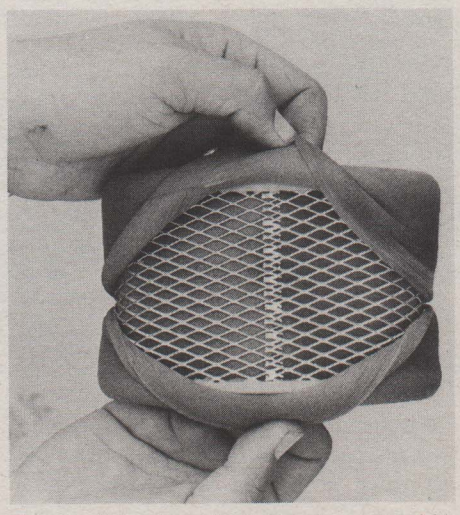


Two things just can't be faulted on Kawasaki's 125 trailster: its good looks and its $585 pricetag.

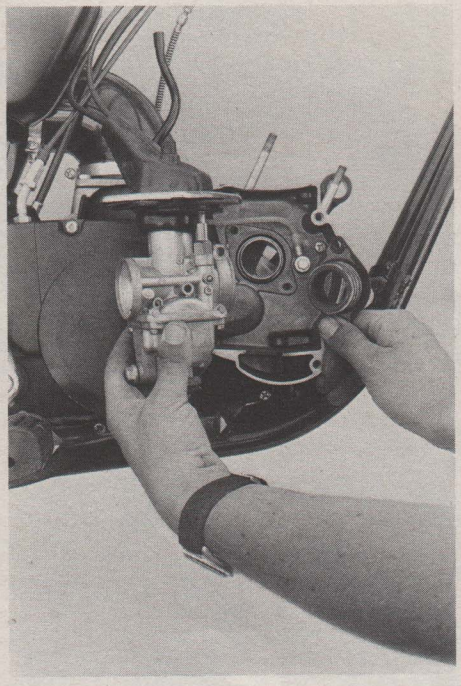
Small Dunlop block-pattern tires just aren't the proper items for serious off-road work.



The air cleaner cannister is tucked under the seat; the washable foam element pulls out easily. Wiring carries in-line fuses, has handy plug jacks.



The air-cleaner foam is all one piece which folds over the wire-mesh cleaner frame.



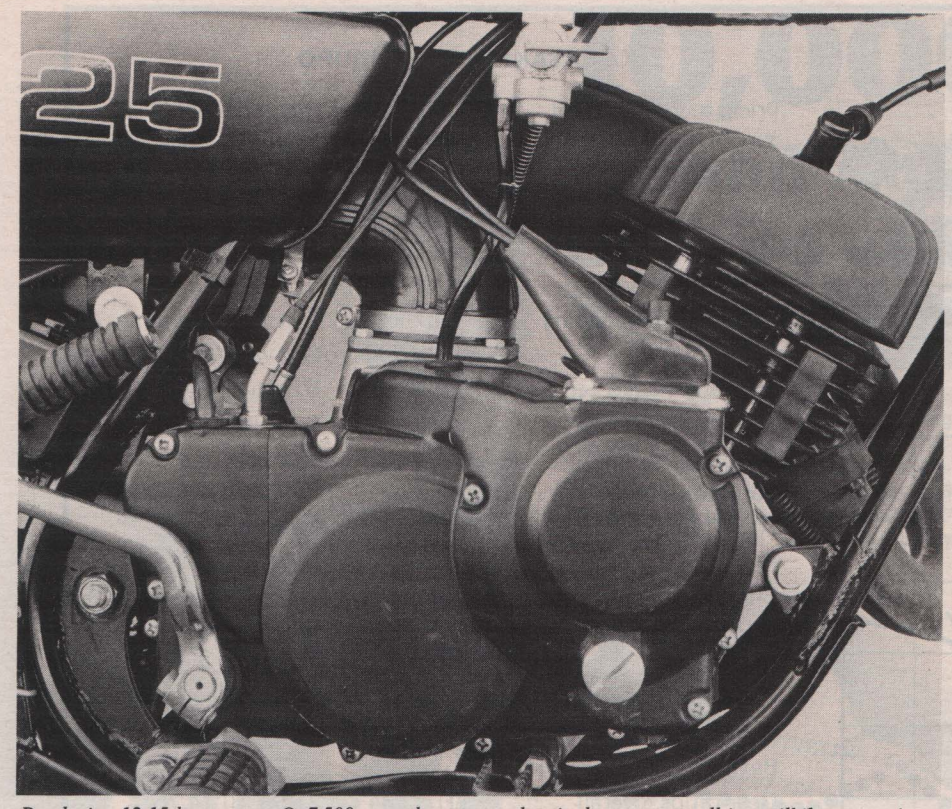
Behind the carburetor, fiber rotary valve controls the opening and closing of induction stage.

The rake and trail can be varied by moving the tubes up and down in the triple clamps.

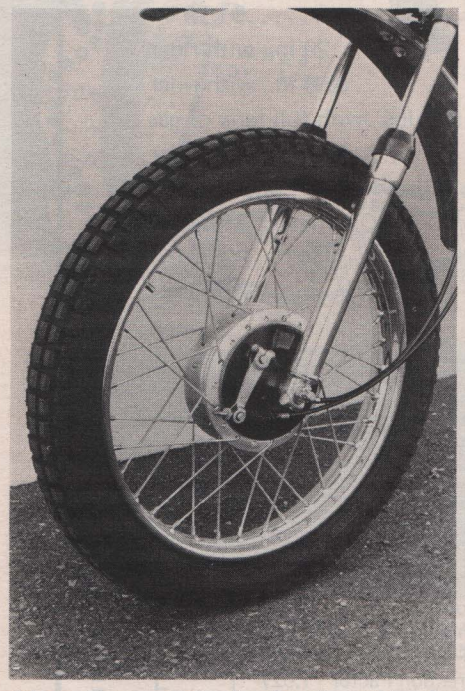
crankshaft, the rotary valve is simply a fiber disc that closes and opens the passageway from the carburetor to crankcase area. The disc is cut away a precise amount to open the intake track for a specific period of time, permitting a fuel charge to be drawn into the crankcase area during the vacuum phase of the engine's cycle. Since the disc rotates with the crankshaft, it opens and closes the induction track with the same precision as an intake valve in a four-stroke.

Conventional two-strokes use the rear skirt of the piston to control the intake timing. As the piston moves up and down the skirt opens and closes the intake port by shrouding and unshrouding it. With this system, modification of intake timing involves trimming the piston skirt or raising the port opening with a grinder. But when this is done the change in opening timing results in an equal alteration to closing timing—which isn't necessarily desirable. Since one side of the rotary valve cutaway opens the intake track and the other side closes it, it's possible to trim the opening or closing edge to improve breathing without affecting the alternate phase of the vacuum cycle. Such an arrangement enables the F-6's engine tuning to be more precise and efficient than its piston-port cousins.

Also unusual is that the F-6 is the only long-stroke 125cc single out of Japan. This indicates that the F-6 is a smaller-bore version of the bigger 175cc F-7—which means that the 125 engine has all the beef and strength built into the more powerful 175. Traditionally the Japanese have manufactured high-revving, oversquare engines. The F-6, with its moderately under-square en-



Developing 12.15 horsepower @ 7,500 rpm, the rotary-valve single outpowers all its trailbike competitors.



30-mm diameter fork tubes flex when subjected to hard use. Fork brace would help control flexing.

Hard riding eliminates damping. Suspension units lack sophistication for heavy-duty use.

gine (52mm bore and 59mm stroke), produces maximum torque at 6,500 rpm (8.56 ft/lbs.) and peak horsepower at 7,500 rpm (12.15 hp). The muscular engine starts to pull with authority at a mere 2,500 rpm and runs hard all the way up to 9,000 rpm. That's a tremendous 6,500 rpm powerband, a welcome feature for novice riders.

Long, tough, miles of street, trail, woods, cross-country, rocks, sand and neglect were to be the test bed for Kawasaki's little F-6: a 320-mile, two-day jaunt over the top of the Angeles Forest, down to the floor of the Antelope Valley and up to the high desert. Conditions ranged from 65 degrees to 108 degrees (in the shade), narrow woods trails to open desert, boiling deep sand to carnivorous rocks and through bright day into darkness. The poor little F-6 was too burdened with a 200 plus-pound rider laden with a back-pack filled with supplies and water. The only tools carried were those supplied with the motorcycle.

Hot or cold the engine is a glide-through, first-kick starter. Mechanical noise and intake drone are virtually nil; the spitter-spatter of the spark arrester/muffler is the only sound from the engine. Cold weather starting requires use of the convenient thumb-operated choke on the underside of the left switch assembly. It's seldom needed when the air is warm.

Even with its broad powerband, the 125cc engine is understandably reluctant to pull heavy loads up steep grades or over obstacles unless turning more than 5,000 rpm. Slow woods riding virtually demands lower gearing to enable the engine to spin higher. One less tooth on the countershaft sprocket (from 14T to 13T) would be a good starting point with further addition of teeth on the rear sprocket if slower speeds are regularly encountered. For fire roads and most cross-country use, as well as street riding, the overall gearing is just fine as is. Though unwilling to accelerate below 5,000 rpm, the engine will plonk along pulling its payload willingly at anything above 3,000 rpm on hard-packed, level roads.

Internal gearing is ideal for a trail bike. First and second are close together and have ratios that enable the bike to pull through or over tougher obstacles. There is more distant spacing of ratios in the higher gears, and a tall fifth gear gives the F-6 a perfect speed range for open trails and an indicated 75 mph top end. Shifting is precise and short with crisp changes guaranteed when the clutch is used. During those harried moments when using the clutch seems impractical a quick blip of the throttle and sharp, simultaneous jab at the shift lever will neatly always get you the desired gear.

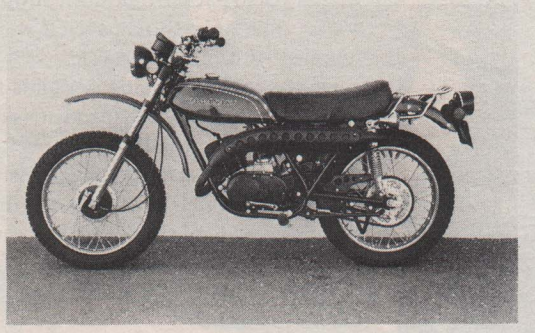
The 15-plate, oil-bath clutch is extremely durable. Merciless slipping, engaging and disengaging while climbing out of the woods and rock gardens boiled the clutch, yet only a small amount of free-play at the lever was lost. In normal use it is ideal, with a nice broad engagement point and there were no signs of grabbing or chattering.

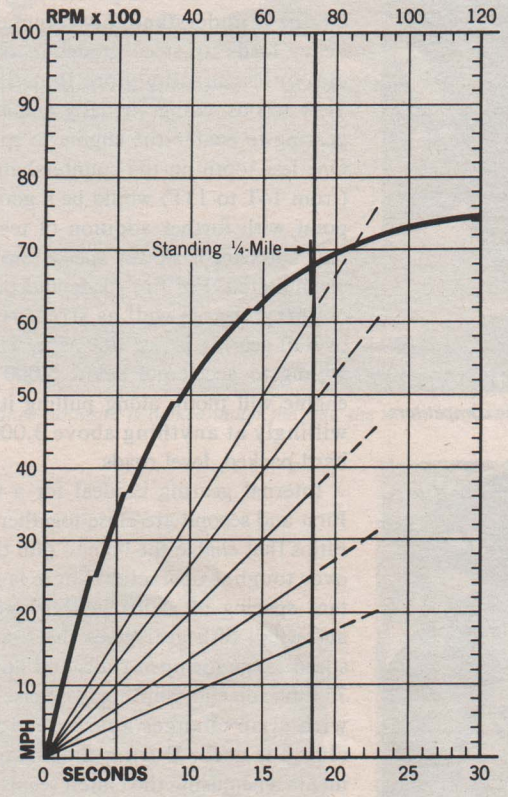
Kawasaki's popular CDI ignition is absent in the F-6, which uses a conventional flywheel magneto that is less sensitive to heat and severe jolts. During the entire 367-mile test the engine didn't miss a beat or sputter a sput, whether whistling through the cool woods, over scorching desert sands or screaming flat-out down twisty mountain roads. Equally durable was the lighting, which we kept switched on at all times and which finished with each filament still operating perfectly.

As great a street and trail bike as the F-6

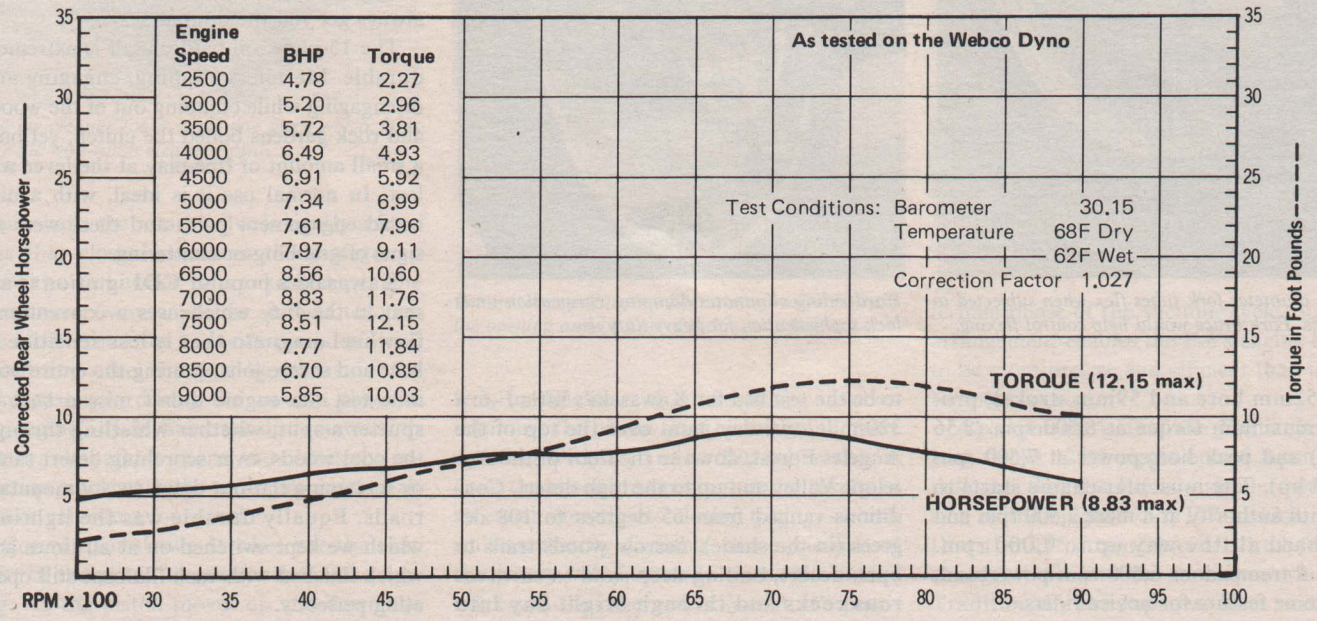
(Text cont'd. on p. 102; charts overleaf)

KAWASAKI F-6 125 ENDURO





Price, suggested retail	West Coast, POE $585
Tire, front	3.00 in. x 18 in. Dunlop Trials
rear	3.25 in. x 18 in. Dunlop Trials
Brake, front	5.12 in. x 1.10 in.
rear	5.1 in. x 1.10 in.
Brake swept area	17.6 sq. in.
Specific brake loading	14.7 lb/sq. in., at test weight
Engine type	Two-stroke, rotary-valve single
Bore and stroke	2.05 in. x 2.32 in., 52mm x 59mm
Piston displacement	7.56 cu. in., 124cc
Compression ratio	7.2:1
Carburetion	1; 24mm; Mikuni
Air filtration	Oiled polyurethane foam
Ignition	Flywheel magneto
Bhp @ rpm (claimed)	14.3 @ 7,000 rpm
Mph/1000 rpm, top gear	8.23
Fuel capacity	2.4 gal.
Oil capacity	1.6 quarts
Lighting	6v, 50 watts
Battery	6v, 4 ah
Gear ratios, overall	(1) 32.84 (2) 21.53 (3) 14.76 (4) 11.19 (5) 8.86
Wheelbase	51.75 in.
Seat height	29 in., with rider
Ground clearance	8 in., with rider
Curb weight	259 lbs., with full tank of gas
Test weight	459 lbs., with rider
Instruments	Speedometer, Tachometer, Odometer, Tripmeter
Sound level, Calif. Std.	82 dB(A)
Standing start ¼ mile	18.333 seconds 67.56 mph
Top speed (indicated)	75 mph



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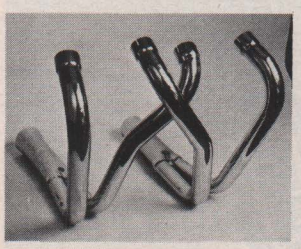
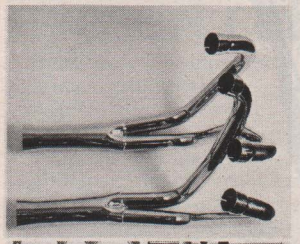
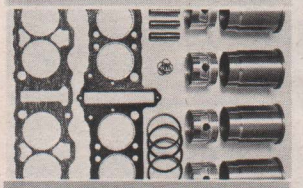


Honda Glas-pak Cross-over "Drag" Pipes
CB750 **$66.50**



CB500 **$66.50**



Honda "Big Bore" Kits
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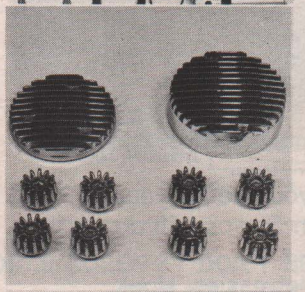
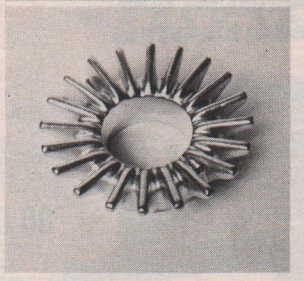
CB500 600cc
$107.50



Honda 10 piece Finned Cover Kits (8 valve, rotor 1-point cover)
CB 750/4
$21.00 kit
CB 500/4
$21.00 kit
CB 350/4
$21.00 kit



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F-6 125 *Continued from page 71*

is, the machine is not, out of the crate, a genuine enduro mount. Most of the equipment is there to make it a competitive enduro scout, but handling stability, traction and high speed control in the rough leave much to be desired. Three notable weak points tend to cripple what could otherwise be an outstanding off-road competitor in the 125 class. The F-6's shoddy suspension units, poor choice of front wheel size and skinny tire along with excessive engine width are an expert rider's curse.

Kawasaki's choice of forks for the F-6 obviously was a matter of economics. The least expensive—and least satisfactory—way of providing fork damping is simply to pump fork oil back and forth from the annular chamber between the outside of the fork stanchion and the inside of the slider. This chamber's volume increases as the wheel jounces upward and shrinks on rebound, and the oil provides a damping action by being pumped through small holes in the stanchion tube. The system works, but not very well. If the holes are large enough to keep the upward wheel movements from becoming a jolt at the handlebars, they will be too large to provide decent rebound control. This unfortunate characteristic looms large in the Kawasaki forks' behavior, which allows the front wheel to hop and bounce at will—and occasionally put control beyond the rider's grasp in choppy turns. Hatta forks, like those on the 175 F-7, or something similar would be a bit more expensive but vastly better in operation.

Contributing to instability when the bike is pressed hard in a turn or in the rough are the flimsy, 30mm-diameter fork tubes, which flex side-to-side under stress and let the front wheel wander off course. The forks can be moved up and down in the triple clamps a full 3 inches to change the steering angle. With the forks up in the crowns, the rake angle is reduced from 31 degrees to 28.5 degrees, trail shrinks from 4.5 inches to 3.75 inches and the wheelbase comes down to 52 inches from 53 inches. The F-6 proved to have infinitely better handling with the fork tubes fully extended downward in the triple clamps. With the tubes moved up the full 3 inches, control is erratic and steering is difficult and tiring. Unfortunately, with the forks fully extended, the lengthy 8.25-inch distance between the bottom triple clamp and top of the slider is just too much for the flimsy tubes to support rigidly without a fork brace.

At the rear are a pair of inadequate dampers, although the springs are excellent for sub-200-pound riders. Five adjustment settings for spring preload compensate for rider weight and varying terrain. The more the weight or the rougher the trail, the higher the adjuster should be moved. But as the adjuster is rotated to boost spring tension, the less the mediocre dampers are able to control the pogo action of the shocks. And when the shocks get hot, virtually *all* the damping disappears. The result is an unnerving amount of back-end hop in rough stuff, along with an uncomfortable ride.

Most disconcerting in softer going is the diminutive 18-inch front wheel. The smaller contact patch lets the tire knife and cut into the sand, rather than rolling over it. Additionally the small Dunlop Trials Universal tires with their block pattern tread and skinny carcass width is certainly an uncomfortable compromise for any kind of serious off-road work.

Finally, the protrusion of the right-side carburetor cover is less than desirable in the rocks or when squeezing between tree stumps. Fully 14 inches wide, the engine is the same width as Honda's SL-350 twin and 1.75 inches wider than the Honda XL-175 single. Measuring the F-6's right-side case protrusion shows it to be 2.5 inches wider than the SL-350's and 1 inch more than the XL-175's. During testing of the Kawasaki 175 F-7 (*Cycle*, August '73), an omnivorous rock literally sheared the carburetor cover off the engine during an enduro. And since the F-6 and F-7 engines are identical except for bore size, the same thing could, and probably will, happen to the 125. So be warned.

Given time and money, there are cures for the F-6's deficiencies. A decent pair of double-damping forks and some good damper units at the rear would do wonders to stabilize the already good chassis. A bigger rear tire, either a trials type or knobby, would be a welcome aid for off-road traction during both acceleration and stopping. And a 19-inch trials or 21-inch knobby up front would make all the difference in the world in steering accuracy and predictability. Finally, the more committed dirt riders should certainly consider a crash-bar guard for the rotary-valve carburetor cover. These improvements would make the F-6 50 per cent more trailable and 100 per cent better for enduro riding.

The spongy suspension units held back accurate analysis of the chassis, although its handling is noticeably better than most other 125cc Japanese trail bikes (the Yamaha and Suzuki, for two). The solo saddle is certainly one of the best available on a small-displacement trail bike. Seating position and general comfort are quite good for a 125, and left the staff riders with minimal discomfort after continuous hours on the trail. The only discomfort came from the footpegs which let the riders' feet clip passing rocks and obstacles. Raising the adjustable pegs helped, but still left the riders edgy about potential toe-busters.

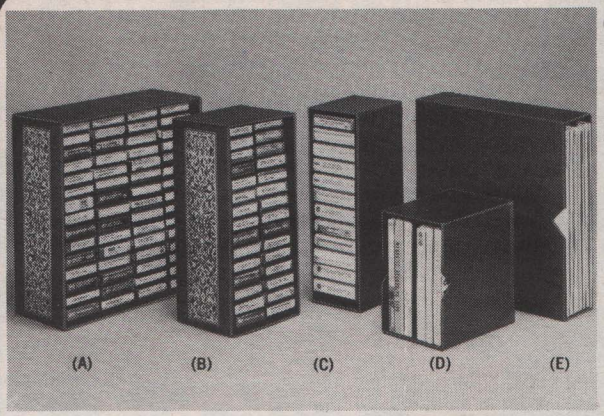
Location of the front turn signals on the handlebars is in a direct line with the riders' kneecaps when the bars are turned to

their full-lock position. To prevent black and blue knees the turn signals must be removed; plan on it. The petite 6-volt, 25 watt headlamp is adequate up to 45 or 50 mph, but won't reach out far enough for higher speeds. Instrumentation includes a superfluous 11,000 rpm tachometer and ridiculously optimistic 100-mph speedometer. The speedometer does include a handy tripmeter which can be reset in tenths; that's an excellent feature for enduro riding.

The brakes are superb and totally predictable for street or trail. Water crossings had little affect on their adhesion, indicating good factory weather-proofing.

The only time the bike was touched was to repair a weld on the bottom bracket of the oil injector reservoir. Close inspection revealed some shoddy welding here as well as in other critical areas. Globs on the oil tank brackets appear to have been thrown on by a short-order cook with a spatula. In reality, rapid cooling caused embrittlement of the metal; and poor penetration indicated hasty workmanship. The local Kawasaki dealer didn't stock replacement oil tanks so a sympathetic shade-tree mechanic welded a bead over the crack to save the day and the trip. Oil mist later appeared around the top bracket weld, indicating its intention to fail in exactly the same way as the lower bracket had already done.

Undisputed strong points of the F-6 are its muscular engine, hearty clutch, well-matched gearing and better-than-average chassis. Time after time the engine was pushed brutally up to and beyond its limits. Each time it came back with rock-steady repeat performances. It wouldn't get hot enough to ping, even in the searing desert heat. It's relatively economical, as evidenced by cranking out a steady 37.1 mpg and consuming less than a quart of oil in 300 miles, even with the cracked and leaking weld. Of more than passing importance to most riders is price. At $585 it's the cheapest dual-purpose 125 available. An enduro bike it isn't, but a street and trail bike it is. Without question it supplies the most performance per dollar. The Hodaka handles better—but costs about $100 more. As for the remainder of the Japanese 125cc dual-purpose machines, the stout-engined little Kawasaki will absolutely eat them alive. ◉



(A) 60-unit cassette case. 13½" high x 12⅝" deep x 5½" wide.
(B) 30-unit cassette case. 13½" high x 6½" deep x 5½" wide.
(C) 12-unit cartridge case. 13¼" high x 6½" deep x 4¼" wide.
Units A, B and C have tilted compartments to prevent spillage and include pressure sensitive labels for titling.
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